



SAP Integrated Report 2017

# Intelligent Enterprise





# About This Report

## Content

Since 2012, we have reported on our full-year financial, social, and environmental performance in one integrated report ("SAP Integrated Report") available at

<http://www.sapintegratedreport.com>. The SAP Integrated Report 2017 takes into consideration the recommendations from the International Integrated Reporting Framework.

The financial reporting presented in the SAP Integrated Report includes our Consolidated Financial Statements and our Combined Management Report. Following our integrated reporting approach the Combined Management Report also provides non-financial information. This non-financial information relates to topics derived from our materiality assessment including innovation, impact on society, human capital, business conduct, human and digital rights, and climate and energy. For more information about our materiality assessment, see the *Materiality* section.

## Basis of Presentation

Our Combined Management Report is prepared in accordance with sections 289, 289a, 289f, 315, 315a and 315d of the German Commercial Code and German Accounting Standards No. 17 and 20. The Combined Management Report is also a management commentary complying with the International Financial Reporting Standards (IFRS) Practice Statement Management Commentary.

Our Consolidated Financial Statements are prepared in accordance with IFRS. Our executive management has confirmed the effectiveness of our internal controls over financial reporting.

Our Non-Financial Report is prepared in accordance with sections 289b and 315b of the German Commercial Code, which require us to report, for both, SAP SE and SAP Group, on social, environmental, and other non-financial matters. All non-financial information stipulated in the German Commercial Code, sections 315c and 289c that is relevant to understand SAP's development, performance of the business, and the position of the Group and SAP SE is included in our Combined Management Report. Rather than repeating this information, our Non-Financial Report (which is part of this integrated report at <http://www.sap.com/investors/sap-2017-combined-non-financial-report>) provides references to the sections of our Combined Management Report that provide the required disclosures.

The social and environmental data and information included in the SAP Integrated Report has been prepared in accordance with the GRI Standards: Core option. This GRI option indicates that a report contains the minimum information needed to understand the nature of the organization, its material topics and related impacts, and how these are managed. We apply the GRI principles for defining report content (sustainability context, stakeholder inclusiveness, materiality, and completeness). We consider the principle of sustainability context in a number of ways, such as by looking at global issues or trends including climate change and demographic shifts. For example, we assess our greenhouse gas emissions in the context of the emissions of the entire information and communications technology landscape, with particular focus on the abatement potential of the industry. When it comes to completeness, we recognize that while we comply with this principle in reporting on our own operations, we are still developing methodologies to reliably quantify our impact through our solutions.

Greenhouse gas data is prepared based on the Greenhouse Gas Protocol.

## Data

All financial and non-financial data and information for the reporting period is reported utilizing SAP software solutions and sourced from the responsible business units.

The reporting period is fiscal year 2017. The report encompasses SAP SE and all subsidiaries of the SAP Group. To make this report as current as possible, we have included relevant information available up to the auditor's opinion and the responsibility statement dated February 21, 2018. The report is available in English and German.

## Independent Audit and Assurance

KPMG AG Wirtschaftsprüfungsgesellschaft has audited our Consolidated Financial Statements and our Combined Management Report (including the information that our Non-Financial Report references to). Additionally, KPMG has provided assurance on selected non-financial data and information in accordance with the International Standard on Assurance Engagements (ISAE) 3000 and 3410 ("Assurance Engagements on Greenhouse Gas Statements"), two pertinent standards for the assurance of sustainability reporting. Where our SAP Integrated Report makes reference to SAP's public Web site, that Web site information is unaudited. Both the

Independent Auditor's Report and the Independent Assurance Report for non-financial information are available in the *Independent Auditor's Report* section and the *Independent Assurance Report* section.

## **Concept and Realization**

This report was designed by SAP and created with SAP S/4HANA software and the SAP Disclosure Management application.

# Key Facts

€ millions, unless otherwise stated	2017	2016	Δ in %
<b>Revenues</b>			
Cloud subscriptions and support (IFRS)	3,769	2,993	26
Cloud subscriptions and support (non-IFRS)	3,771	2,995	26
Software licenses (IFRS)	4,872	4,860	0
Software licenses (non-IFRS)	4,872	4,862	0
Software support (IFRS)	10,908	10,571	3
Software support (non-IFRS)	10,908	10,572	3
Cloud and software (IFRS)	19,549	18,424	6
Cloud and software (non-IFRS)	19,552	18,428	6
Total revenue (IFRS)	23,461	22,062	6
Total revenue (non-IFRS)	23,464	22,067	6
Applications, Technology & Services Segment revenue	21,141	20,130	5
SAP Business Network Segment revenue	2,261	1,925	17
Share of predictable revenue (IFRS, in %)	63	61	2
Share of predictable revenue (non-IFRS, in %)	63	61	2
<b>Operating expenses</b>			
Cost of cloud subscriptions and support (IFRS)	-1,660	-1,313	26
Cost of cloud subscriptions and support (non-IFRS)	-1,427	-1,066	34
Cost of software licenses and support (IFRS)	-2,234	-2,182	2
Cost of software licenses and support (non-IFRS)	-2,044	-1,944	5
Cost of cloud and software (IFRS)	-3,893	-3,495	11
Cost of cloud and software (non-IFRS)	-3,471	-3,010	15
Total cost of revenue (IFRS)	-7,051	-6,583	7
Total cost of revenue (non-IFRS)	-6,462	-5,985	8
Research and development (IFRS)	-3,352	-3,044	10
<b>Profits and Margins</b>			
Cloud subscriptions and support margin (in % of corresponding revenue, IFRS)	56.0	56.1	0
Cloud subscriptions and support margin (in % of corresponding revenue, non-IFRS)	62.2	64.4	-3
Software and support gross margin (IFRS, in %)	85.8	85.9	0
Software and support gross margin (non-IFRS, in %)	87.0	87.4	0
Cloud and software margin (in % of corresponding revenue, IFRS)	80.1	81.0	-1
Cloud and software margin (in % of corresponding revenue, non-IFRS)	82.2	83.7	-2
Total gross margin (in % of total revenue, IFRS)	69.9	70.2	0
Total gross margin (in % of total revenue, non-IFRS)	72.5	72.9	-1
Applications, Technology & Services Segment gross margin (in % of corresponding revenue)	73	74	-1
SAP Business Network Segment gross margin (in % of corresponding revenue)	68	67	1
Operating profit (IFRS)	4,877	5,135	-5
Operating profit (non-IFRS)	6,769	6,633	2
Operating margin (in % of total revenue, IFRS)	20.8	23.3	-11
Operating margin (in % of total revenue, non-IFRS)	28.9	30.1	-4
Free cash flow	3,770	3,627	4
Net liquidity	-1,479	-3,153	-53
Days' sales outstanding (DSO, in days)	70	74	-5
Equity ratio (total equity in % of total assets)	60	60	0

€ millions, unless otherwise stated	2017	2016	Δ in %
Effective tax rate (IFRS, in %)	19.3	25.3	-24
Effective tax rate (non-IFRS, in %)	22.6	26.8	-16
<b>Order Entry</b>			
New cloud bookings	1,448	1,147	26
Deferred cloud subscriptions and support revenue (IFRS) <sup>1)</sup>	2,771	2,383	16
Orders – Number of on-premise software deals (in transactions)	59,147	57,291	3
Share of software orders greater than € 5 million (in % of total software order entry)	30	29	3
Share of software orders less than € 1 million (in % of total software order entry)	40	38	5
<b>Key SAP Stock Facts</b>			
Earnings per share, basic (in €)	3.36	3.04	10
Earnings per share, basic (non-IFRS, in €)	4.44	3.90	14
Dividend per share <sup>2)</sup> (in €)	1.40	1.25	12
Market capitalization <sup>1)</sup> (in € billions)	114.80	101.73	13
<b>Employees and personnel expenses</b>			
Number of employees <sup>1), 3)</sup>	88,543	84,183	5
Personnel expenses per employee – excluding share-based payments (in € thousands)	121	117	3
Women working at SAP (in %)	33	32	0
Women in management <sup>1)</sup> (total, in % of total number of employees)	25.4	24.5	4
Employee Engagement Index (in %)	85	85	0
Business Health Culture Index (in %)	79	78	0
Leadership Trust Index (LTI, in %)	61	57	7
Employee retention (in %)	94.6	93.7	0
<b>Customer</b>			
Customer Net Promoter Score (in %)	17.8	19.2	-7
<b>Environment</b>			
Net Greenhouse gas emissions (in kilotons)	325	380	-14
Total energy consumption (in GWh)	920	950	-3
Data center energy consumed (in GWh)	265	243	9

<sup>1)</sup> Numbers based on at year-end.

<sup>2)</sup> Numbers are based on the proposed dividend and on level of treasury stock at year-end.

<sup>3)</sup> Full-time equivalents.

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# To Our Stakeholders

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# Letter from the CEO



## Dear Stakeholders of SAP,

On behalf of the 88,543 employees of SAP, it is my honor to present the SAP Integrated Report 2017. We are proud of our strong financial, social, and environmental performance. We are a humble company, continuously fighting to earn the trust of our customers. We are also a hungry company, unafraid to embrace bold dreams for big opportunities ahead.

As we discuss our past, present, and future, the enduring constant is our vision to help the world run better and improve people's lives. Through this purposeful mission, we deliver leading solutions to make every customer an intelligent enterprise. We do this all in service to the best-run businesses, universities, and governments in the world – because now as ever – The Best Run SAP.

## Keeping Our Promises

Since we adopted our growth strategy in 2010, our revenues, profits, market value, and customer count have all doubled or tripled. Please consider the following:

- *We set out to reshape the database industry.* Our goal was to deliver new levels of operational efficiency and business insight at mass scale. Forrester has now defined this new frontier as the market for “Translytical Data Platforms.” They ranked SAP HANA the clear #1 in both strategy and market presence. SAP HANA supports volumes of data in-memory, up to a petabyte, returning results in under a second. Already with 21,000 customers, its market-making potential as a full-use database has only just begun.
- *We reinvented enterprise resource planning (ERP) software on an in-memory architecture.* Today, with nearly 8,000 SAP S/4HANA customers, we are leading the market to “Intelligent ERP.”

- *With cloud established as the pervasive computing theme of this generation, we acquired the best assets to help customers innovate at scale.* Today, we lead the industry by measure of cloud users with the most complete modular suite of solutions – ERP, line of business, business networks.
- *We presided over a full-scale business model transformation of SAP, delivering a consistent trifecta of fast cloud growth, software license growth, and operating income growth.*

Our 2017 results were the latest in our record run. New cloud bookings surged 30%. Cloud subscriptions and support backlog soared 38%, hitting €7.5 billion. We have a nearly four billion euro cloud business, growing faster than most standalone cloud companies. New cloud and software license order entry is up 17%. In short: our customers continue to invest their trust in SAP.

With our business thriving, our employees are enthusiastic. As a truly integrated report, we showcase non-financial indicators and their financial impact.

- SAP employee engagement has never been higher, leading to a record percentage of employees who are also shareholders of the company.
- Our people are healthier than ever, based on our Business Health Culture Index.
- As part of our company’s strong commitment to service, more SAP colleagues are making time to serve their communities – both locally and globally – through our Month of Service and SAP Social Sabbatical programs.
- Our industry-leading Autism at Work program has now expanded to 110 SAP teams, harnessing the talents of differently-abled colleagues around the world.
- We are proud to power our global data centers with 100% renewable energy. SAP was ranked #1 in the Dow Jones Sustainability Index for the 11th year in a row.

We also continue to build a diverse and inclusive culture at SAP, exceeding our goal of 25% women in leadership positions. It is important to recognize that SAP is focused on developing the best leaders. When we focus on the best, we see everyone rise on their merits. There are no finer examples of this than Jennifer Morgan and Adaire Fox-Martin, both appointed to the Executive Board in 2017.

As a market leader, SAP considers defeating bias in the workplace to be a moral imperative. We will only accelerate our work in this area until people of all backgrounds can avail themselves equally of professional advancement.

Because we stand on the shoulders of giants – none larger than our founder and chairman Hasso Plattner – we do not rest on our success. Our stakeholders deserve a company free from complacency, untarnished by low expectations. In this regard, we are never done.

## A Word About Our Challenges and Opportunities

To satisfy our ambitions for SAP, we remain keenly focused on addressing the most significant challenges *because* they are our biggest opportunities.

- When we ask chief executive officers to identify their biggest challenge, most answer “complexity.” CEOs know that the simplest global brands outperform the major indexes by 330%. Also, that 64% of consumers are willing to pay more for simpler experiences. This only proves that we were correct to make “Run Simple” the organizing principle of SAP. In 2017, we welcomed Christian Klein to the Executive Board as our chief operating officer. His mandate is to drive the Run Simple operating model throughout SAP, to significantly streamline our operations and to create the best possible end-to-end customer experience.
- Another challenge involves maturing technologies like artificial intelligence (AI). As many businesses accept the premise of technology-driven change, public anxiety surrounding this disruption has only increased. This creates an obvious burden that stretches across the public, private, and not-for-profit sectors. While we do not take an alarmist view, we do believe the world has not yet adequately focused on all the impending economic implications. With careful foresight, automation represents a once-in-a-generation opportunity to address societal challenges. Gartner predicts AI-enabled tools will generate greater than €3B in business value in 2021 and become a positive net job motivator, creating 2.3M jobs while eliminating 1.8M, a gain of 500,000 jobs. In cases where machine efficiency outweighs human discretion, we will engineer applications to absorb these processes. The correlating productivity gains will only be achieved when human workforces then rise into meaningful work which had been historically hampered by administrative complexity. This is why SAP’s global strategy, fueled by SAP Leonardo technologies and services, is to make every business an intelligent enterprise. We are focused on business “next practices,” the intersection of machine learning and augmented humanity. Success in the era of AI will only fully be recognized when we take the steps to initiate all people. We must not allow this period of uncertainty to deepen economic divides, especially as its real impact will be to surface transformational solutions for a better world.
- The challenges facing our customers during this period of unprecedented technological change cannot be stressed enough. There are certain aspects of this new economy that go beyond SAP’s (or any vendor’s) control. Other elements must be addressed by SAP in comprehensive fashion, including the modernization of our pricing, contracts and commercial practices. This is why customer loyalty is one of our four corporate objectives, along with growth, profitability, and employee engagement. SAP has never been more open than we are today. In addition to direct customer engagement, we aggressively pursue all constructive inputs,

including from our online SAP community, user groups and industry analysts. We will never tire of fighting for complete customer satisfaction.

### **A Few Messages in Closing**

First, to our customers around the world, we pledge our ongoing commitment to your success. We know that earning your trust requires empathy, intellectual curiosity, and above all, humility. This is a fractured world. Trust remains the ultimate human currency. We will fight like underdogs to be worthy of it. Of SAP, you have every right to expect a global market leader that understands your unique business challenges, regardless of size, industry, or geography. We recommit ourselves to be your trusted innovator, to look around corners for the next big ideas, to accept no measure of our success that does not tie directly to your own. Our customers must always win.

To the stakeholders of SAP, we believe we have delivered results worthy of our founders' legacy. Profitable growth, year after year. A transformation to the fastest-growing enterprise cloud company at scale. Promises made, promises kept. A strong foundation to achieve our bold ambitions for 2020 and beyond.

While we continue to deliver financial success, we measure ourselves on our ability to address the world's greatest challenges. We invite you to hold us accountable on all fronts: economic, societal, environmental.

The essence of a purpose-driven company is not what we achieve. It is to whom we dedicate ourselves. We dedicate SAP to improving people's lives, to lifting up new generations of innovators, to bypassing the limits of polarization in favor of a shared future.

As we close out another successful year only to embark on another, we offer our enduring gratitude for your confidence, trust, and support.

Very truly yours,

Bill McDermott  
CEO  
SAP SE

# SAP Executive Board



**Bill McDermott**  
Chief Executive Officer



**Luka Mucic**  
Chief Financial Officer



**Bernd Leukert**  
Products & Innovation



**Adaire Fox-Martin**  
Global Customer Operations EMEA & Greater China



**Jennifer Morgan**  
Global Customer Operations Americas & APJ



**Michael Kleinemeier**  
Digital Business Services



**Robert Enslin**  
President, Cloud Business Group



**Stefan Ries**  
Chief Human Resources Officer



**Christian Klein**  
Global Business Operations

# Investor Relations

## 12.8%

Increase in SAP stock in 2017

## €1.40

Recommended dividend per share

## €114.8 bn

Market capitalization at end of 2017

## Stock Markets Bullish in Difficult Environment – SAP Most Valuable Company in DAX Index

The world's stock markets on the whole performed positively in 2017, at times reaching new record levels. Despite short-term setbacks caused by the civil war in Syria, the conflict between the USA and North Korea, and key elections in Europe (Austria, France, Germany, and the Netherlands), the stock market's fundamentally positive trend held its ground. SAP stock was able to grow significantly in this climate, once again outperforming the benchmark indices: SAP shares increased 12.8%, whereas the DAX 30 rose 12.5% and the EURO STOXX 50 gained 6.7%. In terms of market capitalization, SAP remained the most valuable DAX company and currently ranks 60th worldwide.

## SAP Share Surpasses €100 Mark for First Time

After recording a new all-time high of €82.81 at the end of 2016, the SAP shares moved sideways at the beginning of 2017, more or less mirroring the movement of the DAX, and on January 4 touched its lowest point of the year at €82.43<sup>1</sup>. Publication of our strong final-quarter and full-year 2016 numbers on January 24 initially had little effect on the share price. Buoyed by friendly market sentiment in early February, however, the share price then rallied through June, gaining a clear lead over the DAX.

On February 23, we announced a 9% increase in the dividend to €1.25 per share. Though this announcement did not initially impact the share price, the increase subsequently gave the

share price a further boost, pushing SAP stock past the €90 mark for the first time to close at

€90.65 on March 16. Following the release of our favorable first-quarter 2017 results on April 25, SAP stock hit a new high, closing that day at €93.13. By May 10, the day of the Annual General Meeting of Shareholders, it stood at a record €95.04. This positive trend continued until June 2, reaching a high of €96.01 on June 22.

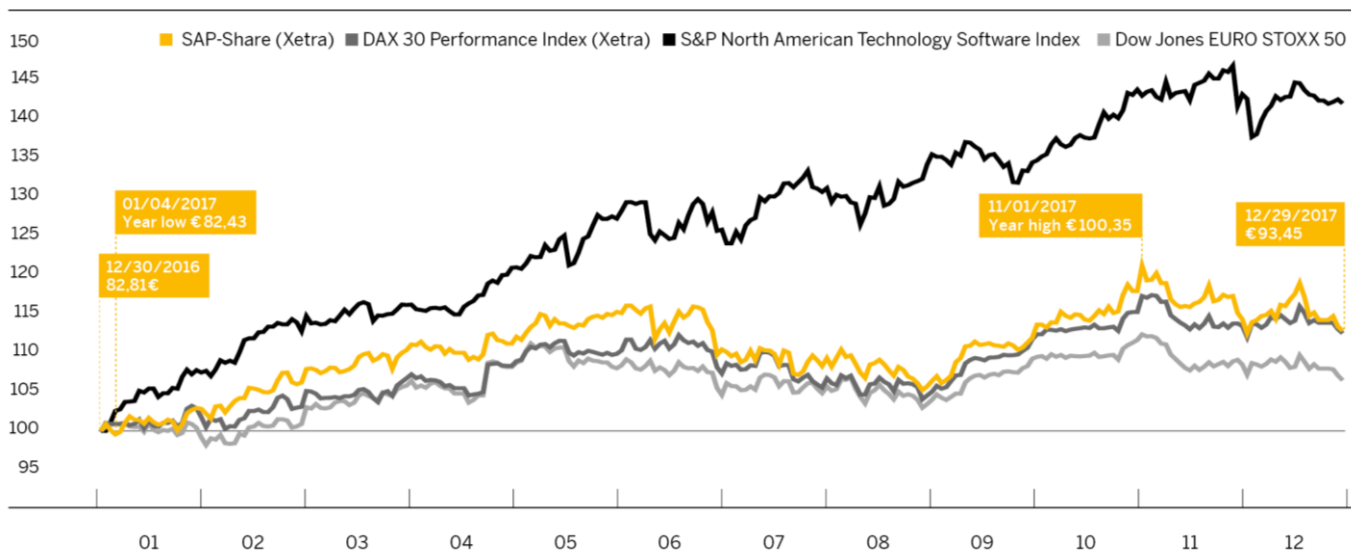
On June 27, signals pointing to a turnaround in the European Central Bank's monetary policy sent the German stock market on a prolonged downward trajectory, and the SAP share was not immune to this trend. Market uncertainty reached its peak at the end of August with the threat of escalation in the USA/North Korea conflict. Against this backdrop, not even the publication of our strong second-quarter 2017 results could spark an upswing in the share price, which ultimately fell to €87.14 on August 29. Investor confidence, however, slowly returned at the beginning of September as global political tensions eased, giving way to an upturn in the markets.

SAP's third-quarter figures, presented on October 20, were nevertheless met with initial caution from the market, and SAP stock hit a daily low of €92.27. SAP stock nevertheless rallied back to finish the day up 0.6%, closing at €95.60. The positive development spurred SAP stock all the way up to €100.35, its plateau for the year, on November 1. A combination of profit-taking, fears of the market overheating, and shifts away from technology stocks, which had increased sharply in value, to other securities caused prices to fall from the second week of November. Even the agreement on a tax reform in the USA shortly before Christmas could only trigger small quantitative effects on the markets. SAP stock nonetheless finished 2017 with a strong year-on-year gain of 12.8%, closing on December 29 at €93.45.

<sup>1</sup> Share prices given are closing price on XETRA exchange, unless otherwise stated.

## SAP Stock in Comparison to DAX 30, Dow Jones EURO STOXX 50, and S&P North American Technology Software Index December 30, 2016 (=100%) to December 29, 2017

Percent



## Providing transparency to investors

We are continuously engaged with the investment community through a number of channels. Over the course of the year, senior management at SAP and the Investor Relations (IR) team discussed our strategy and business development with institutional investors and analysts worldwide.

A particular highlight of our global IR program in 2017 was the Capital Markets Day held in New York City. At this exciting event, attended by more than 50 financial analysts and investors, the SAP Executive Board discussed the details of the strong strategic position of SAP in the market and how SAP innovations support customers' digitization. The Executive Board also discussed the future outlook of the company. Four SAP customers, Maui Jim, Microsoft, HSBC Bank, and the Birchman Group also presented how SAP innovations help them realize their digital transformation. In addition, we hosted events for buy-side analysts in Walldorf. We also held events for investors and financial analysts at the CeBIT fair in Hanover, Germany and at the SAPPHIRE NOW conference in Orlando, Florida. Furthermore, we maintained regular dialog with socially responsible investors (SRI), providing them with insights into our environmental, social, and corporate governance policies. SAP representatives spoke at various retail shareholder events. The Investor Relations team and the Treasury teams also maintained regular communication with the debt investor community.

Investors can access a wide range of information about SAP and its shares online. Our channels of communication include our

Twitter feed @sapinvestor, the quarterly SAP INVESTOR magazine, and a text message service. Shareholders can reach the IR team directly through a telephone hotline and through an e-mail at investor@sap.com. We also publish an overview of the latest analyst assessments in collaboration with Vara Research.

We webcast all key investor events at which members of our Executive Board speak, and we post all relevant presentations on the Investor Relations Web site.

## Key Facts About SAP Stock/SAP ADRs

### Listings

Germany	Berlin, Frankfurt, Stuttgart
United States (ADRs)	New York Stock Exchange

### IDs and symbols

WKN/ISIN	716460/DE0007164600
NYSE (ADRs)	803054204 (CUSIP)
Reuters	SAPG.F or .DE
Bloomberg	SAP GR

### Weight (%) in indexes at 12/31/2017

DAX 30	8.93
Prime All Share	6.47
CDAX	6.74
HDAX	6.94
Dow Jones STOXX 50	2.42
Dow Jones EURO STOXX 50	3.72



## Return on SAP Common Stock — WKN 716460/ISIN DE007164600

Percent, unless otherwise stated			
Initial investment €10,000			
Date of investment	12/31/2007	12/31/2012	12/31/2016
Period of investment	10 years	5 years	1 year
Value at 12/31/2017 <sup>1)</sup> (in €)	26,302	15,398	11,285
<b>Average annual return</b>	<b>10.2</b>	<b>9.0</b>	<b>12.8</b>
Performance comparators			
DAX 30 Performance — total return index	4.8	5.4	1.2
REX General Bond — total return index	2.0	0.4	-0.1
S&P 500 Composite — total return index	8.3	7.5	0.5
S&P North American Technology Software Index	13.2	10.6	1.8

<sup>1)</sup> Assuming all dividends were reinvested

Source: Datastream

## Return on SAP ADRs — 803054204 (CUSIP)

Percent, unless otherwise stated			
Initial investment US\$10,000			
Date of investment	12/31/2007	12/31/2012	12/31/2016
Period of investment	10 years	5 years	1 year
Value at 12/31/2017 <sup>1)</sup> (in US\$)	22,010	13,979	13,000
<b>Average annual return</b>	<b>8.2</b>	<b>6.9</b>	<b>30.0</b>
Performance comparators			
S&P 500 Composite — total return index	6.2	6.5	1.8

<sup>1)</sup> Assuming all dividends were reinvested

Source: Datastream

## Dividend Policy Increased to 40%

With strong growth and positive cash flow in 2017, we had a very successful year as customers continue to trust SAP to support their digital transformations. We want our shareholders to share greatly in this success, therefore we are increasing our dividend policy to pay a dividend totaling 40% or more of profit after tax in the future.

At the Annual General Meeting of Shareholders, the Executive Board and the Supervisory Board will recommend increasing the total dividend for fiscal year 2017 by 12% to €1.40 per share (2016: €1.25)

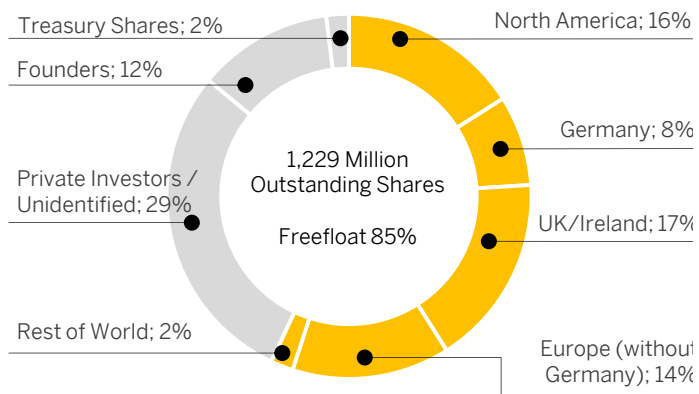
## Capital stock unchanged

SAP's capital stock as of December 31, 2017, was €1,228,504,232 (2016: €1,228,504,232). It is issued as 1,228,504,232 no-par shares, each with an attribute value of €1 in relation to capital stock.

## Shareholder structure

Applying the definition accepted on the Frankfurt Stock Exchange, which excludes treasury stock from the free float, as of December 31, 2017, the free float stood at 85.2% (December 31, 2016: 78.8%).

## Shareholder Structure



\*11% of institutional investors (marked yellow) are classified as socially responsible investors (SRIs)

# Corporate Governance Report

We are a global company with an international shareholder base, so we need sound governance. Good corporate governance means managing the Company accountably and transparently to secure long-term value. We believe our shareholders, business partners, employees, and the financial markets reward good corporate governance with the increased trust they place in our Company.

## Corporate Governance Principles at SAP

SAP is an international firm with European roots, having the legal form of a European company (Societas Europaea, or SE). Being an SE headquartered in Germany, we are now subject to European and German law for SEs while remaining subject to German stock corporation law. Major characteristics of our governance structure remain in place since the conversion, notably our two-tier board comprising a Supervisory Board and an Executive Board, and parity for workforce representatives on the Supervisory Board. Because SAP SE is listed on a German stock exchange, our corporate governance is still based on the German Corporate Governance Code (the “Code” in this report).

Since SAP is also listed in the United States, we comply with the rules that apply to non-U.S. companies listed on the New York Stock Exchange (NYSE). These include the requirements, as they apply to foreign private issuers, of the NYSE Corporate Governance Standards, the U.S. Sarbanes-Oxley Act of 2002, and the U.S. Securities and Exchange Commission (SEC).

## Section 161 Declaration

Every year, as required by the German Stock Corporation Act, Section 161, the Executive Board and Supervisory Board issue a [Section 161 Declaration](#) stating whether SAP has implemented and is following the Code’s recommendations, and identifying any recommendations that the Company has not followed – with a full explanation of why it has not done so. Our latest Section 161 Declaration, published on October 27, 2017, is on the SAP Web site along with our declarations from previous years and links to the current and previous editions of the Code. As our 2017 declaration shows, we currently follow all but two (previous year: five) of the 115 recommendations and all of the suggestions in the current Code.

## Corporate Governance Statement

On February 20, 2018, the Executive Board published a [Corporate Governance Statement](#) for 2017 pursuant to Sections 315d and 289f of the German Commercial Code. The statement is on the SAP Web site. It comprises the current declaration pursuant to the German Stock Corporation Act, Section 161, certain details of our corporate governance practices, and an account of how the Executive Board and the Supervisory Board work, who serves on which Supervisory Board committees, and how those committees work. It also sets out the targets for the percentage of women on the Executive Board and the two management levels below Executive Board level, as well as information on the implementation of the minimum quota of men and women on the Supervisory Board, and details about the Diversity Policy of SAP SE.

## Executive Board

The Executive Board currently has nine members. It is solely responsible for managing the Company. It has a duty to exercise its management powers in the interest of the Company and in pursuit of the sustained growth of corporate value. It discusses and agrees its strategy for the Company with the Supervisory Board, ensures compliance with the requirements of the law throughout the Group, and maintains effective risk management structures and internal risk controls. The members of the Executive Board are appointed by the Supervisory Board which set a regular age limit of 65 years for the Executive Board. Information about each Executive Board member’s portfolio of responsibilities is available on the SAP Web site.

## Supervisory Board

The size and composition of the Supervisory Board are governed not by the German Codetermination Act (which does not apply, because we are a European company) but by the Articles of Incorporation and the SAP SE Employee Involvement Agreement. Both documents are available on the SAP Web site.

The Supervisory Board has 18 members who, in equal numbers, represent the shareholders and the employees. It appoints, monitors, and advises the Executive Board. The Executive Board involves the Supervisory Board in decisions on matters of fundamental importance for the Company. The Supervisory Board has reserved to itself the approval of certain transactions of fundamental importance, as set out in the Articles of Incorporation and detailed in the Supervisory Board’s list of

reserved categories of transactions. The Executive Board regularly provides the Supervisory Board with full and timely reports on all material matters of strategy, business planning, and performance, including any deviations of actual business performance from plan, risks, risk management, and corporate compliance. We provide our shareholders with in-depth information about how the Executive Board and the Supervisory Board work, how the committees are composed, and how these committees work, in our corporate governance statement. For more information about the joint work of the Executive Board and the Supervisory Board and about the work of the Supervisory Board and its committees in 2017, see the [Report by the Supervisory Board](#).

## Composition of the Supervisory Board

The Supervisory Board members as a group possess the knowledge, ability, and expert experience required to properly perform its duties in our global IT company. At least one independent member has financial reporting and auditing expertise. The Supervisory Board has defined the following objectives for its own composition:

- There should never be fewer than three persons of non-German origin on the shareholder representatives' side of the Supervisory Board.
- No employee, consultant, or director of a significant SAP competitor should be a Supervisory Board member.
- At least five shareholder representatives on the Supervisory Board, and at least ten members of the entire Supervisory Board, should be independent members in the meaning of Section 5.4.2 of the Code; the Supervisory Board considers these numbers as appropriate.
- No member of the Supervisory Board should be older than 75 years.
- The duration of membership in the Supervisory Board is generally limited to a maximum of three terms of office of at least four full years each.

In addition to these objectives, the Supervisory Board adopted a [Profile of Skills and Expertise](#) for the Supervisory Board which comprises general personal requirements applicable to each Supervisory Board member, as well as company-specific and professional requirements which must be fulfilled by the Supervisory Board as a whole. This means that the company-specific and professional requirements stated in the Profile of Skills and Expertise do not have to be met by each member of the Supervisory Board individually, but that it is sufficient if the knowledge, skills, and professional experience contributed by each of the Supervisory Board members combine to cover the totality of the company-specific and professional requirements stated in the Profile of Skills and Expertise. Proposals by the Supervisory Board to the General Meeting of Shareholders for

the election of shareholders' representatives to the Supervisory Board shall aim at fulfilling the Profile of Skills and Expertise. The Profile of Skills and Expertise for the Supervisory Board is available on the SAP Web site.

The Supervisory Board believes that the current composition of the Supervisory Board fulfills all of these objectives and the requirements contained in the Profile of Skills and Expertise. There is information about each member, the committees, and who serves on which committee, on the SAP Web site.

## Independence of the Supervisory Board

SAP believes that a sufficient degree of independence of its Supervisory Board members is essential for effective and responsible corporate management and control. The Supervisory Board has a defined objective for its composition regarding the minimum number of independent members on the shareholder representative side, as recommended in the Code, Section 5.4.1, paragraph 2. The objective is five such members. At its meeting on October 12, 2017, the Supervisory Board determined that all of its shareholder representative members (that is, Hasso Plattner, Pekka Ala-Pietilä, Aicha Evans, Anja Feldmann, Wilhelm Haarmann, Gesche Joost, Bernard Liautaud, Erhard Schipporeit and Klaus Wucherer) are independent in the meaning of the Code, Section 5.4.2, based on the assumption that the duration of membership in the Supervisory Board does not *per se* exclude the relevant member from being considered as independent.

Furthermore, the Supervisory Board determined that, including the employee representatives and taking into account the shareholder structure of SAP SE, it has an appropriate number of independent members in the meaning of the Code, Section 5.4.2. This was based on the assumption that the employee representatives' capacity as employees does not *per se* raise any concerns as to their independence in the meaning of the Code, Section 5.4.2.

The Audit Committee is chaired by Erhard Schipporeit, who for many years was the chief financial officer of a DAX company that is also listed on a U.S. stock exchange and therefore qualifies as an independent financial expert in the meaning of the Code, Section 5.3.2, and the German Stock Corporation Act, Section 100 (5).

## Diversity in the Company

The Supervisory Board of SAP SE, which currently includes five women, meets the mandatory gender quota of 30%. The Supervisory Board also aims for diversity with regard to the composition of the Executive Board, which currently has two female members.

In accordance with the requirements of Section 289f para. (2) no. 6 of the German Commercial Code, the Supervisory Board adopted a *Diversity Policy* for the Executive Board and the Supervisory Board. The Diversity Policy as well as information on the targets for the numbers of women on the Executive Board and the first two management levels below the Executive Board are described in the *Corporate Governance Statement* which is available on the SAP SE Web site.

Generally, the Executive Board follows the recommendation in the Code that executive boards should have regard to diversity when appointing people to leadership positions, and in particular, aim to employ appropriate numbers of women in such positions. In support of this, the Executive Board maintains a policy to enhance diversity in company leadership appointments. This policy comprises a number of elements to increase the percentage of women in management and, in the long term, establish a diverse pool of female and male candidates for senior management positions. In addition, SAP had set itself a voluntary target of increasing the percentage of positions in leadership on a global level held by women to 25% by the end of 2017, which was successfully achieved. The percentage of women in management stood at 25.4% globally at the end of 2017. From 2018 onwards, SAP voluntarily seeks to further increase this percentage by one percentage point annually to reach 28% by the end of 2020. It goes without saying that ability is still the primary selection criterion for any position at SAP.

## Code of Business Conduct

SAP's corporate governance includes our Code of Business Conduct for employees and members of the Executive Board. The Code of Business Conduct expresses the high standards that we require from our employees and Executive Board members and sets out the main principles that guide our business conduct toward customers, business partners, and shareholders. We see our Code of Business Conduct as the standard for our dealings involving customers, business partners, vendors, shareholders, and competitors. By following our Code of Business Conduct, we demonstrate a commitment against all forms of unfair competitive practice, corruption, and misrepresentation. Our global compliance organization monitors worldwide compliance with the Code of Business Conduct and other policies applying within the Group. It regularly reviews these internal policies, revises them if necessary, and delivers related employee training.

## Applying International Corporate Governance Standards

SAP is a NYSE-listed company and we are therefore subject to certain U.S. laws (including the Sarbanes-Oxley Act of 2002,

among others) and to the applicable SEC and NYSE regulations. Besides implementing the requirements of the Sarbanes-Oxley Act, Section 404, and other Sarbanes-Oxley Act requirements, including conducting an annual audit of our internal control over financial reporting, we comply with the corporate governance standards of the NYSE Listed Company Manual, Section 303A, which bind foreign private issuers. The Section 303A standards that apply to SAP include the requirement to have an audit committee composed of members who are independent in the meaning of the Sarbanes-Oxley Act, and related reporting requirements. Erhard Schipporeit, the chairperson of the Audit Committee, is an audit committee financial expert in the meaning of the Sarbanes-Oxley Act.

## Annual General Meeting of Shareholders

Our shareholders exercise their rights, such as the rights to put questions to the management and to vote, at the Annual General Meeting of Shareholders. Shareholders and the public are able to watch a live broadcast of the entire Annual General Meeting of Shareholders on the Internet. They can vote their shares at the Meeting or instruct a proxy of their choice or one of the proxies provided for that purpose by SAP. Alternatively, they can participate online or vote by mail. The invitation to the Annual General Meeting of Shareholders includes full details and instructions. Every shareholder can access all of the paperwork on the SAP Web site in good time for the meeting.

## Transparency, Communication, and Service for Shareholders

Our shareholders can obtain full and timely information about SAP on our Web site and can access current and historical Company data. Among other information, we post all of our financial reports, all relevant news about the Company's governing bodies and their corporate governance documentation, information requiring ad hoc (current) disclosure, press releases, and news of notifiable directors' dealings.

## Financial Accounting, Risk Management, and Internal Control

We prepare the SAP SE financial statements in accordance with the German Commercial Code and our consolidated financial statements in accordance with International Financial Reporting Standards (IFRSs). We prepare a combined management report and a separate combined non-financial report for SAP SE and the SAP Group as required by the German Commercial Code, and the Form 20-F annual report in accordance with SEC requirements. The Executive Board is responsible for financial accounting. The Supervisory Board approves the SAP SE

financial statements, the consolidated financial statements, as well as the combined management report and the separate combined non-financial report. The SAP SE financial statements, the consolidated financial statements, and the combined management report are audited by KPMG AG Wirtschaftsprüfungsgesellschaft, the auditor elected for that purpose by the Annual General Meeting of Shareholders.

In addition to our annual financial statements, we also prepare quarterly statements for all four quarters in accordance with the rules and regulations of the Frankfurt Stock Exchange, as well as a half-year financial report on June 30 pursuant to the legal requirements of the German Securities Trading Act. Our quarterly statements and half-year financial report are submitted to the Audit Committee of the Supervisory Board before they are published.

In German stock corporation and commercial law, there are special requirements for internal risk management that apply to SAP. To meet them, our global risk management system supports risk planning, identification, analysis, handling, and minimization. We maintain standard documentation of all our internal control structures, especially those that affect financial reporting, and continually evaluate their effectiveness. As a company listed on the NYSE, we instruct our auditor, KPMG, to conduct an annual audit of our internal control over financial reporting in accordance with the requirements of the U.S. Sarbanes-Oxley Act of 2002, Section 404. The audit as of December 31, 2017, confirmed that our internal control is effective. In compliance with the reporting requirements in the German Commercial Code, Sections 289 (4) and 315 (4), the combined SAP SE and SAP Group management report contains full information about the principal features of the internal controls and risk management structure applying to SAP's consolidated financial reporting.

# Report by the Supervisory Board

## Dear Shareholders,

In the following, I would like to inform you about the work of the Supervisory Board in the past fiscal year.

## Collaboration Between the Supervisory Board and the Executive Board

In 2017, the Supervisory Board advised the Executive Board on an ongoing basis with regard to the management of the Company and kept the Executive Board's global management of the Company under observation and scrutiny for legal compliance, adherence to proper accounting principles, business focus, and efficiency. At meetings of the full Supervisory Board and of the Technology and Strategy Committee, we regularly discussed the Company's strategy with the Executive Board and the Company's progress toward executing it. We were always directly involved when the Executive Board made any decisions of fundamental importance to SAP.

We regularly received full and timely reports from the Executive Board, both from members in person and in written documents. They always kept us up to date on the Company's strategy, planning, business performance, risks, risk management, compliance (in other words, adherence to laws, to the Company's Articles of Incorporation, and to internal policies), and on transactions of special significance for SAP. The Executive Board advised us when business deviated from plan or target, and why. In addition, the Supervisory Board members can use the SAP Digital Boardroom solution to stay abreast of Company's performance whenever they wish, not just in their meetings. This digital decision and analysis cockpit is an analytical software solution that allows us to call up comprehensive metrics for all business areas in real time and generate evaluations and analyses as required. This provides the Supervisory Board members with an up-to-date view of SAP's business processes, data, and key figures – and unprecedented transparency.

The content and scope of the Executive Board's reports to us fully met our requirements for them, and the questions raised by the Supervisory Board before and during the meetings were answered in detail. In addition, the Executive Board came to Supervisory Board meetings for discussion of the agenda items. We questioned and probed the Executive Board to satisfy ourselves that the information it gave us was plausible. All transactions requiring approval by the Supervisory Board whether by law, the Articles of Incorporation, or the Supervisory Board's list of transactions requiring its consent were carefully examined and discussed with the Executive Board, focusing on the benefits, potential risks, and other effects of each transaction. The Supervisory Board agreed to all transactions for which its consent was sought by the Executive Board.

The CEO informed the Supervisory Board chairperson without delay of all important events that were significant for assessing SAP's position and progress or for the management and governance of the Company. Moreover, the chairperson of the Supervisory Board met regularly with the CEO to discuss SAP's strategy, planning, business performance, risks, risk management, compliance, and other key topics and decisions. In this way, the chairperson of the Supervisory Board was also kept fully informed between meetings of the Supervisory Board and its committees.

## Supervisory Board Meetings and Resolutions

In 2017, the Supervisory Board of SAP SE held four ordinary meetings and one extraordinary meeting at which we deliberated and resolved on all matters of relevance to the Company. We also adopted seven resolutions by correspondence vote. No Supervisory Board member attended only half or less of the meetings of the Supervisory Board and of the committees to which the member belonged in the fiscal year. The following table provides an overview of the individual members' attendance at the Supervisory Board's plenary sessions and committee meetings in 2017:

## Meeting Participation of SAP Supervisory Board Members during Fiscal Year 2017

Supervisory Board Members	Meetings (incl. Committees)	Meetings (Plenum)	Participation (Plenum)	Meetings (Committees)	Participation (Committees)	Participation in % (all Meetings)
Prof. Dr. h.c. Hasso Plattner	17	5	5	12	10	88%
Pekka Ala-Pietila	18	5	4	13	9	72%
Panagiotis Bissiritsas	23	5	5	18	18	100%
Martin Duffek	14	5	5	9	9	100%
Aicha Evans	5	3	3	2	2	100%
Anja Feldmann	11	5	5	6	6	100%
Prof. Dr. Wilhelm Haarmann	19	5	5	14	14	100%
Andreas Hahn	14	5	5	9	9	100%
Prof. Dr. Gesche Joost	11	5	5	6	6	100%
Margret Klein-Magar	19	5	5	14	14	100%
Lars Lamadé	12	5	5	7	7	100%
Bernard Liautaud	15	5	4	10	10	93%
Christine Regitz	11	5	5	6	6	100%
Dr. Erhard Schipporeit	14	5	5	9	9	100%
Robert Schuschnig-Fowler	10	5	5	5	5	100%
Dr. Sebastian Sick	18	5	5	13	13	100%
Jim Hagemann Snabe	8	2	2	6	6	100%
Pierre Thiollet	9	5	5	4	4	100%
Prof. Dr. Klaus Wucherer	11	5	5	6	5	91%

The Supervisory Board and its committees also convened wholly or partly without the Executive Board as necessary to deliberate on items that pertained to the Executive Board or required internal discussion among Supervisory Board members alone. On this basis, the Executive Board withdrew temporarily from three of the plenary sessions. In addition, the shareholder representatives and the employee representatives independently discussed individual agenda items as required prior to the adoption of resolutions in plenary sessions. The Supervisory Board addressed the following key topics during the year:

### Expansion of the Executive Board, Restructuring of Executive Board Responsibilities, and Compensation Topics

The Supervisory Board dealt at several meetings with personnel changes on the Executive Board. In the spring of 2017, Steve Singh, the Executive Board member responsible for the SAP Business Networks & Applications portfolio, decided to leave SAP and become an independent entrepreneur again. We took his departure as an occasion to restructure the responsibilities

of the Executive Board members jointly with the Executive Board, for implementation at our meeting on April 13, 2017. The new portfolio structure largely reflects an increased focus on the cloud business as well as the changing requirements of SAP's business processes. As part of this restructuring, the Executive Board member Robert Enslin took over the lead of the SAP Business Networks segment, and is now also responsible for the development and delivery of our customer engagement and commerce solutions as well as our human capital management solutions. Further, Adaire Fox-Martin and Jennifer Morgan were appointed to the Executive Board effective May 1, 2017, assuming joint responsibility for Global Customer Operations, SAP's global sales organization. In the course of appointing the new members to the Executive Board, we increased the target for the number of Executive Board seats to be held by women to two. At our October meeting, we appointed Christian Klein to the Executive Board effective January 1, 2018, thus expanding the Executive Board to nine members. Mr. Klein's appointment as Chief Operating Officer (COO) means that SAP's global business processes and digital transformation will henceforth be managed at Executive Board level as part of the new "Global Business Operations" portfolio. This measure underlines the significance of the Run Simple initiative, our internal efforts for simplifying internal processes and reducing



complexity. We also extended the Executive Board appointment contract of Michael Kleinemeier, the Board member responsible for SAP Digital Business Services, SAP's global services and support organization, to December 31, 2019.

At our ordinary Supervisory Board meeting on February 22, 2017, we discussed Executive Board compensation. Exercising our discretionary powers under the terms of the short-term incentive (STI) 2016, we first determined performance against the defined target for the STI. We then decided on the total target achievement and the payouts for the individual Executive Board members under the STI 2016. When we met in February, we also deliberated on Executive Board compensation for 2017. The Supervisory Board identified the key performance indicators (KPIs), set the target numbers for each KPI in the STI 2017 and their relative weightings, and defined the criteria for assessing the discretionary KPI. Finally, we resolved the individual allocation amounts for the 2017 tranche of the Long-Term Incentive (LTI) Plan 2016, and the basis of the allocation of the 2018 tranche. The Supervisory Board, as required, evaluated the appropriateness of the Executive Board member's compensation, and in each case found it to be appropriate in terms of amount, structure, objective criteria, and for each member's responsibilities and tasks. We had regard to an appropriateness certificate from Ernst & Young issued in December 2016. For more information about the LTI Plan 2016 and the other elements of the compensation package for Executive Board members, see the [Compensation Report](#). The Supervisory Board further resolved to take more account of the Company's strategic cloud business when determining Executive Board compensation. In our July 13, 2017, meeting, we therefore added "sustainability of cloud revenues" as a discretionary KPI. Finally, we adopted by way of correspondence vote in December 2017 two changes to the Executive Board appointment contracts. In compliance with the recommendations in the German Corporate Governance Code (the "Code"), we incorporated into the contracts a Code-compliant severance cap limiting severance to two times annual compensation, as well as a clawback provision for payouts under the STI and LTI. Under such provision, SAP can claim restitution for payments made from STI or LTI if it subsequently emerges that the payment was not justified in whole or in part because targets were not achieved at all or not achieved in the scope assumed when calculating the payment amount. In such case, the Executive Board member is obliged to repay to SAP the amount by which the payment actually made exceeds the payment amount due on the basis of the targets actually achieved.

HR and compensation topics were extensively prepared by the General and Compensation Committee and subsequently discussed and adopted by the full Supervisory Board.

## Transparency and Corporate Governance Strategy

We analyzed in depth the reasons behind the slim shareholder approval rates for the Executive Board compensation system ("Say on Pay") at the 2016 Annual General Meeting of Shareholders and for the acts of the Supervisory Board at the 2017 Annual General Meeting of Shareholders. In addition, SAP had scored in our view poorly on a corporate governance ranking of DAX-listed companies that was published at the end of January 2017. The Supervisory Board took the criticism expressed in this manner very seriously and implemented a number of measures in response.

- For example, we published on SAP's Web site an overview of the individual Supervisory Board members' attendance at meetings, in order to offer shareholders even more transparency in this regard. This overview is also available henceforth in our report.
- In addition, the appointment of Aicha Evans as a new Supervisory Board member increased the number of women on our Supervisory Board, thus fulfilling the statutory quota for women.
- At its July meeting, the Supervisory Board agreed with a proposal by the General and Compensation Committee that the Supervisory Board chairperson, in accordance with a new recommendation in the Code, meet with investors to discuss Supervisory Board-related matters. These meetings took place in Walldorf, New York, and by telephone conference in the run-up to our October meeting, and gave us valuable insight into our investors' views on the Company's corporate governance and Executive Board compensation.
- As such, we consequently reduced the number of deviations SAP had declared to the Code from five to two: At our ordinary meeting in October, we set a standard age limit for Executive Board members, limited tenure on the Supervisory Board, and resolved to follow, in future, the Code's recommendation to take the objectives we adopted for our own composition into account when proposing candidates for election to the Supervisory Board by the Annual General Meeting.
- In addition, the correspondence vote in December 2017 enabled us to take steps to cease our deviation from the Code regarding a severance payment cap in Executive Board appointment contracts, which steps we implemented accordingly at the beginning of 2018. We further decided to address in 2018 the prerequisites for an individual deductible for Supervisory Board members in their directors' and officers' (D&O) liability insurance, in order to settle the remaining deviation from the Code in our current declaration.
- In the interest of greater transparency, the Supervisory Board also took steps to make the compensation report easier to read and understand.

We also discussed corporate governance matters when we met in October, adopting both a Profile of Skills and Expertise for the Supervisory Board and a Diversity Policy for the Executive Board and Supervisory Board. *The Profile of Skills and Expertise* for the Supervisory Board is published on SAP's Web site. The Code also recommends that the Supervisory Board assess the independence of its members at regular intervals. We did this at our October meeting, using benchmarks we had set at our own discretion. We ascertained that the Supervisory Board has a sufficient number of independent members, set targets for the minimum number of independent Supervisory Board members as a whole and for the minimum number of independent shareholder representatives. In accordance with the Code provisions, we also identified those shareholder representatives whom the Supervisory Board deems independent; these representatives are named in the Corporate Governance Report.

Other matters addressed at our meetings in 2017 included:

## Meeting in February (Meeting to Discuss the Financial Statements)

At our ordinary meeting on February 22, 2017, we discussed with the Executive Board the aforementioned compensation topics as well as the results of the 2016 employee survey. In addition, the Supervisory Board turned its attention to the SAP SE financial statements and the consolidated financial statements for 2016, the audits conducted by KPMG AG Wirtschaftsprüfungsgesellschaft (KPMG), and the Executive Board's proposed resolution on the appropriation of retained earnings for 2016. The Audit Committee comprehensively prepared all topics in connection with the financial statements and the consolidated financial statements for 2016, and in particular reported on the form and scope of its examination of the documents relating to the financial statements, which it recommended we approve. The auditor attended the meeting and reported in detail on the audit and its findings for each of the focus areas that had been agreed between the auditor and the Audit Committee. The auditor also related the discussions on those matters at the preceding meetings of the Audit Committee. The auditor then discussed the results of the audit with the Supervisory Board and answered our questions. The Supervisory Board approved the audit. There were no findings from our own examination, so we gave our consent to the SAP SE and consolidated financial statements for 2016. We checked and endorsed the Executive Board's proposal to appropriate retained earnings in accordance with the Audit Committee's recommendation. We then discussed in detail the annual budget for 2017 as presented to us by the Executive Board, and approved same. In addition, we adopted the agenda for the May 2017 Annual General Meeting of Shareholders as well as our recommendation to the Annual General Meeting of Shareholders concerning the auditor to elect for 2017, which

followed the recommendation of the Audit Committee to us. We were also informed about SAP's donation activities. The Executive Board then gave us an overview of the business successes achieved in 2016 and presented information on SAP's revenue growth in the individual business areas, regions, and product fields as well as on SAP's competitive position.

## Meeting in April

A Morgan Stanley analyst joined our plenary session on April 13, 2017, to share an outside view of SAP from the investors' and analysts' standpoint. His presentation provided us with very interesting and valuable insight. We then adopted the resolutions to expand and restructure the Executive Board, as described earlier in this report. In addition, the Executive Board gave us an overview of how SAP's interests are represented politically in Germany and abroad, and of the products SAP offers for the public sector. It also explained how the Company aims to help governments and states worldwide in their digital transformation.

## Meeting in July

At our meeting on July 13, 2017, we discussed the directors' and officers' (D&O) group liability insurance policies that we take out from year to year. We regularly reviewed and updated the list of transactions for which the Executive Board must obtain the Supervisory Board's consent. The Executive Board then gave us an account of business and presented the preliminary second-quarter results, reporting at our request particularly on revenue development in the various regions, and on SAP's competitive position in its core business and in the cloud. The COO updated us on the successes of our Run Simple initiative and explained the next steps the Company had lined up to simplify SAP solutions and internal processes even further.

## Extraordinary Meeting in September

At our September meeting, we focused on the acquisition of Gigya, Inc., a U.S.-based company that offers a leading solution for customer data identification and profiling in the customer identity and access management (CIAM) space. The Executive Board informed us in detail about the benefits of the proposed acquisition. The proposed acquisition is a strategically expedient addition to SAP's existing portfolio of customer relationship management (CRM) solutions. In addition, the Executive Board explained in detail its justification of the negotiated purchase price, and in this context also presented the fairness opinion (that is, an independent expert opinion) from Ernst & Young GmbH which confirmed the purchase price was appropriate. It also apprised us of the opportunities the acquisition brought and the risks it entailed according to due diligence checks. Next, the Finance and Investment Committee reported that it had met before our meeting to examine and discuss in depth the issues and documents relating to the

acquisition, particularly the due diligence reports. The Committee recommended that we consent to the acquisition of Gigya. After discussing the matter thoroughly, the Supervisory Board authorized the Executive Board to conclude the acquisition.

## Meeting in October

At our meeting in October, the Executive Board reported on business performance and on developments in the cloud platform segment and in SAP S/4HANA software. It also informed us about its acquisitions strategy and improvements to its processes for integrating acquired companies. We extended the list of transactions requiring our consent and, in agreement with the Executive Board, adopted, for regular publication in October 2017, the annual declaration of implementation of the Code. Next, we turned our attention to two current compliance matters: members of SAP's compliance department updated us on the internal investigations regarding potential violations of the U.S. Foreign Corrupt Practices Act (FCPA) in South Africa, as well as on the ongoing internal investigation in the Gulf region regarding potential export law violations. They also reported on the measures SAP had launched in respect of these matters and its communications with the relevant authorities.

## The Work of the Supervisory Board Committees

The committees made a key contribution to the work of the Supervisory Board and reported on their work to us, including their preparatory work for and decisions made on the relevant agenda items of the full Supervisory Board. The following committees were in place in 2017, initially composed as follows:

- **General and Compensation Committee:** Hasso Plattner (chairperson), Wilhelm Haarmann, Andreas Hahn, Margret Klein-Magar, Lars Lamade, Bernard Liautaud, Sebastian Sick, Jim Hagemann Snabe
- **Audit Committee:** Erhard Schipporeit (chairperson), Panagiotis Bissiritsas, Martin Duffek, Klaus Wucherer
- **Finance and Investment Committee:** Wilhelm Haarmann (chairperson), Pekka Ala-Pietilä, Panagiotis Bissiritsas, Margret Klein-Magar, Sebastian Sick, Jim Hagemann Snabe
- **Technology and Strategy Committee:** Hasso Plattner (chairperson), Christine Regitz (deputy chairperson), Pekka Ala-Pietilä, Panagiotis Bissiritsas, Anja Feldmann, Andreas Hahn, Gesche Joost, Margret Klein-Magar, Bernard Liautaud, Pierre Thiollet
- **People and Organization Committee:** Hasso Plattner (chairperson), Martin Duffek, Anja Feldmann, Wilhelm Haarmann, Gesche Joost, Lars Lamade, Christine Regitz, Robert Schuschnig-Fowler
- **Nomination Committee:** Hasso Plattner (chairperson), Pekka Ala-Pietilä, Bernard Liautaud

- **Special Committee:** Hasso Plattner (chairperson), Pekka Ala-Pietilä, Wilhelm Haarmann, Lars Lamade, Erhard Schipporeit, Sebastian Sick

Following the resignation of Jim Hagemann Snabe from the Supervisory Board and the court appointment of Aicha Evans to the Supervisory Board, the composition of the committees changed effective July 1, 2017, as follows:

- **General and Compensation Committee:** Hasso Plattner (chairperson), Aicha Evans, Wilhelm Haarmann, Andreas Hahn, Margret Klein-Magar, Lars Lamade, Bernard Liautaud, Sebastian Sick
- **Audit Committee:** Erhard Schipporeit (chairperson), Panagiotis Bissiritsas, Martin Duffek, Klaus Wucherer
- **Finance and Investment Committee:** Wilhelm Haarmann (chairperson), Pekka Ala-Pietilä, Panagiotis Bissiritsas, Erhard Schipporeit, Robert Schuschnig-Fowler, Sebastian Sick
- **Technology and Strategy Committee:** Hasso Plattner (chairperson), Christine Regitz (deputy chairperson), Pekka Ala-Pietilä, Panagiotis Bissiritsas, Martin Duffek, Aicha Evans, Anja Feldmann, Andreas Hahn, Gesche Joost, Margret Klein-Magar, Bernard Liautaud, Pierre Thiollet
- **People and Organization Committee:** Hasso Plattner (chairperson), Martin Duffek, Anja Feldmann, Wilhelm Haarmann, Gesche Joost, Lars Lamade, Christine Regitz, Robert Schuschnig-Fowler
- **Nomination Committee:** Hasso Plattner (chairperson), Pekka Ala-Pietilä, Bernard Liautaud
- **Special Committee:** Hasso Plattner (chairperson), Pekka Ala-Pietilä, Wilhelm Haarmann, Lars Lamade, Erhard Schipporeit, Sebastian Sick

Each of the committees was active in 2017 except the Special Committee.

For more information about the Supervisory Board committees and their duties, see SAP's corporate governance statement pursuant to the German Commercial Code, sections 315d and 289f, published on the SAP public Web site at [www.sap.de/investor](http://www.sap.de/investor).

In 2017, the committees focused primarily on the following topics:

- The **General and Compensation Committee** held five meetings. During its meetings, it extensively discussed, prepared, and recommended the Supervisory Board's resolutions, notably those on Executive Board compensation and HR decisions described above. Besides this, it engaged in improving the selection of agenda topics and the efficacy of plenary sessions. It also focused on the following matters: At its first meeting in February, the Committee deliberated on the report compiled by the Company's corporate governance and insider trading compliance officer. At its second meeting

in February, the Committee and the Executive Board analyzed the corporate governance ranking of DAX-listed companies that was published at the beginning of the year. At its meeting in April, the Committee prepared the Supervisory Board's resolution to set a new target for the percentage of women on the Executive Board, which had become necessary in the course of appointing the new Executive Board members. At its July meeting, the Committee prepared a Profile of Skills and Expertise for the Supervisory Board and a Diversity Policy for the Executive Board and Supervisory Board. The Supervisory Board's decisions with respect to the submission of the declaration of implementation of the Code and ascertaining the independence of Supervisory Board members were prepared in October. The Committee also discussed the succession planning concept for the Executive Board throughout the year. In addition, the Committee approved the acceptance of outside supervisory board seats by Executive Board members in three cases.

- The **Audit Committee** held six physical meetings – two of which were jointly held with the Finance and Investment Committee – and four telephone conference meetings in 2017. It also adopted one resolution by correspondence vote. The telephone conference meetings were all ahead of the publication of quarterly financial reports for each quarter. At these meetings, the Committee primarily deliberated on the course of business over the quarter concerned, the process by which the quarterly financial reports were prepared, the quarterly reports to be published, and insights gained from the auditor's quarterly review of selected revenue-generating software agreements. The physical meeting in February concentrated on the SAP SE and consolidated financial reports for 2016 and the reporting process, the internal control structure for financial reporting, the most important accounting methods, and the audit. At the February meeting, the Committee also discussed the German Financial Reporting Enforcement Panel's criteria for 2017, the internal audit service's report for the previous year, organization and processes, and audit plan for 2017. Also at this meeting, the Committee did preparatory work on the Supervisory Board's recommendations to the Annual General Meeting of Shareholders concerning the election of an auditor and the appropriation of retained earnings. The April meeting focused inter alia on SAP's compliance system and changes to the IFRS reporting standards relevant for fiscal years 2017 and 2018, such as the new standard for revenue recognition (IFRS 15). When it met in July, the Committee discussed the audit focus with the auditor, dealt with the internal audit service's work in the first half of the year and audit planning for the second half-year, and reviewed the Company's risk management system and internal controls. In addition, it inquired about the auditor's fees as well as the new reporting requirements under the European directive on Corporate Social Responsibility (CSR) and the law implementing the

directive at national level, which obliges listed companies to focus more on significant non-financial aspects of their business activities in a non-financial declaration in the future. At its October meeting, the Committee discussed the report from the chief compliance officer and came to the conclusion that the compliance system was effective. In this connection, the Executive Board gave us a detailed update on the internal investigations regarding potential FCPA violations in South Africa and on the ongoing internal investigation regarding potential export law violations in the Gulf region. The Audit Committee also discussed the audit fees at this meeting. As reported in more detail below, the Committee also held two joint meetings with the Finance and Investment Committee in February and December. In addition to discussing the Group annual plan for 2018, the Committee received an update on the aforementioned compliance matters at the December meeting.

The auditor attended all physical meetings and telephone conference meetings of the Audit Committee and reported in depth on its audit work and on its quarterly reviews of selected software agreements.

- The **Finance and Investment Committee** held eight physical meetings in 2017. Of these, one was a joint meeting with the Technology and Strategy Committee and two were joint meetings with the Audit Committee. It also adopted one resolution by correspondence vote. At the joint meeting with the Audit Committee in February, members discussed and approved the Group annual plan for 2017. In the Finance and Investment Committee meeting that followed, representatives from Sapphire Ventures presented detailed information about the European and U.S. market for venture capital in technology and a status report on the three active SAP venture capital funds. The Committee also discussed the annual report on SAP's acquisitions in the February meeting. In April, the Executive Board informed the Committee among other things about current acquisition plans, and reported on important aspects of SAP's corporate financial profile, such as the credit rating, credit profile, and liquidity development. Matters discussed at the joint meeting with the Technology and Strategy Committee in July included a multiyear overview of the development of SAP's mergers and acquisitions as well as SAP's strategic alignment and competitive environment. At its meeting the following day, the Executive Board reported to the Committee on SAP's planned share buyback. At the Committee's September meeting, it examined the planned acquisition of Gigya Inc. at length and resolved to recommend that the Supervisory Board approve the purchase. In addition, the Executive Board reported on a potential further acquisition. The Committee meeting in October centered on SAP's participation in a joint venture to develop software for the energy industry. The Committee also approved by circular correspondence vote the sale of SAP's minority interest in Mulesoft, Inc. The focus of the joint meeting with the Audit Committee in December

was the presentation of and discussion on the preliminary Group annual plan for 2018, in preparation for the Supervisory Board meeting in February 2018, at which the full Supervisory Board resolved to approve the 2018 Group annual plan.

- The **Technology and Strategy Committee** held four meetings in 2017, one of which being the joint meeting with the Finance and Investment Committee in July, as previously reported. It discussed key technology trends in the software industry in the years to come and SAP's corporate and product strategies. At the February meeting, management informed the Committee about SAP's machine learning strategy and the associated handling of huge data volumes, focusing specifically on SAP's road map and the marketing activities being taken to launch the machine learning solutions. The SAP Cloud Platform strategy and details of the market launch were also explained. When the Committee met in April, it deliberated on the SAP S/4HANA Cloud strategy and was given an update on the SAP Data Network segment. In October, the Committee examined SAP's cloud infrastructure strategy and the latest innovations in SAP SuccessFactors cloud solutions for human capital management.
- The **People and Organization Committee** held two meetings in 2017. In April, the Committee members discussed SAP's workforce planning strategy, taking the services area as an example. Here, the current reorganization meant there was an increased need for additional technical expertise among employees. The Committee's meeting therefore focused on the training offerings and learning programs for employees. In addition, the Committee members discussed the functions of SAP Digital Boardroom and its analysis options for HR data. The second meeting was held in December at the SAP Innovation Center in Potsdam, SAP's development center for new software technologies that opened in 2014. At the Committee's request, management explained in detail how employees helped to shape and drive innovation processes. The parties discussed in-depth how employees can submit and implement their own innovative ideas through the specially-created SAP.iO program, and by what other means SAP fosters a culture of innovation within the Company. The Committee also reviewed the update it had requested on the career paths at SAP and the "Skills of the Future" learning program. The program focuses on certain predefined technical skills that employees need to have in order to create innovative digital solutions on an ongoing basis.
- The **Nomination Committee** is composed exclusively of shareholder representatives. It met once, in April 2017, to deliberate suitable successors for the departing shareholder representative Jim Hagemann Snabe. The Committee members agreed that Aicha Evans was the best candidate and so presented their decision to the remaining shareholder representatives on the Supervisory Board. In addition, the

Committee members regularly discussed succession planning and the search for candidates.

Regular reports from the committees ensured that we were kept fully informed of all matters covered by the committees and were able to discuss them thoroughly.

## Corporate Governance

SAP's corporate governance and insider trading compliance officer monitored our compliance with those recommendations in the Code with which we claim to comply in SAP SE's declaration, and reported in full to the General and Compensation Committee. For more information about compliance with the Code, see the [Corporate Governance Report](#) from the Executive Board and Supervisory Board. Members of the Executive Board and of the Supervisory Board had no conflicts of interest that were required to be disclosed to the Supervisory Board pursuant to sections 4.3.3 and 5.5.2 of the Code. Some Supervisory Board members currently have business dealings with SAP or hold senior positions or material equity in companies that currently have business dealings with SAP, or had done so in the course of the year. SAP's business dealings with these persons or companies are or were at arm's length. In our view, especially given the limited scope and materiality of those dealings, they did not affect the independence of the Supervisory Board members concerned and do not give rise to any substantial and not merely temporary conflict of interest in the meaning of the Code. The Supervisory Board consented by correspondence vote to the instruction of a law firm, in which a Supervisory Board member is a partner, for legal and tax advice in connection with the planned transfer of intellectual property rights of a Swiss subsidiary of the Company to SAP SE. The member concerned did not take part in the deliberations or voting on the matter. There were a number of transactions involving members of the Executive Board in 2016 which were all consistent with industry standards and immaterial. These transactions were approved by the General and Compensation Committee during the year under review. The Company made no other contracts with members of the Executive Board or Supervisory Board that would have required a resolution of the Supervisory Board.

The Supervisory Board closely examined the Executive Board's corporate governance statement. We approved the statement with the combined SAP Group and SAP SE management report.

## SAP SE and Consolidated Financial Reports for 2017

KPMG audited the SAP SE and consolidated financial reports for 2017. The Annual General Meeting of Shareholders elected KPMG as the SAP SE and SAP Group auditor on May 10, 2017. The Supervisory Board proposed the appointment of KPMG on the recommendation of the Audit Committee. Before proposing

KPMG to the Annual General Meeting of Shareholders as auditor for the year, the chairperson of the Supervisory Board and the Audit Committee obtained confirmation from KPMG that circumstances did not exist that might prejudice or raise any doubt concerning its independence as the Company's auditor. In that connection, KPMG informed us of the volume of the services that were not part of the audit which it had either provided to the Group in the past year or was engaged to provide in the year to come. The Supervisory Board has agreed with KPMG that the auditor should report to the Supervisory Board and record in the auditor's report any fact found during the audit that is inconsistent with the declaration given by the Executive Board and the Supervisory Board concerning implementation of the German Corporate Governance Code. KPMG examined the SAP SE financial statements prepared in accordance with the German Commercial Code, the consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRSs) as required by the German Commercial Code, section 315e, and the combined SAP Group and SAP SE management report, and certified them without qualification. The auditor thus confirmed that, in its opinion and based on its audit in accordance with the applicable accounting principles, the SAP SE and consolidated financial statements give a true and fair view of the net assets, financial position, and results of operations of SAP SE and the SAP Group. The auditor also confirmed that the combined SAP SE and SAP Group management report is consistent with the corresponding financial statements and as a whole gives a suitable view of the position of SAP SE and the SAP Group and of foreseeable opportunities and risks. KPMG had completed its audit of SAP's internal control over financial reporting and certified without qualification that it complies with the applicable U.S. standards. The auditor stated in its opinion that it considers SAP's internal controls over financial reporting to be effective in all material respects. All Audit Committee and Supervisory Board members received the documents concerning the financial statements mentioned above, the audit reports prepared by KPMG, and the Executive Board's proposal concerning the appropriation of retained earnings in good time.

On February 21, 2018, the Executive Board prepared the financial accounts of SAP SE and the Group for 2017, comprising the SAP SE financial statements, the consolidated financial statements, and the combined management report, as well as the combined non-financial report and submitted them without delay to the Supervisory Board.

At the meeting of the Audit Committee on February 20, 2018, and at the meeting of the Supervisory Board on February 22, 2018, the Executive Board explained the financial statements of SAP SE and the SAP Group and its proposal concerning the appropriation of retained earnings. Members of the Executive Board answered questions from the Audit Committee and the

Supervisory Board. At the Audit Committee meeting, they also explained the Annual Report on Form 20-F.

After the Executive Board had explained them, the Audit Committee and the Supervisory Board reviewed the financial statement documents along with the combined non-financial report in the light of KPMG's audit reports. The representatives of the auditor who attended presented full reports on the audit and the results of the audit to the Audit Committee and Supervisory Board meetings and explained the audit report. The auditor also reported that it had not identified any material weaknesses in our internal control and risk-management systems for financial reporting. Both the Audit Committee and the Supervisory Board asked detailed questions about the form, scope, and results of the audit. The Audit Committee reported to the Supervisory Board on its own review of the financial statements of SAP SE and the SAP Group, its discussions with the Executive Board and with the auditor, and its supervision of the financial reporting process. It confirmed that as part of its supervisory work, it had addressed the effectiveness of the SAP Group internal control, risk management, and internal auditing systems and found the systems to be effective.

The Committee also reported that KPMG had told it no circumstances had arisen that might give cause for concern about KPMG's impartiality, and informed us about the services KPMG had provided that were not part of the audit. The Committee reported that it had examined the auditor's independence, taking the non-audit services it had rendered into consideration, and stated that in the Committee's opinion the auditor possessed the required degree of independence.

The Audit Committee and the Supervisory Board satisfied themselves that KPMG had conducted the audit properly. In particular, they concluded that both the audit reports and the audit itself fulfilled the legal requirements. On the basis of the report and the Audit Committee's recommendation, the Supervisory Board approved the audit and, since there were no findings from our own examination, we gave our consent to the SAP SE financial statements, the consolidated financial statements, and the combined management report (including the Executive Board's corporate governance statement pursuant to the German Commercial Code, sections 315d and 289f), as well as the combined non-financial report pursuant to the German Commercial Code, sections 315b and 289b. The financial statements and combined management report were thus formally adopted. The Supervisory Board's opinion of the Company and the Group coincided with that of the Executive Board as set out in the combined management report. The Supervisory Board considered the proposal presented by the Executive Board concerning the appropriation of retained earnings. We had regard to the requirements of dividends policy, the effects on the liquidity of the Group, and the interests of the shareholders. We also discussed these matters with the auditor. We then endorsed the Executive Board's proposal

concerning the appropriation of retained earnings, in accordance with the Audit Committee's recommendation. Finally, we approved this present Report.

## **Changes on the Supervisory and Executive Boards**

Jim Hagemann Snabe resigned from the Supervisory Board effective June 30, 2017. His successor Aicha Evans was appointed to the Supervisory Board by order of the court with effect from July 1, 2017.

Steve Singh resigned from the Executive Board with effect from April 30, 2017. Adaire Fox-Martin and Jennifer Morgan were appointed to the Executive Board effective May 1, 2017. Christian Klein was likewise appointed to the Executive Board, effective January 1, 2018.

The Supervisory Board would like to sincerely thank Jim Hagemann Snabe and Steve Singh for their invaluable contribution to the success of the Company.

The Supervisory Board also thanks the Executive Board, the managing directors of the Group companies, and all of our employees for their great commitment and dedication in 2017.

For the Supervisory Board

Professor Hasso Plattner

(Chairperson)

# Compensation Report<sup>1)</sup>

## Compensation for Executive and Supervisory Board Members

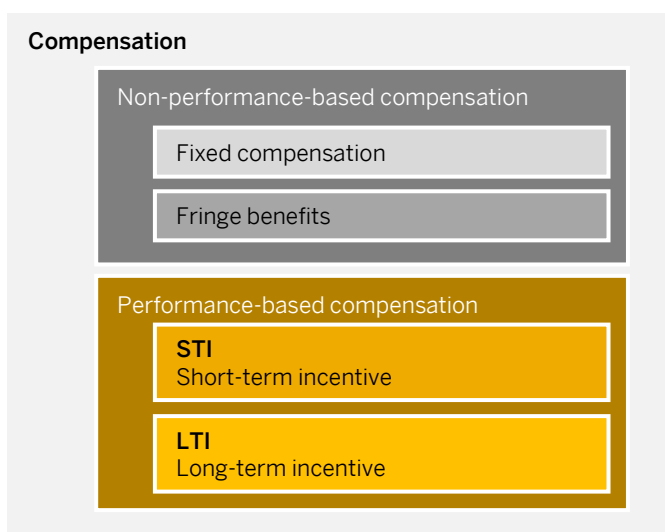
This compensation report describes the compensation system, outlines the criteria that apply to the compensation for Executive Board and Supervisory Board members for the year 2017, and discloses the amount of compensation.

## Compensation for Executive Board Members

### Compensation System for 2017

The compensation for Executive Board members is intended to reflect the demanding role of Executive Board members leading a global company in a quickly evolving sector. The compensation level is aimed to be competitive to support SAP in the worldwide market for highly skilled executives, especially in the context of the software industry. It is our vision that our Executive Board compensation provides sustainable incentive for committed, successful work in a dynamic business environment.

The Supervisory Board – supported by its General and Compensation Committee – determines the compensation for each Executive Board member based on their individual role and performance in its first regular meeting of each fiscal year. For further details about the work of the Supervisory Board and its committees, see the [Report by the Supervisory Board](#). As pictured below, the compensation contains the following elements:



The amount of performance-based compensation depends primarily on SAP's performance against predefined financial target values (Key Performance Indicators, KPIs) and on the SAP share price, and is subject to hurdles and caps. These KPIs and their target values as well as their weighting are set by the Supervisory Board each plan year and are aligned to the SAP budget for that year.

The Supervisory Board sets the individual total target compensation for each Executive Board member, comprised of the fixed compensation element and the two performance-based elements. The target compensation is benchmarked based on SAP's global strategy, market position, business performance and future prospects of economy, and the compensation paid at comparable national and international companies. The Supervisory Board also considers the compensation systems applicable for the rest of the Company, comparing Executive Board pay with the pay of executives and employees. The performance-based elements each correspond to a target achievement of 100% of all KPIs. The Supervisory Board reviews, assesses, and if appropriate, revises these compensation targets, in its first meeting of each fiscal year. The Supervisory Board is of the opinion that this approach ensures the compensation is appropriate.

The compensation system is designed to support the growth of value for the Company over the long term. The long-term incentive element therefore has significant weighting, making up more than two-thirds of the CEO's compensation target, and more than 50% of each Executive Board member's compensation target.

In the case of any extraordinary, unforeseeable events, the Supervisory Board is entitled, at its reasonable discretion, to adjust the performance-based compensation before payout upwards or downwards in the interest of SAP. No corrections to the payout amounts paid in May 2017 were made.

The individual elements of SAP's Executive Board compensation are described in more detail below.

## Non-Performance-Based Compensation

### Fixed Compensation

The fixed compensation is paid monthly in twelve equal installments in the Executive Board member's home currency<sup>2)</sup>.

<sup>1)</sup> This compensation report is part of the audited management report.

<sup>2)</sup> Home currency is the currency of the Executive Board member's home country or primary place of residence.

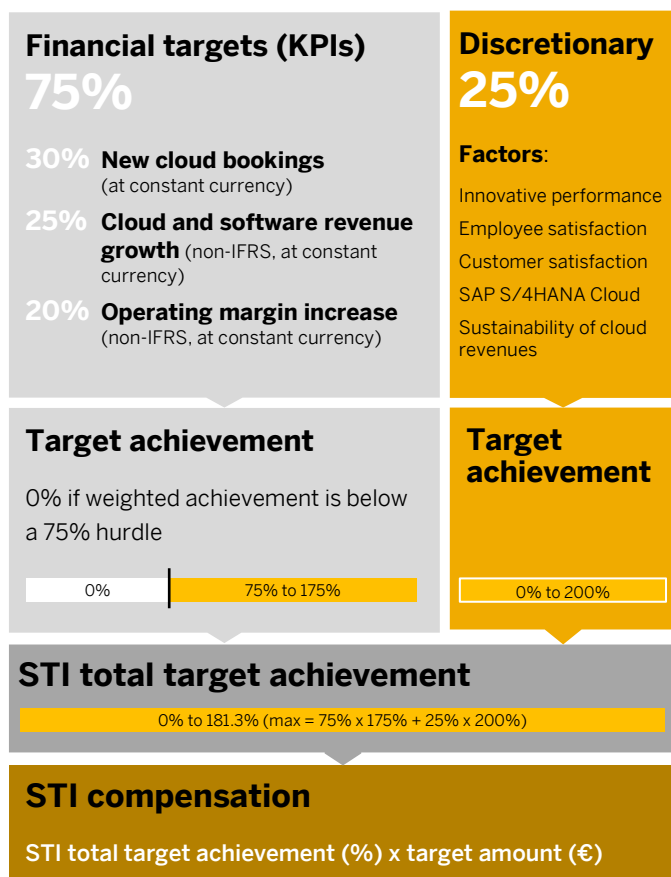


## Fringe Benefits

The contractually guaranteed fringe benefits mainly comprise additional benefits such as insurance contributions, benefits in kind, expenses for maintenance of two households, use of aircraft, tax gross-ups according to local conditions, and discrete payments arising through application of the fixed exchange-rate clause due to payments in previous years.

## Performance-Based Compensation

### Short-Term Incentive



The short-term, one-year performance-based compensation (Short-Term Incentive (STI)) is determined based on a set of financial targets (KPIs) with a weighting of 75% and a discretionary element with a weighting of 25%. This 25% in relation to the Executive Board target compensation based on a 100% target achievement corresponds with a proportion of 5% to 8% of the total compensation.

For the payout of the STI 2017, the financial KPIs are: constant currency new cloud bookings, non-IFRS constant currency cloud and software revenue growth, and non-IFRS constant currency operating margin increase. The KPIs and their respective target values are derived from SAP's budget for that year. For more information about financial KPIs, see the [Performance Management System](#) section.

Further, the discretionary element of the STI allows the Supervisory Board to address SAP's performance along the following factors: innovative performance, employee satisfaction (taking attractiveness as an employer, innovative HR strategy, HR excellence, leadership development, and social partnership into consideration), customer satisfaction, further development, expansion of application and marketing of our product SAP S/4HANA Cloud, and sustainability of cloud revenues. The last two factors are new for 2017, reflecting the increasing relevance of the cloud business.

SAP determines this discretionary element mainly based on market data, the results of an annual employee survey, and customer satisfaction surveys, and compares it with the corresponding prior-year values.

The Supervisory Board is also authorized to consider the individual performance of the Executive Board members when determining the target achievement of the discretionary element. In previous years, the Supervisory Board has consistently evaluated the Executive Board as a whole and has not applied individual adjustments.

If the weighted target achievement for the financial KPIs is below 75%, there is no STI payout for the financial KPIs. In this case, the target achievement for these KPIs is set to zero.

On February 21, 2018, the Supervisory Board assessed SAP's performance against the agreed targets and determined the amount of STI for the entire Executive Board compensation:

- Financial targets (KPIs) 88.3% (cloud and software revenue growth 99.6%, operating margin increase 85.0%, and new cloud bookings 81.1%)
- Discretionary element 88.0%

This resulted in a total target achievement of 88.2%. The STI compensation for 2017 will be paid out after the Annual General Meeting of Shareholders in May 2018. It is paid in the Executive Board member's home currency<sup>2)</sup>. All Executive Board members are obliged to purchase SAP shares worth at least 5% of the actual payout amount according to appropriate trading period regulations. These shares are subject to a three-year holding period.

### Long-Term Incentive

The purpose of the long-term, multiyear performance-based compensation (Long-Term Incentive, LTI) is to reward the annual achievement of the non-IFRS constant currency operating profit, to ensure long-term retention of our Executive Board members ("Retention"), and to reward them for a long-term SAP share price performance ("Performance") as compared to its main peer group (Peer Group).

The LTI 2016 plan came into effect on January 1, 2016. It is a virtual share program with a term of four years per tranche.

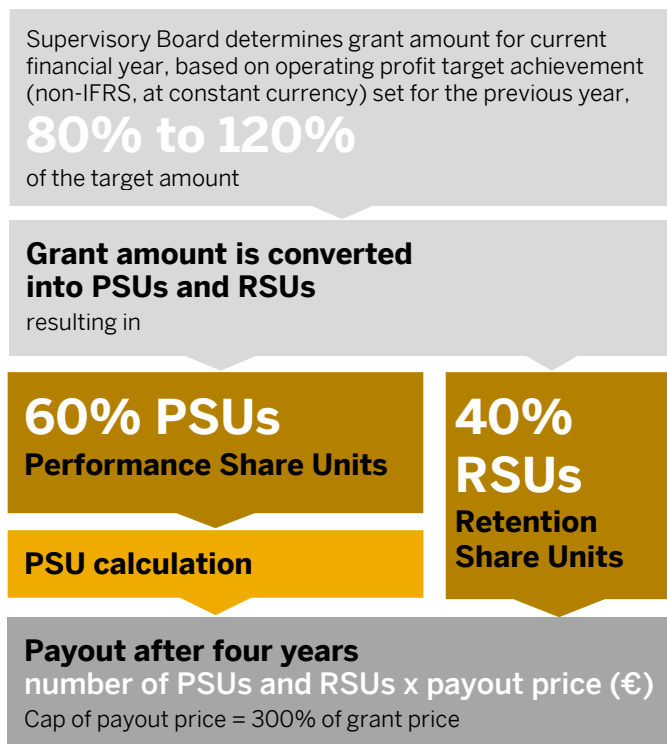
<sup>2)</sup> Home currency is the currency of the Executive Board member's home country or primary place of residence.

Under the plan, a new LTI tranche is granted annually. Each grant starts with determining a grant amount in euros. This grant amount is based on the Executive Board members' contractual target amount and the operating profit target achievement (non-IFRS, at constant currency) for the previous year. Taking this target achievement into account, the grant amount can be adjusted upwards or downwards in the range of 80% to 120% of the contractual target amount. The 2016 operating profit target achievement was 97.3%. Considering this, the Supervisory Board set the grant amount of the 2017 tranche at 100% of the contractual target amount.

This grant amount is converted into virtual shares (Share Units), so that Executive Board members participate in further share price developments. The grant price is the arithmetic mean of the XETRA closing prices of SAP stock on the 20 trading days following publication of SAP's fourth-quarter results. The grant date of the 2017 tranche was February 22, 2017 (April 13, 2017, for Adaire Fox-Martin and Jennifer Morgan).

All Share Units granted in this way, comprising 60% Performance Share Units (PSUs) and 40% Retention Share Units (RSUs), have a vesting period of approximately four years, during which the Executive Board member must actively contribute to the Company's operations. The value of the Share Units varies positively and negatively with the performance of SAP's share price. At the end of the vesting period, the corresponding Share Units are non-forfeitable.

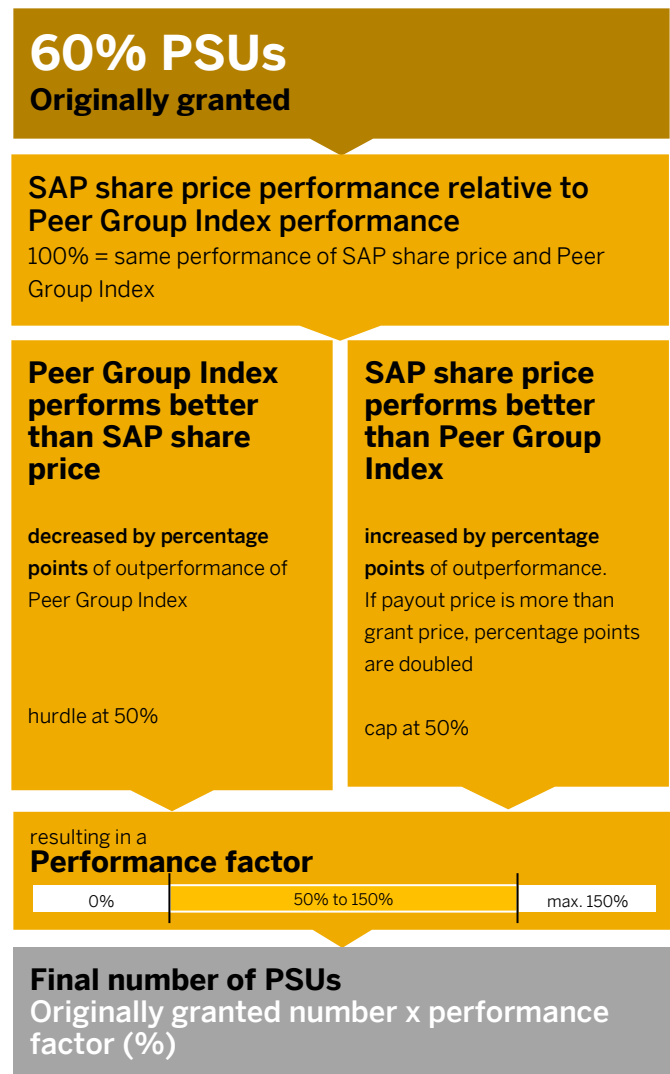
### LTI Grant Process



The payout price used for the settlement is the simple arithmetic mean of the XETRA closing prices of the SAP share on the 20 trading days following the publication of SAP's fourth-quarter results subsequent to the end of the vesting period. The payout price is capped at 300% of the grant price. The LTI tranche is paid in euros after the Annual General Shareholders' Meeting of the corresponding year. Any potential foreign currency exchange rate risk is borne by the Executive Board members themselves.

The number of Share Units that will finally result in payments to the Executive Board members can and will likely differ from the number originally granted. The number of PSUs ultimately paid out changes depending on the performance of the SAP share relative to the Peer Group Index. This places more weight on SAP's performance within the industry. In contrast, the final number of RSUs is fixed. However, both types of Share Units may expire during the entire term of a tranche under certain conditions (see the "LTI Forfeiture Rules" graphic below).

### PSU Calculation



SAP's share price performance is measured by comparing the grant price against the payout price. We calculate the difference between SAP's share price performance and the Peer Group Index performance. In case of an increased SAP share price and an outperformance against the Peer Group Index, the calculated difference is doubled to reward positive performance. The following examples of the PSU calculation illustrate possible outcomes assuming 1,000 PSUs granted:

<b>SAP share price performs better than Peer Group Index</b>		
SAP share price performance		+18%
Peer Group Index performance		+10%
Difference	+18% – (+10%)	+8%
Performance factor with doubled difference	(+8% x 2) + 100%	116%
Final number of PSUs	116% x 1000	1,160

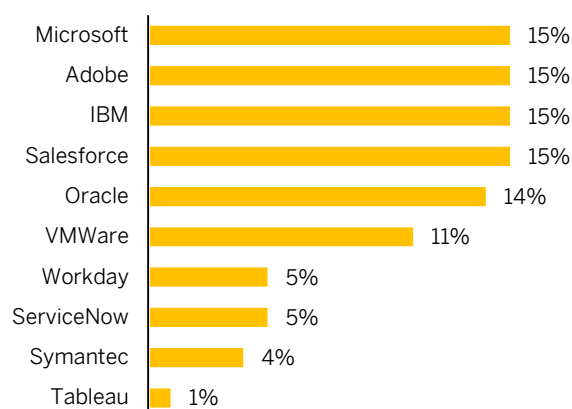
<b>SAP share price performs much higher than Peer Group Index; cap is triggered</b>		
SAP share price performance		+30%
Peer Group Index performance		-5%
Difference	+30% – (-5%)	+35%
Performance factor with doubled difference	(+35% x 2) + 100%	170%
	Capped at	150%
Final number of PSUs	150% x 1000	1,500

<b>Peer Group Index performs better than SAP share price</b>		
SAP share price performance		+5%
Peer Group Index performance		+10%
Difference	+5% – (+10%)	-5%
Performance factor	-5% + 100%	95%
Final number of PSUs	95% x 1000	950

<b>Peer Group Index performs better than SAP share price; low hurdle triggered</b>		
SAP share price performance		-10%
Peer Group Index performance		+50%
Difference	-10% – (+50%)	-60%
Performance factor	-60% + 100%	40%
	Hurdle is 50%	0%
Final number of PSUs	0% x 1000	0

The Peer Group Index currently includes the following major international competitors of SAP: Microsoft, Adobe, IBM, Salesforce, Oracle, VMWare, Workday, ServiceNow, Symantec, and Tableau. The Supervisory Board has defined this group based on internal and external recommendations and, if necessary, adjusts the group, for example, in case of a competitor's delisting. The Peer Group Index is calculated as a price index based on weighted market capitalization, which is capped at 15%. Consequently, the weight of smaller, more volatile competitors is increased, resulting in a highly ambitious index. The index is calculated daily by Deutsche Börse Group and can be tracked under ISIN DE000A2BLEB9.

### Composition of Peer Group Index

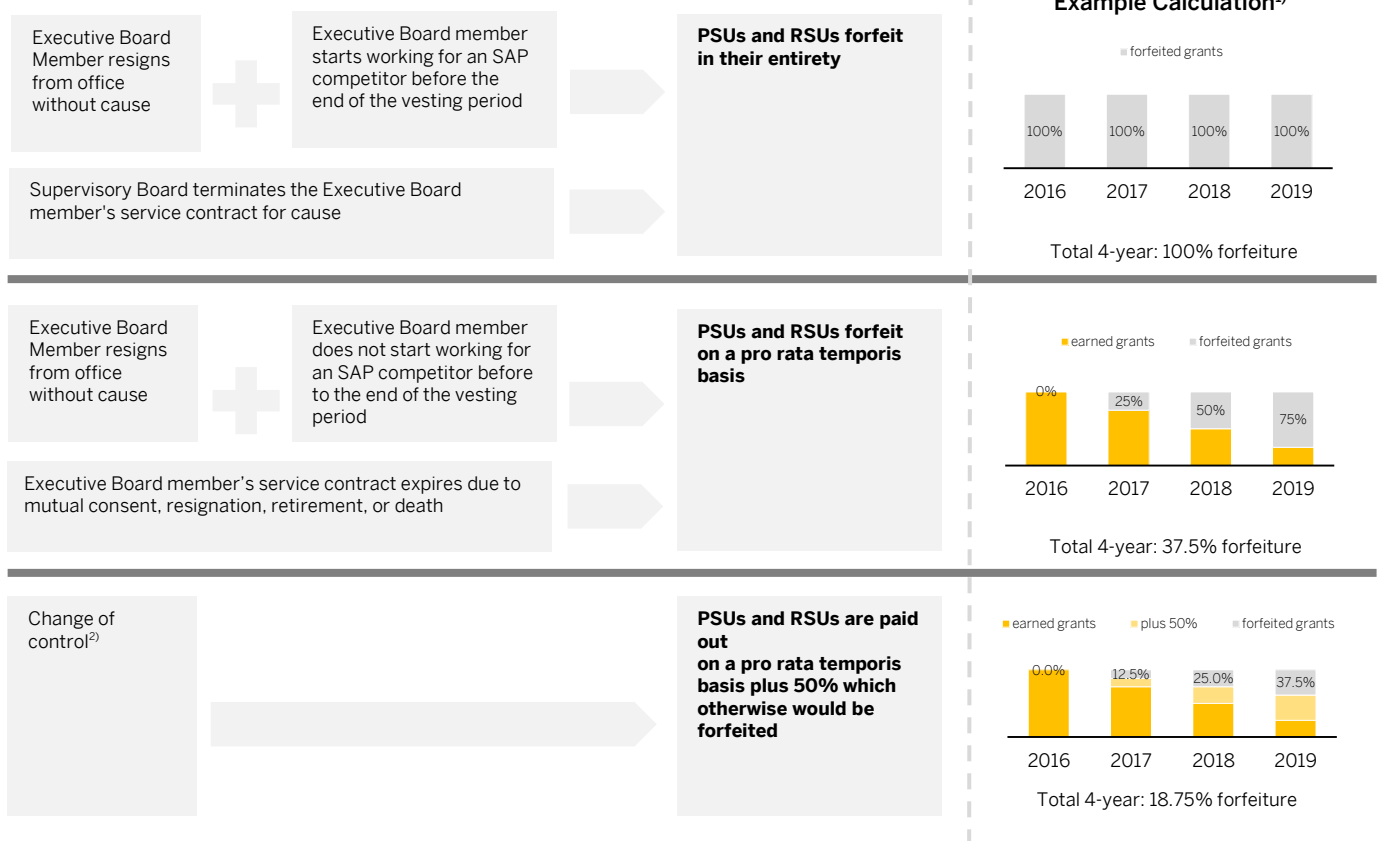


as at December 31, 2017

If an Executive Board member's service contract is terminated before the end of the third year following the year in which the Share Units were granted, both the PSUs and RSUs are forfeited in whole or in part, depending on the circumstances of the relevant resignation from office or termination of the service

contract. In case PSUs and RSUs are forfeited in part, the percentage of the forfeiture is proportional to the four-year vesting period of each grant. This means that 25% of the grant is earned each year of the vesting period. Unearned grants are forfeited.

## LTI Forfeiture Rules



<sup>1)</sup> Example calculation with four tranches (grant allocation of 100%, stable share price from grant to vest, and no consideration of performance condition); Executive Board member's contract terminates after year four (December 31, 2019)

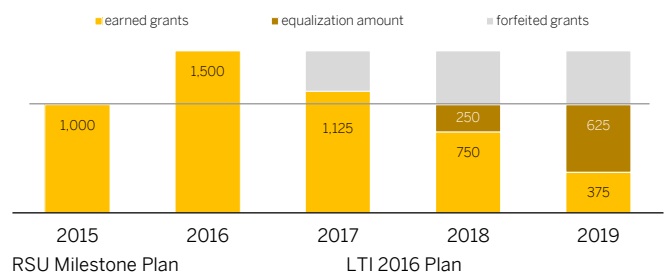
<sup>2)</sup> For the definition, see the Early End-of-Service Undertakings section

The change from the previous RSU Milestone Plan to the new LTI 2016 Plan required a transition rule in order to avoid unjustified disadvantages for Executive Board members. The disadvantage arises from the difference in the one-year vesting period in the RSU Milestone Plan in comparison to the four-year vesting period in the LTI 2016 Plan. In order to compensate for this disadvantage related to the vesting periods, Executive Board members who have participated in the RSU Milestone Plan will receive an individual equalization amount.

The equalization amount is subject to:

- A target achievement of at least 60% of the non-IFRS constant currency operating profit target, and
- An ongoing employment relationship in 2016, 2017, and, in one case, in 2018.

In the event an Executive Board member leaves the company and PSUs would otherwise be forfeited on a pro rata basis, the Executive Board member is entitled to PSUs equal to the equalization amount. The following graphic gives an example of how the equalization amount was derived, assuming a grant of €1,000 for the RSU Milestone Plan, a grant of €1,500 for the LTI 2016 Plan, and a forfeiture of the grants on a pro rata temporis basis on December 31, 2019:



## Clawback Provisions

According to an amendment of the standard service contract for all Executive Board members implemented at the end of 2017, SAP has the contractual right to request that the Executive Board member returns any payments made from STI or LTI if it subsequently emerges that the payment was not justified in whole or in part because targets were not achieved at all or not achieved in the scope assumed when calculating the payment amount due on account of false information having been provided. In such case, the Executive Board member is obliged to repay to SAP the amount by which the payment actually made exceeds the payment amount due on the basis of the targets actually achieved. Such contractually agreed claim to repayment supplements the claim for restitution of unjustified enrichment pursuant to section 812 of the German Civil Code (BGB).

## Minimum and Maximum Compensation

The minimum compensation amount reflects the fixed compensation amount and an LTI and STI payout of zero.

The maximum compensation amount is capped at 369% (CEO) and 335% (Executive Board other than CEO) of the total target compensation. This would be achieved in the event of the maximum possible payout amount of the STI and the LTI, as follows:

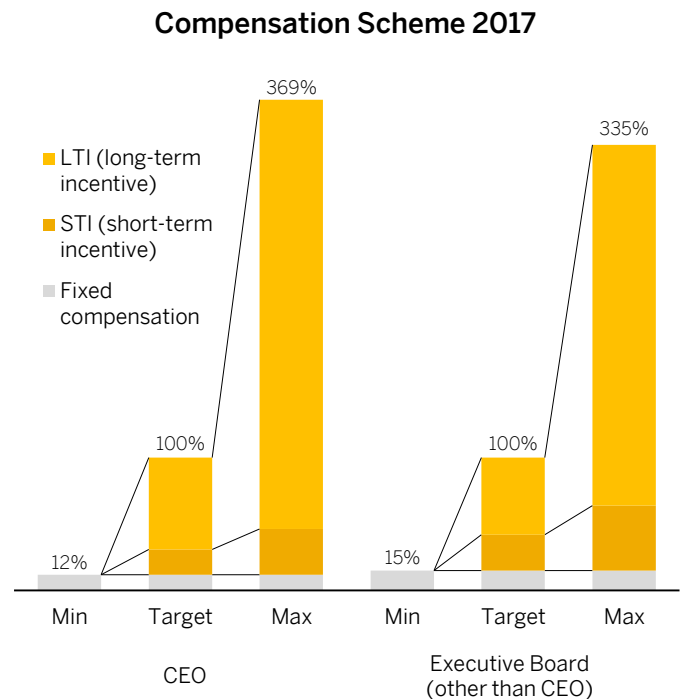
- The maximum possible payout amount of the STI is reached when the target achievement of all financial KPIs is 175% and the target achievement of the discretionary element is 200%. This would amount to a total STI payout of 181.3%.
- The maximum possible payout amount for the LTI tranche is 468% of the contractual target amount.

The maximum possible payout amount of the LTI is reached if all of the following conditions are cumulatively met:

- The grant amount for the LTI tranche has been set at its capped maximum of 120% of the contractual target amount.
- SAP's share price outperforms the Peer Group Index by at least 25 percentage points (reaching the capped maximum 150% of the initial PSU allocation for that year).
- The SAP share price has at least tripled (corresponding to an average annual increase of approximately 32%) compared to the grant price (cap on share price development).

In the event of the maximum LTI payout for the entire Executive Board of €120 million in 2021, the shareholders would also benefit through the strong increase in market capitalization, which would mean an increase of at least €200 billion from 2017 to 2021.

The following graphic illustrates the relation of the fixed and performance-based compensation elements in the Executive Board members' target compensation for 2017 based on € amounts, as well as the minimum and maximum possible compensation. The height of the bars is not indicative of the absolute compensation amount.



## Overview of the Relations Between Target and Payout for Performance-Based Compensation

The total target achievements of STI reflect the relation between the target amount and the payout amount. The STIs for the years 2013 to 2016 were already paid out.

### STI Total Target Achievement

Percentage	2017	2016	2015	2014	2013
	88.2	104.4	147.5	109.5	93.4

The relation between the LTI target amounts for the 2015 to 2017 tranches and the theoretical payout amounts are based on SAP's share price on December 31, 2017. The 2013 tranche discloses the relation between the respective target amount and the actual payout amount in May 2017. The 2014 tranche discloses the relation between the respective target amount and the payout amount scheduled for May 2018.

### Relation between Target Amount and Payout Amount of the LTI

Percentage	LTI 2016 Plan		RSU Milestone Plan 2015		
	2017 Tranche <sup>1)</sup>	2016 Tranche <sup>1)</sup>	2015 Tranche <sup>1)2)</sup>	2014 Tranche	2013 Tranche
	107.76	126.97	240.73	119.61	131.83

<sup>1)</sup> Consideration of theoretical payout amounts based on SAP's share price on December 31, 2017

<sup>2)</sup> Consideration of individual adjustment factor in addition to target achievement 2015 ranging between 31.62% and 37.38%

## Changes to the Compensation Structure for 2018

Under consideration of the feedback from the dialog between the Supervisory Board Chairman and investors, the Supervisory Board resolved in its February 21, 2018 meeting to change the structure of the Executive Board compensation for 2018 compared to the 2017 structure described above. Changes were only made to the short-term, one-year compensation (STI) and are as follows:

- The STI no longer includes a discretionary element. It is calculated solely on the basis of the three financial targets that were also part of the STI for 2017.

- The weighting of the financial targets is as follows: 40% New Cloud Bookings (at constant currencies), 35% Growth in Cloud and Software Revenue (non-IFRS, at constant currencies) and 25% growth of Operating Margin (non-IFRS, at constant currencies).
- The maximum target achievement of the financial KPIs and therefore the STI total target achievement for 2018 is 140%. (2017: 175% maximum target achievement of the financial KPIs and 181.3% STI total target achievement). This also reduces the maximum total compensation amount for 2018.

## Amount of Compensation for 2017

We present the Executive Board compensation disclosures in accordance with the recommendations of the German Corporate Governance Code ("GCGC"). Furthermore, the tables below provide a reconciliation statement following the requirements of sections 314 and 315 of the German Commercial Code (*Handelsgesetzbuch*, or "HGB") as specified in the German Accounting Standards ("GAS 17"). Pursuant to the recommendations of the GCGC, the value of benefits granted for the year under review as well as the benefits received, that is, the amounts disbursed for the year under review, are disclosed below based on the reference tables recommended in the GCGC. In contrast to the disclosure rules stipulated in the German HGB and GAS 17, the GCGC includes the pension expense, that is, the service cost according to IAS 19, in the Executive Board compensation and requires the additional disclosure of the target value for the one-year variable compensation and the maximum and minimum compensation amounts achievable for the variable compensation elements.

## Executive Board Members' Compensation German Corporate Governance Code

€ thousands	Bill McDermott CEO						Robert Enslin Member of the Executive Board					
	Benefits Granted				Benefits Received		Benefits Granted			Benefits Received		
	2017 <sup>1)</sup>	2017 (Min)	2017 (Max)	2016 <sup>1)</sup>	2017 <sup>1)</sup>	2016 <sup>1)</sup>	2017 <sup>1)</sup>	2017 (Min)	2017 (Max)	2016 <sup>1)</sup>	2017 <sup>1)</sup>	2016 <sup>1)</sup>
Fixed compensation	1,374.3	1,374.3	1,374.3	1,403.0	1,374.3	1,403.0	836.5	836.5	836.5	854.0	836.5	854.0
Fringe benefits <sup>2)</sup>	1,271.9	1,271.9	1,271.9	1,625.7	1,271.9	1,625.7	368.1	368.1	368.1	474.0	368.1	474.0
<b>Total</b>	<b>2,646.2</b>	<b>2,646.2</b>	<b>2,646.2</b>	<b>3,028.7</b>	<b>2,646.2</b>	<b>3,028.7</b>	<b>1,204.6</b>	<b>1,204.6</b>	<b>1,204.6</b>	<b>1,328.0</b>	<b>1,204.6</b>	<b>1,328.0</b>
One-year variable compensation	2,093.7	0	3,795.9	2,382.1	2,486.9	2,743.5	1,267.2	0	2,297.4	1,441.8	1,505.2	1,660.5
<b>Multiyear variable compensation</b>												
LTI 2016 Plan	7,741.2	0	29,911.2	8,000.3			2,555.7	0	9,874.8	2,641.3		
RSU Milestone Plan 2015					5,787.6	9,244.7						
SAP SOP 2010					6,029.8							
SAP SOP 2011					4,148.5							
<b>Total</b>	<b>12,481.1</b>	<b>2,646.2</b>	<b>36,353.3</b>	<b>13,411.1</b>	<b>21,099.0</b>	<b>15,016.9</b>	<b>5,027.5</b>	<b>1,204.6</b>	<b>13,376.8</b>	<b>5,411.1</b>	<b>2,709.8</b>	<b>2,988.5</b>
Service cost	686.2	686.2	686.2	571.3	686.2	571.3	194.1	194.1	194.1	34.7	194.1	34.7
<b>Total according to GCGC</b>	<b>13,167.3</b>	<b>3,332.4</b>	<b>37,039.5</b>	<b>13,982.4</b>	<b>21,785.2</b>	<b>15,588.2</b>	<b>5,221.6</b>	<b>1,398.7</b>	<b>13,570.9</b>	<b>5,445.8</b>	<b>2,903.9</b>	<b>3,023.2</b>

## German Corporate Governance Code

	€ thousands											
	Aidaire Fox-Martin Member of the Executive Board (from May 1, 2017)						Michael Kleinemeier Member of the Executive Board					
	Benefits Granted				Benefits Received		Benefits Granted				Benefits Received	
	2017	2017 (Min)	2017 (Max)	2016	2017	2016	2017	2017 (Min)	2017 (Max)	2016	2017	2016
Fixed compensation	466.7	466.7	466.7		466.7		700.0	700.0	700.0	700.0	700.0	700.0
Fringe benefits <sup>2)</sup>	82.4	82.4	82.4		82.4		29.0	29.0	29.0	26.9	29.0	26.9
<b>Total</b>	<b>549.1</b>	<b>549.1</b>	<b>549.1</b>	<b>0</b>	<b>549.1</b>	<b>0</b>	<b>729.0</b>	<b>729.0</b>	<b>729.0</b>	<b>726.9</b>	<b>729.0</b>	<b>726.9</b>
One-year variable compensation	755.6	0	1,369.9				1,125.8	0	2,041.1	1,125.8	1,175.3	277.5
<b>Multiyear variable compensation</b>												
LTI 2016 Plan	1,680.0	0	6,215.4				2,396.4	0	9,259.6	2,476.6		
RSU Milestone Plan 2015												
SAP SOP 2010												
SAP SOP 2011												
<b>Total</b>	<b>2,984.7</b>	<b>549.1</b>	<b>8,134.4</b>	<b>0</b>	<b>549.1</b>	<b>0</b>	<b>4,251.2</b>	<b>729.0</b>	<b>12,029.7</b>	<b>4,329.3</b>	<b>1,904.3</b>	<b>1,004.4</b>
Service cost												
<b>Total according to GCGC</b>	<b>2,984.7</b>	<b>549.1</b>	<b>8,134.4</b>	<b>0</b>	<b>549.1</b>	<b>0</b>	<b>4,251.2</b>	<b>729.0</b>	<b>12,029.7</b>	<b>4,329.3</b>	<b>1,904.3</b>	<b>1,004.4</b>

	€ thousands											
	Bernd Leukert Member of the Executive Board						Jennifer Morgan Member of the Executive Board (from May 1, 2017)					
	Benefits Granted				Benefits Received		Benefits Granted				Benefits Received	
	2017	2017 (Min)	2017 (Max)	2016	2017	2016	2017 <sup>b)</sup>	2017 (Min)	2017 (Max)	2016	2017 <sup>b)</sup>	2016
Fixed compensation	700.0	700.0	700.0	700.0	700.0	700.0	430.4	430.4	430.4		430.4	
Fringe benefits <sup>2)</sup>	30.3	30.3	30.3	12.4	30.3	12.4	48.4	48.4	48.4		48.4	
<b>Total</b>	<b>730.3</b>	<b>730.3</b>	<b>730.3</b>	<b>712.4</b>	<b>730.3</b>	<b>712.4</b>	<b>478.8</b>	<b>478.8</b>	<b>478.8</b>	<b>0</b>	<b>478.8</b>	<b>0</b>
One-year variable compensation	1,125.8	0	2,041.1	1,125.8	1,175.3	1,660.5	674.2	0	1,222.3			
<b>Multiyear variable compensation</b>												
LTI 2016 Plan	2,699.3	0	10,429.7	2,789.6			1,680.0	0	6,215.4			
RSU Milestone Plan 2015												
SAP SOP 2010												
SAP SOP 2011												
<b>Total</b>	<b>4,555.4</b>	<b>730.3</b>	<b>13,201.1</b>	<b>4,627.8</b>	<b>1,905.6</b>	<b>2,372.9</b>	<b>2,833.0</b>	<b>478.8</b>	<b>7,916.5</b>	<b>0</b>	<b>478.8</b>	<b>0</b>
Service cost							8.9	8.9	8.9		8.9	
<b>Total according to GCGC</b>	<b>4,555.4</b>	<b>730.3</b>	<b>13,201.1</b>	<b>4,627.8</b>	<b>1,905.6</b>	<b>2,372.9</b>	<b>2,841.9</b>	<b>487.7</b>	<b>7,925.4</b>	<b>0</b>	<b>487.7</b>	<b>0</b>

## German Corporate Governance Code

	Luka Mucic Member of the Executive Board						Stefan Ries Member of the Executive Board					
	Benefits Granted			Benefits Received			Benefits Granted			Benefits Received		
	2017	2017 (Min)	2017 (Max)	2016	2017	2016	2017	2017 (Min)	2017 (Max)	2016	2017	2016
Fixed compensation	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	525.0	700.0	525.0
Fringe benefits <sup>2)</sup>	11.0	11.0	11.0	12.1	11.0	12.1	22.4	22.4	22.4	13.5	22.4	13.5
<b>Total</b>	<b>711.0</b>	<b>711.0</b>	<b>711.0</b>	<b>712.1</b>	<b>711.0</b>	<b>712.1</b>	<b>722.4</b>	<b>722.4</b>	<b>722.4</b>	<b>538.5</b>	<b>722.4</b>	<b>538.5</b>
One-year variable compensation	1,125.8	0	2,041.1	1,125.8	1,175.3	1,660.5	1,125.8	0	2,041.1	845.9	883.1	
<b>Multiyear variable compensation</b>												
LTI 2016 Plan	2,396.4	0	9,259.6	2,476.6			2,018.7	0	7,799.9	1,532.1		
RSU Milestone Plan 2015												
SAP SOP 2010												
SAP SOP 2011												
<b>Total</b>	<b>4,233.2</b>	<b>711.0</b>	<b>12,011.7</b>	<b>4,314.5</b>	<b>1,886.3</b>	<b>2,372.6</b>	<b>3,866.9</b>	<b>722.4</b>	<b>10,563.4</b>	<b>2,916.5</b>	<b>1,605.5</b>	<b>538.5</b>
Service cost												
<b>Total according to GCGC</b>	<b>4,233.2</b>	<b>711.0</b>	<b>12,011.7</b>	<b>4,314.5</b>	<b>1,886.3</b>	<b>2,372.6</b>	<b>3,866.9</b>	<b>722.4</b>	<b>10,563.4</b>	<b>2,916.5</b>	<b>1,605.5</b>	<b>538.5</b>

	Steve Singh Member of the Executive Board (until April 30, 2017)						Total Executive Board			
	Benefits Granted			Benefits Received			Benefits Granted		Benefits Received	
	2017 <sup>1)</sup>	2017 (Min)	2017 (Max)	2016 <sup>1)</sup>	2017 <sup>1)</sup>	2016 <sup>1)</sup>	2017	2016	2017	2016
Fixed compensation	295.4	295.4	295.4	640.0	295.4	640.0	6,203.3	5,522.0	6,203.3	5,522.0
Fringe benefits <sup>2)</sup>	2.5	2.5	2.5	6.1	2.5	6.1	1,866.0	2,170.7	1,866.0	2,170.7
<b>Total</b>	<b>297.9</b>	<b>297.9</b>	<b>297.9</b>	<b>646.1</b>	<b>297.9</b>	<b>646.1</b>	<b>8,069.3</b>	<b>7,692.7</b>	<b>8,069.3</b>	<b>7,692.7</b>
One-year variable compensation	1,267.2	0	2,297.4	1,083.3	1,131.0		10,561.1	9,130.5	9,532.1	8,002.5
<b>Multiyear variable compensation</b>										
LTI 2016 Plan	2,555.6	0	9,874.8	1,939.7			25,723.3	21,856.2		
RSU Milestone Plan 2015									5,787.6	9,244.7
SAP SOP 2010									6,029.8	
SAP SOP 2011									4,148.5	
<b>Total</b>	<b>4,120.7</b>	<b>297.9</b>	<b>12,470.1</b>	<b>3,669.1</b>	<b>1,428.9</b>	<b>646.1</b>	<b>44,353.7</b>	<b>38,679.4</b>	<b>25,498.0</b>	<b>24,939.9</b>
Service cost							889.2	606.0	889.2	606.0
<b>Total according to GCGC</b>	<b>4,120.7</b>	<b>297.9</b>	<b>12,470.1</b>	<b>3,669.1</b>	<b>1,428.9</b>	<b>646.1</b>	<b>45,242.9</b>	<b>39,285.4</b>	<b>26,387.2</b>	<b>25,545.9</b>

<sup>1)</sup> The value of the fixed and one-year variable compensation is granted in U.S. dollars. For conversion purposes from U.S. dollars into euro, for fixed compensation the average exchange rate and for the one-year variable compensation the year-end exchange rate of the respective period applies.

<sup>2)</sup> Insurance contributions, the private use of company cars and aircraft, benefits in kind, expenses for maintenance of two households, payments and related supplements for relocation upon appointment to the Executive Board, reimbursement of fees for the preparation of tax returns, tax gross ups according to local conditions and discrete payments arising through application of the fixed exchange-rate clause for 2015. The fringe benefits of Bill McDermott mainly consist of tax gross ups according to local conditions, discrete payments arising through application of the fixed exchange-rate clause for 2015 and expenses for maintenance of two households.



## Reconciliation Reporting of Total Compensation Pursuant to Section 314(1)(6a) HGB in Connection with GAS 17

€ thousands	Bill McDermott		Robert Enslin		Adaire Fox-Martin		Michael Kleinemeier		Bernd Leukert	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	<b>Total according to GCGC</b>	<b>13,167.3</b>	<b>13,982.4</b>	<b>5,221.6</b>	<b>5,445.8</b>	<b>2,984.7</b>	<b>0</b>	<b>4,251.2</b>	<b>4,329.3</b>	<b>4,555.4</b>
Less granted annual variable target compensation	-2,093.7	-2,382.1	-1,267.2	-1,441.8	-755.6		-1,125.8	-1,125.8	-1,125.8	-1,125.8
Plus allocated actual annual variable compensation	1,846.7	2,486.9	1,117.7	1,505.2	666.5		992.9	1,175.3	992.9	1,175.3
Less service cost	-686.2	-571.3	-194.1	-34.7						
<b>Total compensation</b>	<b>12,234.1</b>	<b>13,515.9</b>	<b>4,878.0</b>	<b>5,474.5</b>	<b>2,895.6</b>	<b>0</b>	<b>4,118.3</b>	<b>4,378.8</b>	<b>4,422.5</b>	<b>4,677.3</b>

€ thousands	Jennifer Morgan		Luka Mucic		Stefan Ries		Steve Singh		Total Executive Board	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
	<b>Total according to GCGC</b>	<b>2,841.9</b>	<b>0</b>	<b>4,233.2</b>	<b>4,314.5</b>	<b>3,866.9</b>	<b>2,916.5</b>	<b>4,120.7</b>	<b>3,669.1</b>	<b>45,242.9</b>
Less granted annual variable target compensation	-674.2		-1,125.8	-1,125.8	-1,125.8	-845.9	-1,267.2	-1,083.3	-10,561.1	-9,130.5
Plus allocated actual annual variable compensation	594.6		992.9	1,175.3	992.9	883.1	367.5	1,131.0	8,564.6	9,532.1
Less service cost	-8.9								-889.2	-606.0
<b>Total compensation</b>	<b>2,753.4</b>	<b>0</b>	<b>4,100.3</b>	<b>4,364.0</b>	<b>3,734.0</b>	<b>2,953.7</b>	<b>3,221.0</b>	<b>3,716.8</b>	<b>42,357.2</b>	<b>39,081.0</b>

### Vertical Pay Ratio

The vertical pay ratio compares the total benefits granted to the CEO and the Executive Board members other than CEO with the total benefits granted to the Executives and all employees collectively who were employed on December 31, 2017. In order to ensure comparability for total benefits granted, only fixed compensation, one-year and multiyear variable compensation are considered. The Executives comprise the first and second management levels below the Executive Board, that is, the Global Executive Team (GET) and the Senior Executive Team (SET).

Ratio	Average Annual Compensation (in € thousands)	CEO	Executive Board (other than CEO)
		11,209	3,880
Executives	923	<b>12</b>	<b>4</b>
Employees including Executives	101	<b>111</b>	<b>39</b>

## Share-Based Payment Grants

The share-based payment amounts result from the following RSUs and PSUs under the LTI 2016 Plan.

### Grants for 2017

	Total Share Units	(RSU) Retention Share Units (40%)	(PSU) Performance Share Units (60%)	Grant Value per RSU at Time of Grant	Grant Value per PSU at Time of Grant	Total Grant Value at Time of Grant
	Quantity	Quantity	Quantity	€	€	€ thousands
Bill McDermott (CEO)	89,217	35,687	53,530	83.60	88.88	7,741
Robert Enslin	29,454	11,782	17,672	83.60	88.88	2,556
Adaire Fox-Martin (from May 1, 2017)	18,539	7,416	11,123	85.91	93.76	1,680
Michael Kleinemeier	27,619	11,048	16,571	83.60	88.88	2,396
Bernd Leukert	31,109	12,444	18,665	83.60	88.88	2,699
Jennifer Morgan (from May 1, 2017)	18,539	7,416	11,123	85.91	93.76	1,680
Luka Mucic	27,619	11,048	16,571	83.60	88.88	2,396
Stefan Ries	23,265	9,306	13,959	83.60	88.88	2,019
Steve Singh (until April 30, 2017)	29,454	11,782	17,672	83.60	88.88	2,556
<b>Total</b>	<b>294,815</b>	<b>117,929</b>	<b>176,886</b>			<b>25,723</b>

### Grants for 2016

	Total Share Units	(RSU) Retention Share Units (40%)	(PSU) Performance Share Units (60%)	Grant Value per RSU at Time of Grant	Grant Value per PSU at Time of Grant	Total Grant Value at Time of Grant
	Quantity	Quantity	Quantity	€	€	€ thousands
Bill McDermott (CEO)	122,423	48,969	73,454	66.52	64.57	8,000
Robert Enslin	40,417	16,167	24,250	66.52	64.57	2,641
Michael Kleinemeier	37,898	15,159	22,739	66.52	64.57	2,477
Bernd Leukert	42,687	17,075	25,612	66.52	64.57	2,790
Luka Mucic	37,898	15,159	22,739	66.52	64.57	2,477
Gerhard Oswald (until December 31, 2016)	31,924	12,770	19,154	66.52	64.57	2,086
Stefan Ries	23,987	9,595	14,392	65.77	62.61	1,532
Steve Singh (until April 30, 2017)	30,368	12,147	18,221	65.77	62.61	1,940
<b>Total</b>	<b>367,602</b>	<b>147,041</b>	<b>220,561</b>			<b>23,942</b>

## End-of-Service Benefits

### Regular End-of-Service Undertakings

#### Retirement Pension Plan

The following retirement pension agreements apply to the individual members of the Executive Board:

- Adaire Fox-Martin, Michael Kleinemeier, Bernd Leukert, Luka Mucic, and Stefan Ries are entitled to receive a retirement

pension when they reach the retirement age of 62 and retire from their Executive Board seat; or a disability pension depending on health examination if, before reaching the regular retirement age, they become subject to occupational disability or permanent incapacity. A surviving dependent's pension is paid on the death of a former member of the Executive Board. The disability pension is 100% of the vested retirement pension entitlement and is payable until the beneficiary's 62nd birthday, after which it is replaced by a retirement pension. The surviving dependent's pension is

60% of the retirement pension or vested disability pension entitlement at death. Entitlements are enforceable against SAP SE. Current pension payments are reviewed annually for adjustments and, if applicable, increased according to the surplus in the pension liability insurance. If service is ended before the retirement age of 62, pension entitlement is reduced in proportion as the actual length of service stands in relation to the maximum possible length of service. The applied retirement pension plan is contributory. The contribution is 4% of applicable compensation up to the applicable income threshold plus 14% of applicable compensation above the applicable income threshold. For this purpose, applicable compensation is 180% of annual base salary. The applicable income threshold is the statutory annual income threshold for the state pension plan in Germany (West), as amended from time to time.

- Bill McDermott has rights to future benefits under the portion of the pension plan for SAP America classified as “Non-

Qualified Retirement Plan” according to the U.S. Employee Retirement Income Security Act (ERISA). This “Non-Qualified” pension plan is a cash balance plan that provides either monthly pension payments or a lump sum on retirement. The pension becomes available from the beneficiary’s 65th birthday. Subject to certain conditions, the plan also provides earlier payment or invalidity benefits. The “Non-Qualified” pension plan closed with effect from January 1, 2009. Interest continues to be accrued on the earned rights to benefits within this plan.

- SAP made contributions to a third-party pension plan for Bill McDermott (2017: €686,200; 2016: €571,300), Robert Enslin (2017: €194,100; 2016: €34,700), and Jennifer Morgan (2017: €8,900). SAP’s matching contributions are based on payments by Bill McDermott, Robert Enslin, and Jennifer Morgan into this pension plan.

## Total Defined Benefit Obligations (DBO) and the Total Accruals for Pension Obligations to Executive Board Members

€ thousands	Bill McDermott (CEO)	Adaire Fox-Martin <sup>1)</sup> (from May 1, 2017)	Michael Kleinemeier <sup>1)</sup>	Bernd Leukert <sup>1)</sup>	Luka Mucic <sup>1)</sup>	Stefan Ries <sup>1)</sup>	Total
DBO January 1, 2016	1,382.5	–	29.7	252.4	232.7	–	1,897.3
Less plan assets market value January 1, 2016	–	–	25.4	240.2	205.8	–	471.4
<b>Accrued January 1, 2016</b>	<b>1,382.5</b>	<b>–</b>	<b>4.3</b>	<b>12.2</b>	<b>26.9</b>	<b>–</b>	<b>1,425.9</b>
DBO change in 2016	76.7	–	125.2	199.2	211.9	257.9	870.9
Plan assets change in 2016	–	–	156.0	149.5	141.8	116.7	564.0
DBO December 31, 2016	1,459.2	–	154.9	451.6	444.6	257.9	2,768.2
Less plan assets market value December 31, 2016	–	–	181.4	389.7	347.6	116.7	1,035.4
<b>Accrued December 31, 2016</b>	<b>1,459.2</b>	<b>–</b>	<b>–26.5</b>	<b>61.9</b>	<b>97.0</b>	<b>141.2</b>	<b>1,732.8</b>
DBO change in 2017	–148.7	93.5	117.0	132.9	141.3	86.7	422.7
Plan assets change in 2017	–	100.7	164.5	151.2	143.1	159.1	718.6
DBO December 31, 2017	1,310.5	93.5	271.9	584.5	585.9	344.6	3,190.9
Less plan assets market value December 31, 2017	–	100.7	345.9	540.9	490.7	275.8	1,754.0
<b>Accrued December 31, 2017</b>	<b>1,310.5</b>	<b>–7.2</b>	<b>–74.0</b>	<b>43.6</b>	<b>95.2</b>	<b>68.8</b>	<b>1,436.9</b>

<sup>1)</sup> The values shown here only reflect the pension entitlements that Adaire Fox-Martin, Michael Kleinemeier, Bernd Leukert, Luka Mucic, and Stefan Ries will receive from the retirement pension plan for Executive Board members.

The table below shows the annual pension entitlement earned during the Executive Board membership of each member of the Executive Board on reaching the scheduled retirement age of 62, based on entitlements from SAP under performance-based and salary-linked plans.

## Annual Pension Entitlement

€ thousands	Vested on December 31, 2017	Vested on December 31, 2016
Bill McDermott (CEO) <sup>1)</sup>	89.5	106.5
Adaire Fox-Martin (from May 1, 2017)	2.9	–
Michael Kleinemeier	9.8	5.2
Bernd Leukert	19.4	14.0
Luka Mucic	18.1	12.9
Stefan Ries	8.5	3.6

<sup>1)</sup> The rights shown here for Bill McDermott refer solely to rights under the pension plan for SAP America.

These are vested entitlements. To the extent that members continue to serve on the Executive Board and that therefore more contributions are made for them in the future, pensions actually payable at the scheduled retirement age will be higher than the amounts shown in the table.

## Postcontractual Non-Compete Provisions

Each Executive Board member's contract includes a 12-month postcontractual non-compete agreement. During this non-compete period, Executive Board members receive abstention payments corresponding to 50% of their average contractual compensation as members. This average is calculated on the basis of the preceding three years. Any other occupational income generated by the Executive Board member is deducted from their compensation.

The following table presents the theoretical amounts for the net present values of the postcontractual non-compete abstention payments. The calculation assumes the following:

- The Executive Board member leaves SAP at the end of their respective current contract term.
- Their final average contractual compensation prior to their departure equals their compensation in 2017.

Actual postcontractual non-compete payments will likely differ from these amounts depending on the time of departure and the compensation levels and target achievements at the time of departure.

## Net Present Values of the Postcontractual Non-Compete Abstention Payments

€ thousands	Contract Term Expires	Net Present Value of Postcontractual Non-Compete Abstention Payment <sup>1)</sup>
Bill McDermott (CEO)	3/31/2021	6,085
Robert Enslin	3/31/2021	2,426
Adaire Fox-Martin (from May 1, 2017)	4/30/2020	1,448
Michael Kleinemeier	12/31/2019	2,060
Bernd Leukert	3/31/2021	2,200
Jennifer Morgan (from May 1, 2017)	4/30/2020	1,376
Luka Mucic	3/31/2021	2,040
Stefan Ries	3/31/2019	1,869
<b>Total</b>		<b>19,504</b>

<sup>1)</sup> For the purpose of this calculation, the following discount rates have been applied: Bill McDermott 0.16% (2016: 0.22%); Robert Enslin 0.16% (2016: 0.22%); Adaire Fox-Martin 0.01%; Michael Kleinemeier –0.01% (2016: –0.026%); Bernd Leukert 0.16% (2016: 0.22%); Jennifer Morgan 0.01%; Luka Mucic 0.16% (2016: 0.22%); Stefan Ries –0.09% (2016: –0.01%).

## Early End-of-Service Undertakings Severance Payments

The standard contract for all Executive Board members provides that on termination before full term (for example, by the Company without cause where the member's appointment is revoked, where the member becomes occupationally disabled, or in connection with a change of control), SAP SE will pay to the member the outstanding part of the compensation target for the entire remainder of the term, appropriately discounted for early payment. Starting 2018, in accordance with the German Corporate Governance Code (GCGC), section 4.2.3, payments made to an Executive Board member due to early termination must not exceed twice the annual total compensation, or 150% of the severance payment cap in case of change of control. A member has no claim to that severance payment if he or she has not served SAP as a member of the Executive Board for at least one year or if he or she leaves SAP SE for reasons for which he or she is responsible. Upon the appointment of Adaire Fox-Martin and Jennifer Morgan to the Executive Board, the Supervisory Board abstained from the waiting period of one year in consideration of their long-term successful tenure with SAP.

If an Executive Board member's appointment to the Executive Board expires or ceases to exist because of, or as a consequence of, change or restructuring, or due to a change of control, SAP SE and each Executive Board member has the right to terminate the employment contract within eight weeks of the occurrence by giving six months' notice. A change of control is deemed to occur when:

- A third party is required to make a mandatory takeover offer to the shareholders of SAP SE under the German Securities Acquisition and Takeover Act;
- SAP SE merges with another company and becomes the subsumed entity;
- A control or profit transfer agreement is concluded with SAP SE as the dependent company.

An Executive Board member's contract can also be terminated before full term if their appointment as an Executive Board member of SAP SE is revoked in connection with a change of control.

## Postcontractual Non-Compete Provisions

Abstention compensation for the postcontractual non-competes period as described above is also payable on early contract termination.

## Permanent Disability

In case of permanent disability, the contract will end at the end of the quarter in which the permanent inability to work was determined. The Executive Board member receives, in addition to a potential disability pension under the retirement plan described above, the monthly basic salary (fixed compensation) for a further 12 months starting from the date the permanent disability is determined.

## Payments to Executive Board Members Retiring in 2017

Steve Singh resigned from his position as Executive Board member on his own accord with effect from April 30, 2017, therefore no severance payment was made. The postcontractual non-competes provision was canceled without compensation.

## Payments to Former Executive Board Members

In 2017, we paid pension benefits of €1,997,000 to Executive Board members who had retired before January 1, 2017 (2016: €1,667,000). At the end of the year, the DBO for former Executive Board members was €39,993,100 (2016: €33,935,000). Plan assets of €31,944,100 are available to meet these obligations (2016: €26,053,000).

## Executive Board Members' Holdings of Long-Term Incentives

Members of the Executive Board hold or held share-based payment rights throughout the year under the LTI 2016 Plan, the RSU Milestone Plan 2015, and the SAP SOP 2010 (the last two were granted in previous years). For information about the terms and details of these programs, see the Notes to the Consolidated Financial Statements, [Note \(27\)](#).

### LTI 2016 Plan

The table below shows Executive Board members' holdings, on December 31, 2017, of Share Units issued to them under the LTI 2016 plan.

#### LTI 2016 Plan

Quantity of Share Units	Year Granted	Holding on January 1, 2017	Granted		Forfeited <sup>1)</sup>	Balanced Performance Share Units <sup>2)</sup>	Holding on December 31, 2017
			Retention Share Units (40%)	Performance Share Units (60%)			
Bill McDermott (CEO)	2017	0	35,687	53,530	0	0	89,217
	2016	122,423	0	0	0	0	122,423
Robert Enslin	2017	0	11,782	17,672	0	0	29,454
	2016	40,417	0	0	0	0	40,417
Adaire Fox-Martin (from May 1, 2017)	2017	0	7,416	11,123	0	0	18,539
Michael Kleinemeier	2017	0	11,048	16,571	0	0	27,619
	2016	37,898	0	0	0	0	37,898
Bernd Leukert	2017	0	12,444	18,665	0	0	31,109
	2016	42,687	0	0	0	0	42,687
Jennifer Morgan (from May 1, 2017)	2017	0	7,416	11,123	0	0	18,539
Luka Mucic	2017	0	11,048	16,571	0	0	27,619
	2016	37,898	0	0	0	0	37,898
Stefan Ries	2017	0	9,306	13,959	0	0	23,265
	2016	23,987	0	0	0	0	23,987
Steve Singh (until April 30, 2017)	2017	0	11,782	17,672	27,035	12,050	14,469
	2016	30,368	0	0	20,266	0	10,102
<b>Total</b>		<b>335,678</b>	<b>117,929</b>	<b>176,886</b>	<b>47,301</b>	<b>12,050</b>	<b>595,242</b>

<sup>1)</sup> Forfeiture according to leaver rules

<sup>2)</sup> To balance disadvantages from leaver rules under the LTI 2016 Plan

## RSU Milestone Plan 2015

The table below shows the Executive Board members' holdings, on December 31, 2017, of RSUs issued to them under the RSU Milestone Plan 2015. The plan is a cash-settled long-term incentive scheme with a payout subsequent to a performance period of one year (after which the RSUs become non-forfeitable) and an additional holding period of three years. The RSU Milestone Plan 2015 consists of four plan tranches to be issued with respect to the calendar years 2012 through 2015. The RSUs granted in 2014 have a remaining term of 0.08 years; and the RSUs granted in 2015 have a remaining term of 1.08 years.

### RSU Milestone Plan 2015

Quantity of RSUs	Year Granted	Holding on January 1, 2017	Exercised	Holding on December 31, 2017
Bill McDermott (CEO)	2015	113,667	0	113,667
	2014	59,488	0	59,488
	2013	68,137	68,137	0
Robert Enslin	2015	39,985	0	39,985
	2014	14,148	0	14,148
Michael Kleinemeier	2015	5,221	0	5,221
Bernd Leukert	2015	41,578	0	41,578
	2014	14,148	0	14,148
Luka Mucic	2015	41,130	0	41,130
	2014	10,757	0	10,757
<b>Total</b>		<b>408,259</b>	<b>68,137</b>	<b>340,122</b>

## SAP SOP 2010

The table below shows the Executive Board members' holdings, on December 31, 2017, of virtual share options issued to them under the SAP SOP 2010 since its inception. The strike price for an option is 115% of the base price. The issued options have a term of seven years and can only be exercised on specified dates after the vesting period. The options issued in 2010 were exercisable beginning in September 2014, and the options issued in 2011 were exercisable beginning in June 2015.

### SAP SOP 2010 Virtual Share Options

	Year Granted	Holding on January 1, 2017		Strike Price per Option €	Exercised Quantity	Price on Exercise Date €	Holding on December 31, 2017	
		Quantity	Remaining Term (in Years)				Quantity	Remaining Term (in Years)
Bill McDermott (CEO)	2010	135,714	0.7	40.80	135,714	85.23	0	
	2011	112,426	1.4	48.33	112,426	85.23	0	
<b>Total</b>		<b>248,140</b>			<b>248,140</b>		<b>0</b>	

## Total Expense for Share-Based Payment

Total expense for the share-based payment plans of Executive Board members was recognized as follows.

### Total Expense for Share-Based Payment

€ thousands	2017	2016
Bill McDermott (CEO)	7,684.4	6,525.3
Robert Enslin	2,181.9	1,185.8
Adaire Fox-Martin (from May 1, 2017)	309.7	-
Michael Kleinemeier	1,509.8	635.2
Bernd Leukert	2,287.4	1,237.2
Jennifer Morgan (from May 1, 2017)	309.7	-
Luka Mucic	2,059.0	1,123.5
Stefan Ries	1,049.3	367.5
Steve Singh (until April 30, 2017)	1,676.5	465.3
<b>Total</b>	<b>19,067.7</b>	<b>11,539.8</b>

The expense is recognized in accordance with IFRS 2 (Share-Based Payments) and consists exclusively of obligations arising from Executive Board activities.

## Executive Board: Other Information

We did not grant any compensation advance or credit to, or enter into any commitment for the benefit of, any member of our Executive Board in 2017 or the previous year.

As far as the law permits, SAP SE and its affiliated companies in Germany and elsewhere indemnify and hold harmless their respective directors and officers against and from the claims of third parties. To this end, we maintain directors' and officers' (D&O) group liability insurance. The policy is annual and is renewed from year to year. The insurance covers the personal

liability of the insured group for financial loss caused by its managerial acts and omissions. The current D&O policy includes an individual deductible for Executive Board members of SAP SE as required by section 93 (2) of the German Stock Corporation Act.

## Compensation for Supervisory Board Members

### Compensation System

Supervisory Board members' compensation is governed by our Articles of Incorporation, section 16.

Each member of the Supervisory Board receives, in addition to the reimbursement of their expenses, an annual basic compensation of €165,000. The chairperson receives €275,000 and the deputy chairperson €220,000 annually. In addition, we reimburse members of the Supervisory Board for the value-added tax payable on their compensation.

For membership of the Audit Committee, Supervisory Board members receive an additional fixed annual compensation of €16,500, and for membership of any other Supervisory Board committee €11,000, provided that the committee concerned has met in the year. The chairperson of the Audit Committee receives €27,500, and the chairpersons of the other committees receive €22,000. The fixed remuneration is payable after the end of the year.

Any members of the Supervisory Board having served for less than the entire year receive one-twelfth of the annual remuneration for each month of service commenced. This also applies to the increased compensation of the chairperson and the deputy chairperson(s) and to the remuneration for the chairperson and the members of a committee.



## Supervisory Board Members' Compensation in 2017

€ thousands	2017			2016		
	Fixed Compensation	Compensation for Committee Work	Total	Fixed Compensation	Compensation for Committee Work	Total
Prof. Dr. h.c. mult. Hasso Plattner (chairperson)	275.0	88.0	363.0	275.0	88.0	363.0
Margret Klein-Magar (deputy chairperson)	220.0	27.5	247.5	220.0	33.0	253.0
Pekka Ala-Pietila	165.0	33.0	198.0	165.0	33.0	198.0
Panagiotis Bissiritsas	165.0	38.5	203.5	165.0	38.5	203.5
Martin Duffek	165.0	33.0	198.0	165.0	27.5	192.5
Aicha Evans (from July 1, 2017)	82.5	11.0	93.5	NA	NA	NA
Prof. Anja Feldmann	165.0	22.0	187.0	165.0	22.0	187.0
Prof. Dr. Wilhelm Haarmann	165.0	44.0	209.0	165.0	44.0	209.0
Andreas Hahn	165.0	22.0	187.0	165.0	22.0	187.0
Prof. Dr. Gesche Joost	165.0	22.0	187.0	165.0	22.0	187.0
Lars Lamadé	165.0	22.0	187.0	165.0	22.0	187.0
Bernard Liautaud	165.0	33.0	198.0	165.0	33.0	198.0
Christine Regitz	165.0	22.0	187.0	165.0	22.0	187.0
Dr. Erhard Schipporeit	165.0	33.0	198.0	165.0	27.5	192.5
Robert Schuschnig-Fowler	165.0	16.5	181.5	165.0	11.0	176.0
Dr. Sebastian Sick	165.0	22.0	187.0	165.0	22.0	187.0
Jim Hagemann Snabe (until June 30, 2017)	82.5	11.0	93.5	165.0	22.0	187.0
Pierre Thiollet	165.0	11.0	176.0	165.0	11.0	176.0
Prof. Dr.-Ing. Dr.-Ing. E.h. Klaus Wucherer	165.0	16.5	181.5	165.0	16.5	181.5
<b>Total</b>	<b>3,135.0</b>	<b>528.0</b>	<b>3,663.0</b>	<b>3,135.0</b>	<b>517.0</b>	<b>3,652.0</b>

In 2017, we received services from members of the Supervisory Board (including services from employee representatives on the Supervisory Board in their capacity as employees of SAP) in the amount of €1,269,700 (2016: €1,040,400). This amount includes fees paid in 2017 to Linklaters LLP in Frankfurt am Main, Germany (of which Supervisory Board member Wilhelm Haarmann is a partner), of €106,900 (2016: €0).

### Long-Term Incentives for the Supervisory Board

We do not offer members of the Supervisory Board share-based payment for their Supervisory Board work. Any share-based payment awards received by employee-elected members relate to their position as SAP employees and not to their work on the Supervisory Board.

### Supervisory Board: Other Information

We did not grant any compensation advance or credit to, or enter into any commitment for the benefit of, any member of our Supervisory Board in 2017 or the previous year.

Hasso Plattner, the chairperson of the Supervisory Board, entered into a consulting contract with SAP after joining the Supervisory Board in May 2003. The contract does not provide for any compensation. The only cost we incurred under the contract was the reimbursement of expenses.

As far as the law permits, we indemnify Supervisory Board members against, and hold them harmless from, claims brought by third parties. To this end, we maintain directors' and officers' (D&O) group liability insurance. The 2017 D&O policy did not include an individual deductible for Supervisory Board members as envisaged in the German Corporate Governance Code (GCGC). Starting 2018, in accordance with section 3.8 of the GCGC, each member of the Supervisory Board will bear a deductible of at least 10% of any loss. The deductible is capped at 1.5 times a member's fixed annual compensation.

# Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the Consolidated Financial Statements give a true and fair view of the assets, finances, and operating results of the SAP Group, and the management report of the Group and SAP SE includes a fair review of the development and performance of the business and the position of the Group and SAP SE, together with a description of the principal opportunities and risks associated with the expected development of the Group and SAP SE.

Walldorf, February 21, 2018

SAP SE

Walldorf, Germany

Executive Board of SAP SE

Bill McDermott

Robert Enslin

Adaire Fox-Martin

Christian Klein

Michael Kleinemeier

Bernd Leukert

Jennifer Morgan

Luka Mucic

Stefan Ries

# Independent Auditor's Report<sup>1)</sup>

To SAP SE, Walldorf

## Report on the Audit of the Consolidated Financial Statements and of the Group Management Report

### Opinions

We have audited the consolidated financial statements of SAP SE, Walldorf, and its subsidiaries (the Group), which comprise the consolidated statements of financial position as at December 31, 2017, consolidated income statements, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the financial year from January 1, 2017, to December 31, 2017, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In addition, we have audited the combined group management report by the SAP Group and the management report of SAP SE, Walldorf ("Group Management Report") for the financial year from January 1, 2017 to December 31, 2017.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch: German Commercial Code], as well as the IFRSs as adopted by the International Accounting Standards Board and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at December 31, 2017, and of its financial performance for the financial year from January 1, 2017 to December 31, 2017, and
- the accompanying Group Management Report as a whole provides an appropriate view of the Group's position. In all material respects, this Group Management Report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the Group Management Report.

### Basis for the Opinions

We conducted our audit of the consolidated financial statements and of the Group Management Report in accordance with Section 317 HGB and the EU Audit Regulation No. 537/2014 (referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW) as well as in supplementary compliance with the International Standards on Auditing (ISAs) and guidelines of the Public Company Accounting Oversight Board (United States).

Our responsibilities under those requirements, principles and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the Group Management Report.

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<sup>1)</sup> The following translated auditor's report has been issued in German language.

## Key Audit Matters in the Audit of Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1, 2017 to December 31, 2017. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, we do not provide a separate opinion on these matters.

### Revenue

Refer to note (3b) – Relevant Accounting Policies, note (3c) – Management Judgments and Sources of Estimation Uncertainty, note (3e) – New Accounting Standards Not Yet Adopted, and note (5) – Revenue and Group Management Report, section Risk Management and Risks.

### The Financial Statement Risk

In the financial year 2017 SAP generated revenue of EUR 23.5 billion, of which EUR 15.8 billion relate to revenues from software licenses and support. For sales of software licenses and support services IFRS do not provide specific guidance on recognizing revenue. SAP defined detailed policies, procedures and processes to manage the accounting for its software arrangements, which are also described in the notes. SAP's revenue generating transactions and, consequently, SAP's revenue recognition policies are complex. Applying them often requires significant judgments, such as in the allocation of revenue from customer contracts to multiple deliverables and the application of the revenue recognition criteria under IAS 18, e.g., assessing whether the significant risks and rewards have been transferred to the buyer and whether the amount of revenue can be measured reliably. The risk for the consolidated financial statements relates to the existence and valuation of revenue.

SAP derives its revenue from different revenue classes. In anticipation of the forthcoming adoption of IFRS 15, SAP made changes to its revenue accounting processes including the implementation of a new Revenue Accounting and Reporting software solution which aimed at increasing the level of automation in SAP's revenue accounting processes. The implementation of the software solution and the related process changes bears a significant risk of error. In response to this significant risk of error, SAP established processes and manual controls to ensure the completeness, accuracy and existence of revenue in the consolidated financial statements. An internal task force was established by SAP to prevent and remediate issues. The additional processes and controls focused on agreeing revenues processed through the Revenue Accounting and Reporting software solution to underlying source documentation such as sales orders or billing plans. Thresholds

were determined to focus the control performance on significant deviations.

The new revenue recognition standard (IFRS 15) is effective only beginning January 1, 2018. But IAS 8 stipulates for the consolidated financial statements preceding its effective date disclosures about the to-be adopted standard, including known or reasonably estimable information relevant to assessing the possible impact of applying the new standard in the year of initial application. SAP developed new revenue recognition policies reflecting the requirements of IFRS 15 and adjusted the relevant business processes to these new policies. The disclosures about the expected impact require estimates which are based on various assumptions. The financial statement risk for the consolidated financial statements relates to the reasonableness of the estimate of the expected impact.

### Our Response

On software revenue recognition, we evaluated the compliance of SAP's accounting policies with the IFRS Framework and the individual applicable IFRSs. We considered the design and tested the operating effectiveness of the key controls implemented by SAP on the identification of multiple-element arrangements, the identification of deliverables and separate units of accounting and the identification of fair value for all relevant deliverables other than on premise software (due to the residual method being applied). For all software arrangements that we considered to be individually significant and for a sample of the remaining software arrangements, we also:

- obtained an understanding of the transaction through inspection of the underlying contractual agreements and other related documents as well as discussions with SAP's accounting and/or sales representatives;
- obtained external confirmations of the key terms and conditions from the respective customers to corroborate the information relevant for the accounting that we received from SAP;
- assessed whether SAP appropriately identified all separate units of accounting and allocated the transaction price to such units based on either the relative fair value method or the residual method, as applicable, using the established fair values; and
- evaluated whether the revenue recognition policies applicable to each separate unit of accounting were applied appropriately to ensure that revenue is recognized in the correct period.

We evaluated the fair value assumptions for each deliverable that typically qualifies as a separate unit of accounting in SAP's multiple-element arrangements by assessing the appropriateness of the methodology applied, testing mathematical accuracy of the underlying calculations and testing selections to corroborate the data underlying SAP's

calculations. We also assessed the appropriateness of the related disclosures in the consolidated financial statements.

On the implementation of the new Revenue Accounting and Reporting software solution and the related process changes we tested the design and operating effectiveness of the manual controls that were implemented to agree revenues processed through the Revenue Accounting and Reporting software solution to underlying source documentation. In this regard, we also assessed whether the reports used by SAP to perform the controls were complete and accurate and evaluated the results of management's testing. For the majority of software support revenue, we compared the actual support revenue with the support revenue that is expected based on last year's support revenue, the loss rate of last year's support contracts and the current year software sales that trigger additional support revenue. For all other significant revenue streams we selected samples to determine the completeness, accuracy and existence of revenue.

On the disclosures relating to the expected impact of applying the new standard on revenue recognition we assessed whether the newly developed revenue recognition policies are in accordance with IFRS 15. We tested the internal controls over the estimation of the impact of these new policies and processes and assessed the completeness and accuracy of the estimates on the material differences to the existing policies.

#### **Our Observations**

SAP has developed an adequate framework for determining the accounting treatment for its revenue. For the vast majority of the software arrangements entered into during 2017, it was clear which of SAP's revenue recognition policies should be applied. Where there was room for interpretation, SAP's judgment was balanced and appropriate. SAP established processes and manual controls to ensure the completeness, accuracy and existence of revenue in the consolidated financial statements. The assumptions used in the estimation of the impact of applying the new revenue standard are reasonable.

#### **Measurement of the provision for income tax exposures**

Refer to note (3b) – Relevant Accounting Policies, note (3c) – Management Judgments and Sources of Estimation Uncertainty, note (10) – Income Taxes and Group Management Report, section Risk Management and Risks.

#### **The Financial Statement Risk**

SAP operates in multiple tax jurisdictions with complexities of transfer pricing, changing tax laws, and intercompany financing transactions. The determination of provisions for tax contingencies requires SAP to make judgments on tax issues and develop estimates regarding SAP's exposure to tax risks. SAP regularly engages external experts to provide tax opinions

to support their own risk assessment. The risk for the consolidated financial statements relates to the appropriateness of the measurement of the provision for income tax exposures.

#### **Our Response**

We involved our tax specialists to evaluate the tax opinions of the external experts SAP engaged. We assessed the competency, skill and objectivity of the external experts as well as the opinions they prepared. We evaluated correspondence with the responsible tax authorities as well as the assumptions used to determine tax provisions based on our knowledge and experiences of the current application of the relevant legislation by authorities and courts. Through our international network we involved tax specialists with the appropriate knowledge on the respective local tax rules and regulations who reported the results of their assessment to us.

#### **Our Observations**

SAP's judgments as to the amounts recognized as tax provisions for income tax exposures as at December 31, 2017 are appropriate.

#### **Recoverability of the carrying amount of goodwill for SAP Business Network**

Refer to note (3c) – Management Judgments and Sources of Estimation Uncertainty, note (15) – Goodwill and Intangible Assets.

#### **The Financial Statement Risk**

SAP performed the annual goodwill impairment test at the level of its operating segments as there are no lower levels within SAP at which goodwill is monitored for internal management purposes. SAP's acquisitions executed in prior periods led to a material goodwill in the SAP Business Network Segment in which SAP mainly develops, markets and sells its SAP Ariba, SAP Fieldglass and SAP Concur cloud offerings. Goodwill allocated to the SAP Business Network is material as of December 31, 2017 (15.6% of consolidated balance sheet total). The respective impairment test is complex and involves significant judgment. The key assumptions relate to the budgeted revenue growth, budgeted operating margins, pre-tax discount rates including the determination of the peer group and terminal growth rates.

The risk for the consolidated financial statements relates to the appropriateness of the determination and recognition of impairments.

#### **Our Response**

SAP has implemented controls designed to ensure that the calculation of the recoverable amount for SAP Business Network is appropriate. We tested the design and operating

effectiveness of these controls. We involved our valuation specialists to assess the valuation methodologies applied and key assumptions used in measuring the fair value less cost of disposal and to test the mathematical accuracy of the discounted cash flows and other valuation models. We evaluated SAP's assumptions by comparing the fair value estimates to our own expectations and performed independent sensitivity analysis for each key assumption.

### **Our Observations**

The approaches underlying the impairment testing of the goodwill are appropriate and consistent with the applicable accounting and valuation principles. SAP applied a balanced set of assumptions in determining the recoverable amount.

### **Other Information**

The Executive Board of SAP SE is responsible for the other information. The other information comprises the Integrated Report published on the website of SAP SE, including the Annual Report on Form 20-F, except for the audited consolidated financial statements and the Group Management Report and our auditor's report thereon.

Our opinions on the consolidated financial statements and on the Group Management Report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the Group Management Report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

In addition, we were engaged to perform an independent assurance engagement on selected qualitative and quantitative sustainability disclosures of the integrated report 2017. In regard to the nature, extent and conclusions of this independent assurance engagement we refer to our Independence Assurance Report dated on February 21, 2018.

## **Responsibilities of the Executive Board and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report**

The Executive Board of SAP SE is responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB as well as IFRS as adopted by the International Accounting Standards Board and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the Executive Board is responsible for such internal control as the Executive Board has determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Executive Board is responsible for assessing the Group's ability to continue as a going concern. The Executive Board also has the responsibility for disclosing, as applicable, matters related to going concern. In addition, the Executive Board is responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the Executive Board is responsible for the preparation of the Group Management Report, that as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with the German legal requirements and appropriately presents the opportunities and risks of future development. In addition, the Executive Board is responsible for such arrangements and measures (systems) as the Executive Board has considered necessary to enable the preparation of the Group Management Report that is in accordance with the applicable German legal requirements, the German Accounting Standards number 17 and 20 (GAS 17, GAS 20) and the International Financial Reporting Standard (IFRS) Practice Statement Management Commentary and to be able to provide sufficient appropriate evidence for the assertions in the Group Management Report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the Group Management Report.

## Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the Group Management Report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the Group Management Report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) as well as in supplementary compliance with ISA and guidelines of the Public Company Accounting Oversight Board (United States) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this Group Management Report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the Group Management Report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the Group Management Report in order to design audit procedures that are appropriate in the circumstances.
- Evaluate the appropriateness of accounting policies used by the Executive Board and the reasonableness of accounting estimates made by the Executive Board and related disclosures.
- Conclude on the appropriateness of the Executive Board's use of the going concern basis of accounting and, based on

the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the Group Management Report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU as well as with IFRSs as adopted by the International Accounting Standards Board and the additional requirements of German commercial law pursuant to Section 315e(1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the Group Management Report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the Group Management Report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the Executive Board in the Group Management Report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by Executive Board as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Supervisory Board with a statement that we have complied with relevant independence requirements, and communicate with them all relationships and other matters that

may reasonably be thought to bear on our independence, and where applicable the related safeguards.

From the matters communicated with the Supervisory Board, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report, unless law or regulation precludes public disclosure about the matter.

## **Other Legal and Regulatory Requirements**

### **Report on Internal Control over Financial Reporting in the Consolidated Financial Statements pursuant to PCAOB**

#### **Opinion on Internal Control over Financial Reporting in the Consolidated Financial Statements**

We have audited the internal control over financial reporting in the consolidated financial statements of SAP SE, Walldorf, and its subsidiaries in place as at December 31, 2017. This control system is based on criteria set out in the Internal Control – Integrated Framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO) (version of 2013).

In our opinion, SAP maintained, in all material respects, effective internal control over financial reporting in the consolidated financial statements as at December 31, 2017 based on the criteria set out in the Internal Control – Integrated Framework issued by COSO (in the version of 2013).

#### **Executive Board's and Supervisory Board's Responsibility for the Internal Control over Financial Reporting in the Consolidated Financial Statements**

SAP SE's Executive Board is responsible for maintaining an effective internal control over financial reporting in the consolidated financial statements and assessing its effectiveness, which is included in the Executive Board's report on the internal control over consolidated financial reporting.

A company's internal control over financial reporting in the consolidated financial statements is a process designed to provide reasonable assurance regarding the reliability of financial reporting in the consolidated financial statements and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A

company's internal control over financial reporting in the consolidated financial statements includes policies and procedures to (1) ensure an accounting system that in reasonable detail accurately and fairly reflects the transactions and dispositions of the company's assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect material misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The Supervisory Board is responsible for overseeing the Group's internal control over financial reporting in the consolidated financial statements

#### **Auditor's Responsibility for the Internal Control over Financial Reporting in the Consolidated Financial Statements**

Our responsibility is to express an opinion on the internal control over financial reporting in the consolidated financial statements based on our audit. We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether effective internal control over financial reporting in the consolidated financial statements was maintained in all material respects. Our audit of internal control over financial reporting in the consolidated financial statements included obtaining an understanding of internal control over financial reporting, assessing the risk of material deficiencies in internal control, testing and evaluating the design and operating effectiveness of internal control based on this assessment, and performing such other procedures as we considered necessary in the circumstances.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### **Further Information pursuant to Article 10 of the EU Audit Regulation**

We were elected as group auditor by the annual general meeting on May 10, 2017. We were engaged by the Chairman of the Audit Committee of the Supervisory Board of SAP SE on July 12, 2017.



We have been the group auditor of SAP SE without interruption since the financial year 2002.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

In addition to the financial statement audit, we have provided to group entities the following services that are not disclosed in the consolidated financial statements or in the Group Management Report:

In addition to the consolidated financial statements, we audited the financial statements of SAP SE and performed various financial statement audits at subsidiaries. Furthermore, other assurance services required by law or on a contractual basis were performed, such as an assurance engagement on selected qualitative and quantitative sustainability disclosures of the Integrated Report 2017, an EMIR audit pursuant to section 20 of German Securities Trading Act [WpHG] and audits of software products.

## **German Public Auditor Responsible for the Engagement**

The German Public Auditor responsible for the engagement is Dr. Bert Böttcher.

Mannheim, February 21, 2018

KPMG AG  
Wirtschaftsprüfungsgesellschaft  
[Original German version signed by:]

Dr. Böttcher  
Wirtschaftsprüfer  
[German Public Auditor]

Herold  
Wirtschaftsprüferin  
[German Public Auditor]

# Combined Management Report

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# General Information About This Management Report

## Basis of Presentation

This combined group management report by the SAP Group (collectively, “we,” “us,” “our,” “SAP,” “Group,” or “Company”) and the management report of SAP SE have been prepared in accordance with sections 289, 289a, 289f, 315, 315a, and 315d of the German Commercial Code and German Accounting Standards (GAS) No. 17 and 20. The management report is also a management commentary complying with the International Financial Reporting Standards (IFRS) Practice Statement “Management Commentary”.

German Commercial Code, sections 289b and 315b, require us to prepare, for both SAP SE and SAP Group, a non-financial statement within the management report or a non-financial report outside of the management report in which we report on social, environmental, and other non-financial matters. The required disclosures can but do not need to be a separate section in our management report. Instead, the information required can also be provided, in an integrated manner, in the different sections of the management report. SAP released a non-financial report outside of the combined management report but within our online integrated report with references to the sections of our combined management report. This non-financial report is available at

<http://www.sap.com/investors/sap-2017-combined-non-financial-report>. We believe that this approach is best aligned with SAP’s integrated reporting strategy, also taking into account that all non-financial information stipulated in the German Commercial Code, sections 315c and 289c, that is relevant to understand SAP’s development, performance of the business, and the position of the Group and SAP SE is included in our combined management report.

All of the information in this report relates to the situation as at December 31, 2017, or the fiscal year ended on that date, unless otherwise stated.

## Forward-Looking Statements

This management report contains forward-looking statements and information based on the beliefs of, and assumptions made by, our management using information currently available to them. Any statements contained in this report that are not historical facts are forward-looking statements as defined in the U.S. Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements on our current

expectations, assumptions, and projections about future conditions and events. As a result, our forward-looking statements and information are subject to uncertainties and risks, many of which are beyond our control. If one or more of these uncertainties or risks materializes, or if management’s underlying assumptions prove incorrect, our actual results could differ materially from those described in or inferred from our forward-looking statements and information. We describe these risks and uncertainties in the *Risk Management and Risks* section.

The words “aim,” “anticipate,” “assume,” “believe,” “continue,” “could,” “counting on,” “is confident,” “development,” “estimate,” “expect,” “forecast,” “future trends,” “guidance,” “intend,” “may,” “might,” “outlook,” “plan,” “project,” “predict,” “seek,” “should,” “strategy,” “want,” “will,” “would,” and similar expressions as they relate to us are intended to identify such forward-looking statements. Such statements include, for example, those made in the *Operating Results* section, our quantitative and qualitative disclosures about market risk pursuant to the International Financial Reporting Standards (IFRS), namely IFRS 7 and related statements in our Notes to the Consolidated Financial Statements; *Expected Developments and Opportunities* section; *Risk Management and Risks* section; and other forward-looking information appearing in other parts of this report. To fully consider the factors that could affect our future financial results, both this report and our Annual Report on Form 20-F should be considered, as well as all of our other filings with the U.S. Securities and Exchange Commission (SEC). Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date specified or the date of this report. We undertake no obligation to publicly update or revise any forward-looking statements as a result of new information that we receive about conditions that existed upon issuance of this report, future events, or otherwise unless we are required to do so by law.

This report includes statistical data about the IT industry and global economic trends that comes from information published by sources including International Data Corporation (IDC), Gartner, the European Central Bank (ECB), and the International Monetary Fund (IMF). This type of data represents only the estimates of IDC, Gartner, ECB, IMF, and other sources of industry data. SAP does not adopt or endorse any of the statistical information provided by sources such as IDC, Gartner, ECB, IMF, or other similar sources that is contained in this

report. The data from these sources is subject to risks and uncertainties, and subject to change based on various factors, including those described above, in the *Risk Management and Risks* section, and elsewhere in this report. These and other factors could cause our results to differ materially from those expressed in the estimates made by third parties and SAP. We caution readers not to place undue reliance on this data.

# Overview of the SAP Group

>76%

of worldwide transaction revenue touches an SAP system

>378,000

SAP customers worldwide

>180

countries where SAP customers are located

Our vision is to help the world run better and improve people's lives. Together with our broad ecosystem of partners, this comes to life as we help our customers master complexity as well as innovate and transform to become sustainable intelligent businesses. SAP drives innovation in numerous fields of the digital economy by using technology such as Internet of Things, machine learning, and artificial intelligence. For more information about our vision and strategy, see the *Strategy and Business Model* section.

Founded in 1972, SAP is a global company headquartered in Walldorf, Germany. Our legal corporate name is SAP SE. SAP is the market leader in enterprise application software<sup>2</sup> and also the leading analytics and business intelligence company. Globally, more than 76% of all transaction revenue touches an SAP system. In 2017, SAP was ranked as the most sustainable software company in the Dow Jones Sustainability Index for the eleventh consecutive year. With more than 378,000 customers in more than 180 countries, the SAP Group has a global presence and employs more than 88,000 people.

Our ordinary shares are listed on the Frankfurt Stock Exchange. American Depositary Receipts (ADRs) representing SAP SE ordinary shares are listed on the New York Stock Exchange (NYSE). SAP is a member of Germany's DAX, the Dow Jones EURO STOXX 50 and the Dow Jones Sustainability Indexes. As at December 31, 2017, SAP was the most valuable company in the DAX based on market capitalization and the 60th most valuable company in the world.

As at December 31, 2017, SAP SE directly or indirectly controlled a worldwide group of 227 subsidiaries that develop, distribute, and provide our products, solutions, and services. For a list of our subsidiaries, associates, and other equity investments, see the Notes to the Consolidated Financial Statements, *Note (34)*.

<sup>2</sup> Enterprise application software is computer software specifically developed to support and automate business processes.

# Strategy and Business Model

## The Intelligent Enterprise

### Opportunity in a Time of Disruption

We are living in a time of unprecedented digital disruption that is transforming societies globally and changing how we work and interact with each other. Innovations in technology, such as the Internet of Things (IoT), Big Data, blockchain, artificial intelligence, and machine learning are disrupting entire industries. In this era, the key question our customers are asking is how they can apply these technological innovations to not just survive but also to thrive.

Technological innovation is necessary to tackle some of the world's most intractable problems, which are often driven by complexity. With innovative solutions from SAP, we can empower our customers to create a better economy, society, and environment for the world. Together with our vibrant ecosystem of partners, we have an opportunity to execute our vision to "help the world run better and improve people's lives."

We continue to help our more than 378,000 customers run at their best. Our strategy to be the **most innovative cloud company powered by SAP HANA**, focuses on how we can help our customers innovate faster and drive successful business outcomes.

### Our Vision for the Intelligent Enterprise

In the digital era, data is the "new currency" in an enterprise. Businesses that are able to harness their data faster and more effectively will be the ones that succeed through disruption.

As the world's largest enterprise software company, SAP offers perspective on the massive scale and power of data. Our customers have a vast amount of enterprise data assets flowing through our SAP ERP and cloud applications and business networks every day. Our enterprise resource planning applications touch 76% of global transaction revenue, we run the world's largest business network with over US\$1 trillion in commerce annually, and we have over 150 million users of our cloud applications.

SAP software and technologies can deliver deep value to our customers by providing the tools to harness the power of the data flowing through their systems. Our vision for the intelligent enterprise is an event-driven, real-time business powered by

intelligent applications and platforms. In this vision, enterprise data sits at the core of a virtuous cycle whereby:

- Enterprises will combine proprietary data assets from their internal systems of record with real-time, external data feeds to train intelligent algorithms.
- Intelligent algorithms will be embedded into core business processes to enable enterprises to increase their awareness of events and respond in real time.
- As the cycle repeats itself, enterprises will produce even richer datasets based on business outcomes that can be used to train the next generation of increasingly intelligent algorithms.

By embedding intelligence in core processes, businesses of all sizes will benefit from the automation of routine tasks and improved decision-making driven by advanced analytics.

Combining intelligent algorithms with empowered employees will allow companies to free up scarce resources to focus on what matters most – driving value for their customers. In this way, we can fulfill our promise of enabling our customers to Run Simple, while helping the world run better and improving people's lives.

### Framework for the Intelligent Enterprise

SAP delivers software and technologies addressing the three core elements of the intelligent enterprise:

- An **intelligent cloud suite** of applications for every line of business. This includes our next-generation ERP in the cloud, as well as solutions for manufacturing, digital supply chain, customer experience, networks, spend management, and people management. The intelligent cloud suite will be integrated and differentiated by industry-specific business processes for integrated scenarios (for example, order to cash, procure to pay, and so on). It will be enhanced by machine learning algorithms that deliver intelligence in the workflow and drive better business outcomes including profitability and customer satisfaction. While integrated, the suite will also be modular to enable lean consumption. We will extend it with business networks that enable our customers to see events happening in real time and to further automate business processes by creating information transparency across the value chain.

- A **digital platform** to help customers manage data orchestration and system integration across their entire business:
  - Real-time visibility into distributed data silos using the next generation of **data management** solutions. Our customers can tap into the data sitting in their core business applications, combined with third-party data streams and data from connected devices to radically simplify data management. SAP applications will be data-driven and will embed intelligence across their core business processes.
  - An open **cloud platform** for new application development, extensions, and integration across heterogeneous environments. Using the cloud platform, our customers can extend the business processes of our intelligent cloud suite and build innovations that go beyond standard business processes. SAP Cloud Platform will also be the foundation for a vibrant, open ecosystem that can extend the power of SAP applications to drive customer value.
- **Intelligent systems**, such as IoT, artificial intelligence, and machine learning, as well as analytics, help customers to optimize their core business processes and reinvent their business models. This intelligence is integrated across applications and helps SAP to deliver individual outcomes to every customer. Combined with a design thinking approach and SAP's industry thought leadership, customers can now reimagine new business models and deliver radically new customer experiences leveraging the power of intelligent technologies.

By embracing all the components of the intelligent enterprise, we firmly believe that we can create the future of enterprise software. The cornerstones are empathy for our customers, innovative solutions, and engagement from our employees. By harnessing the power of data and machine learning, we can enable our customers to transform their businesses into intelligent enterprises.

## Acquisitions

We take a balanced approach on how we grow. We will continue to focus on organic investments in technology and innovations to drive our short-term and midterm growth ambitions. We will continue to look at unleashing the full potential of our employees' talent as well as strategic partnerships with our ecosystem to foster innovation.

Additionally, we occasionally acquire targeted “tuck-in” technologies to add to our broad solution offerings and improve coverage in key strategic markets. In 2017, SAP made the following smaller acquisitions:

- **Abakus**, a marketing attribution company that measures the customer's journey across all channels, helps enhance SAP's marketing offerings to ensure marketers are optimizing marketing spend. By combining rich marketing performance management capabilities from Abakus with the SAP Hybris Marketing Cloud solution capabilities, marketers get unique insight into marketing performance to optimize campaigns and understand customer interaction across channels.
- **Gigya**, a customer identity management company, helps us to strengthen our customer experience across all devices and channels. The consent-based identity data platform from Gigya helps companies build better relationships with their customers while remaining within legal privacy requirements. We intend to integrate Gigya into our SAP Hybris software to build better profiles of our customers, and to personalize sales, service, and marketing.

## Investing in Future Technology

### Sapphire Ventures

In addition to our investments in organic growth, SAP also supports entrepreneurs that aspire to build industry-leading businesses, through venture capital funds managed by Sapphire Ventures. Sapphire Ventures currently has over US\$2 billion under management and has invested in more than 130 companies on five continents. This includes growth-stage technology companies and early-stage venture capital funds on five continents. Sapphire Ventures pursues opportunities in which it can help fuel enterprise growth by adding expertise, relationships, geographic reach, and capital. It places a particular focus on companies in Europe, Israel, and the United States.

# Our Business Model

We innovate software and technology solutions that empower our customers to become intelligent digital businesses and create a better and more sustainable economy, environment, and society. This way, we aim to fulfill our strategic purpose of helping the world run better and improving people's lives.

We create value by identifying the business needs of our customers and addressing these with innovative software, service, and support solutions. The collaboration with our

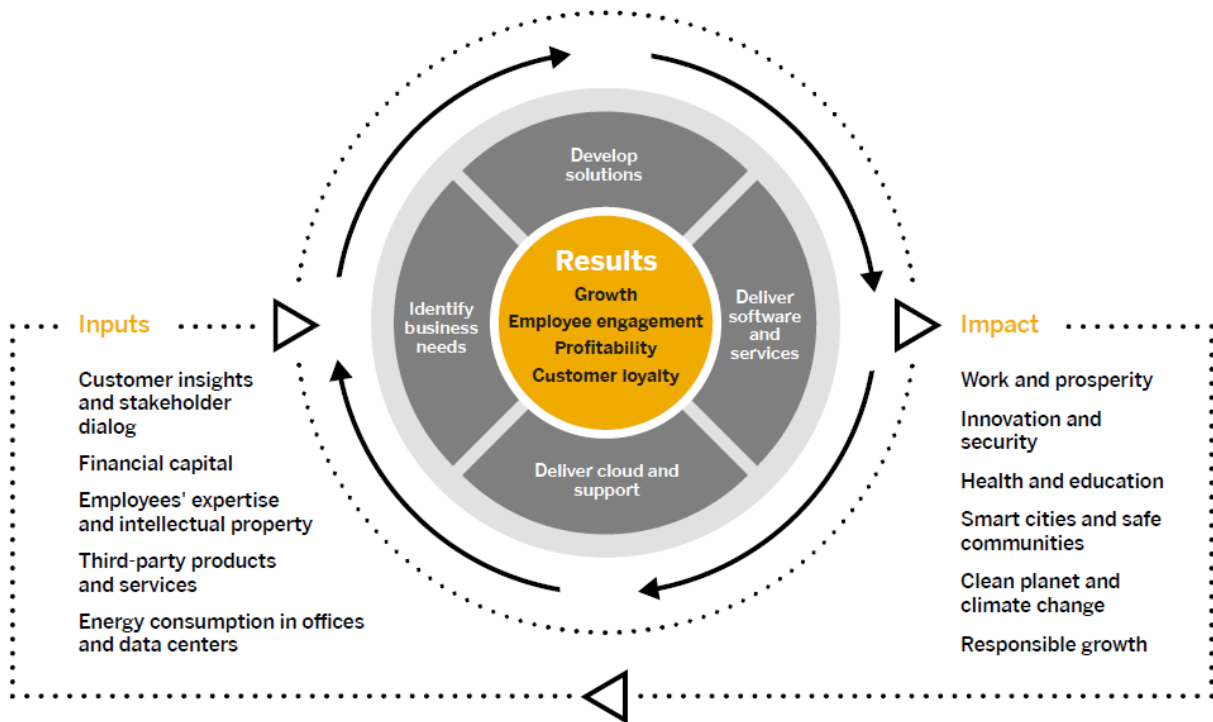
customers and partners throughout this process helps us continuously improve our solutions and deliver enhanced value to our customers.

Our value creation process does not happen in a vacuum. It is enabled by external inputs and value drivers and leads to significant impact at our customers and – through them – in the world.

## How SAP creates value

Our vision is to help the world run better and improve people's lives.

We innovate software and technology solutions that empower our customers to become intelligent enterprises and create a better and more sustainable economy, environment, and society.





## Measuring Our Success

We believe the most important indicators for measuring our success comprise both financial and non-financial areas:

- Growth
- Profitability
- Customer loyalty
- Employee engagement

The table below provides an overview of the specific key performance indicators (KPIs) used to measure performance, and compares this performance with our goals.

## Outlook and Results for 2017

Strategic Objective	KPI	2017 Outlook* (non-IFRS, at constant currencies)	2017 Results (non-IFRS, at constant currencies)
Growth	Cloud subscriptions and support revenue	€3.8 billion to €4.0 billion	€3.83 billion
	Cloud and software revenue	+7.0% to +8.5%	+8%
	Total revenue	€23.4 billion to €23.8 billion	€23.77 billion
Profitability	Operating profit	€6.85 billion to €7.0 billion	€6.92 billion
Customer Loyalty	Customer Net Promoter Score	21% to 23%	17.8%
Employee Engagement	Employee Engagement Index	84% to 86%	85%

\* The outlook was communicated in January 2017 and raised in July and October 2017. The 2017 outlook numbers above reflect the raised outlook from October 2017.

## Outlook for 2018 and Ambitions for 2020

Strategic Objective	KPI	2017 Results (non-IFRS)	2018 Outlook (non-IFRS, at constant currencies)	2020 Ambition (non-IFRS)
Growth	Cloud subscriptions and support revenue	€3.77 billion	€4.8 billion to €5.0 billion	€8.0 billion to €8.5 billion
	Cloud and software revenue	€19.55 billion	€20.7 billion to €21.1 billion	
	Total revenue	€23.46 billion	€24.6 billion to €25.1 billion	€28 billion to €29 billion
Profitability	Operating profit	€6.77 billion	€7.3 billion to €7.5 billion	€8.5 billion to €9.0 billion
Customer Loyalty	Customer Net Promoter Score	17.8%	21% to 23%	35% to 40%
Employee Engagement	Employee Engagement Index	85%	84% to 86%	84% to 86%

# Products, Research & Development, and Services

>7,900

SAP S/4HANA customers

~50 M

people using SAP Concur solutions

€3,352 M

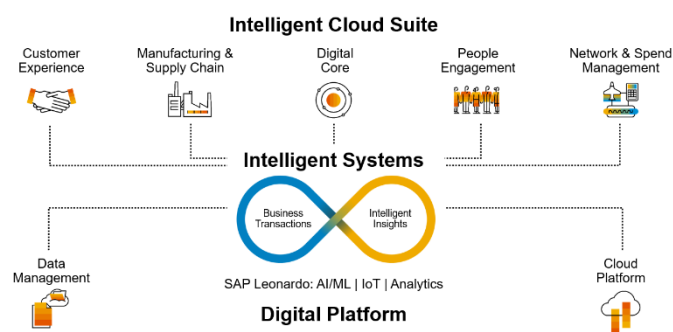
R&D expense in 2017 (IFRS)

## Bringing Continuous Innovation to Our Customers

SAP solutions touch millions of lives around the world every day. Some users skim the edges of our technology when they use our customers' services, while others are fully immersed, driving their business forward with integrated applications built on our most advanced SAP technology foundation. Each SAP solution is a powerful standalone application, built to enrich and improve businesses and lives through its specific purpose. But when working together, they are optimized to integrate, learn, and improve themselves in a way that goes beyond basic software and database solutions.

By bringing continuous innovation to our customers, we not only help them, and ourselves, to be successful, but we also realize our vision and purpose of helping the world run better and improving people's lives.

## Intelligent Enterprise Framework



## Digital Platform

### SAP HANA

SAP HANA is our flagship in-memory database. It enables businesses to process and analyze live data and make business decisions based on the most up-to-date information, a requirement of today's digital economy. The innovative architecture in SAP HANA allows both transactional processing

for data capture and retrieval, and analytical processing for business intelligence and reporting. It reduces time-consuming database and data management tasks and underpins intelligent applications that use advanced analytic processing. It includes features such as text analysis, multitenant database containers to support multiple isolated databases in a single SAP HANA system, as well as external machine learning libraries.

### SAP Data Hub

In September 2017, SAP launched SAP Data Hub. The solution enables businesses to manage data from numerous sources, SAP or third-party, without having to centralize data into one location. SAP Data Hub allows users to process data "in flow," for example, while the data is being recorded to the data store, or while they are preparing the data for use in machine learning. It also provides enterprise data governance to see who changed or accessed the data. The solution lets companies safely and effectively move and share their data to enable agile data operations across the enterprise. SAP Data Hub is also part of the SAP Leonardo Data Intelligence capability.

### SAP Cloud Platform

In the digital economy, companies need both standard applications and a highly flexible platform that allows them to:

- Extend and customize cloud and on-premise SAP applications
- Develop new applications for different processes
- Integrate cloud and on-premise applications

SAP Cloud Platform is an enterprise platform as a service (PaaS), an environment where companies can build, test, run, manage, and expand software applications in the cloud. It offers comprehensive capabilities to help business users and developers create better, more agile applications in less time. Customers can apply, among other things, mobile services, advanced analytic tools, state-of-the-art authentication mechanisms, and social functionality. For maximum flexibility, portability, and agility, we use open source technologies. SAP Cloud Platform enables businesses to connect and integrate

best-of-breed applications to our digital core and to custom-built solutions.

## Multi-Cloud Strategy

SAP Cloud Platform allows customers to choose from a selection of infrastructure-as-a-service (IaaS) providers, and today many enterprise customers are choosing more than one provider. SAP has partnered with Amazon, Google, and Microsoft so that our customers have the choice of running their applications in an SAP or a third-party data center or in a combination thereof.

## SAP BW/4HANA

SAP BW/4HANA is a data warehouse solution built entirely on SAP HANA. It offers a unique real-time analytics layer, which can query the database directly instead of processing data at the application layer like traditional analytical engines do. It integrates data from across an organization to deliver key business intelligence. SAP BW/4HANA provides customers with enhanced data modelling and governance, so that they can manage the availability, integrity, and security of their data. The solution can be connected to various data sources, including SAP or unstructured third-party data, such as Hadoop.

## Intelligent Systems

### SAP Leonardo

The SAP Leonardo digital innovation system enables customers to make business sense and opportunity of disruptive technologies such as advanced analytics, Big Data, Internet of Things (IoT), and machine learning. It does so with a proven methodology that brings together the customer vision, SAP's process and industry knowledge, and our software capabilities. SAP Cloud Platform provides the environment for applications to consume these disruptive technologies.

### SAP Leonardo Machine Learning

Machine learning allows companies to augment human capabilities and automate repetitive tasks. The technology is an essential part of the SAP Leonardo digital innovation system, empowering enterprises to improve processes. Currently, several SAP Leonardo Machine Learning solutions are in productive use. We have already embedded machine learning capabilities into a wide range of applications across the SAP portfolio. Customers can also build their own machine learning models using SAP Leonardo Machine Learning Foundation.

### SAP Leonardo Blockchain

Blockchain technology is a distributed digital ledger where transactions can be securely shared among independent parties. It is most familiar as the underlying technology for cryptocurrencies but it has the potential to be the foundation for a new type of collaborative business. We intend to use blockchain technology to build a new generation of transactional

applications that retain their trustworthiness and transparency even when used by multiple parties and business networks. We also encourage customers to use our SAP Leonardo Blockchain technology to build blockchain solutions for their specific business needs.

### SAP Leonardo Internet of Things

The proliferation of intelligent devices with sensors and ubiquitous connectivity, aptly named the Internet of Things (IoT), has led to an upsurge of connected things, from washing machines to airplane engines and oil rigs. The data generated from these "things" is processed either near the point of origin or in the cloud, and can be the catalyst for digital transformation as companies use this data to improve their business processes. With SAP Leonardo IoT capabilities, we enable companies to optimize their business processes by connecting things to people and processes. We help companies to collaborate with business partners on digital twins – digital replicas of connected things that change and are updated when the physical counterpart changes. SAP Leonardo IoT also enables organizations to design innovative business models, and create new work environments and connected user experiences.

### SAP Leonardo Innovation Services

SAP Leonardo Innovation Services provide a guided approach to digital transformation. They use design thinking methods to help identify and test new digital business models – and offer a fast, low-risk path to SAP Leonardo adoption. There are three service editions to choose from: The express edition provides fast implementation of predefined use cases. The open innovation edition helps users create a new solution for their specific business challenges. The enterprise edition extends the scope of the open innovation edition. It includes services and empowerment sessions to help create multiple business-specific solutions in parallel.

### SAP Analytics Cloud

SAP Analytics Cloud leverages the inherent intersection of business intelligence (BI), planning, and predictive analytics to deliver new capabilities such as simulation and automated discovery in BI, as well as storytelling and predicted forecasts in planning. The solution allows organizations to close the gap between transactions, data preparation, analysis, and action. SAP Analytics solutions allow customers to take advantage of high-speed innovation in the cloud, while using their existing on-premise investments. To enable a smooth transition to the cloud, the SAP Analytics Hub solution, built on SAP Cloud Platform, is designed to centralize access to all analytics from SAP and third-party applications and platforms.

# The Intelligent Cloud Suite

## SAP S/4HANA

SAP S/4HANA is our enterprise resource planning (ERP) suite for the intelligent enterprise. Three years after its introduction, over 7,900 customers have chosen the suite to support their digital transformation. It enables businesses to access and analyze data in real time, giving them insights to act in the moment, providing predictive suggestions, and connecting business functions and the people within them. SAP S/4HANA software spans across all business functions including finance, human resources, sales, service, procurement, manufacturing, asset management, supply chain, and R&D.

### Flexible Deployment

SAP S/4HANA is developed first for the cloud, and can be delivered as a software-as-a-service (SaaS) solution, on premise, in a private cloud, or as a hybrid deployment. All consumption options are compatible, so that organizations have the flexibility to implement SAP S/4HANA to meet their exact needs. SAP S/4HANA Cloud provides SaaS qualities such as scalability as well as quarterly innovation updates. On-premise customers receive the same updates but on an annual update cycle.

### Real Time

SAP S/4HANA is built specifically to take advantage of in-memory computing with SAP HANA. SAP S/4HANA reduces both the complexity of the data model and the data footprint. It enables SAP S/4HANA solutions to process huge amounts of data in real time and end users can flexibly change their perspective of the data. This not only saves time and costs for our customers but also delivers a new interactive experience and new business insights. SAP S/4HANA empowers business users to act in the moment, as they have immediate access to information at the most granular level to help make better, more informed decisions.

### Machine Learning

In 2017, we delivered SAP S/4HANA with innovations that utilize SAP Leonardo machine learning services. Routine business processes can now be automated by eliminating inefficient manual process steps, such as matching payments to invoices. This increase in automation increases productivity by allowing users to focus on higher value tasks. Machine learning also helps users by providing information that is relevant to the current task, so they can quickly identify areas requiring attention and action.

### Integrated and Extendable

SAP S/4HANA is built with an open architecture and connects to the entire SAP portfolio and beyond. The new SAP S/4HANA Cloud software development kit (SDK) allows our cloud and on-

premise customers, as well as partners, to innovate quickly and easily on SAP Cloud Platform while leveraging the capabilities of their digital core. As part of the open architecture, the SDK provides all the necessary APIs, libraries, and project templates needed to develop extension applications on SAP S/4HANA so customers can get going quickly.

## Supply Chain Management

To meet the rising expectations of today's discerning, tech-savvy customer, companies need to respond quickly and accurately to their demands, which means creating responsive and distributed manufacturing and supply chain networks. SAP solutions enable customers to set up a real digital supply chain that provides real-time visibility into manufacturing, logistics, and how their assets are operating, enabling them to optimize maintenance and service schedules.

## Integrated Business Planning

The SAP Integrated Business Planning solution is powered by SAP HANA, and delivers real-time supply chain planning capabilities for sales and operations, demand and supply planning, and inventory optimization in the cloud. It provides the necessary information to make business decisions using embedded analytics, simulation, prediction, and decision support. Individual SAP Integrated Business Planning applications can be used with the established user interface from SAP Fiori or with a Microsoft Excel plug-in, allowing users to run optimization scenarios directly in their spreadsheets.

## Small and Midsize Enterprises (SMEs)

SAP also offers a portfolio of solutions that extends the power of SAP HANA to support SMEs with their digital transformation.

### SAP Business ByDesign

SAP Business ByDesign is a cloud-based ERP solution for midsize companies that uses the power of SAP HANA. It gives fast-growing midmarket businesses the platform to scale up their operations and compete in their markets without complexity or high costs. The solution connects every function across a company to time-tested best practices and in-depth analytics. As an integrated suite across all key business functions, it also enables the growing ecosystem of SAP's third-party partners to develop additional content for customers using their domain-specific expertise.

### SAP Business One

SAP Business One is an on-premise and cloud business application for small businesses that is modular and flexible, with add-ons available that are tailored to industries and special functions. These are developed and sold by an established network of partners ready to help small businesses grow wherever they are in the world.

## SAP Fiori

### Personalization with Fiori UX

SAP continuously improves our user experience (UX) in accordance with how people work today – collaboratively, spontaneously, or socially. Our users demand solutions that not only understand the business content but also the context in which they operate. SAP Fiori is our signature user interface, and we have personalized the UX even more with new machine learning capabilities. SAP CoPilot, a digital assistant and bot integration framework, is integrated into SAP Fiori. Its conversational user interface allows users to chat, ask questions, and give commands. SAP CoPilot augments users' capabilities with context and business situation awareness, and provides recommended actions.

## Line-of-Business Software-as-a-Service Solutions

SAP delivers line-of-business (LoB) cloud applications that simplify and connect key business areas and address specific customer needs, from human resources to supply chain and customer engagement to spend management. Each of these cloud applications from SAP represent a new generation of business applications – cloud based and connected to the world's largest businesses networks to automate, transform, and support business in the digital economy.

As a modular, integrated ERP system, SAP S/4HANA is the backbone of a company. Our LoB cloud applications are designed to tightly integrate with SAP S/4HANA software and the wider SAP portfolio. They are built on open platforms that enable customers to easily link them with third-party applications, delivering real-time insights to help businesses run effectively and innovate with speed and flexibility.

## Workforce Engagement

### SAP SuccessFactors Solutions

Our SAP SuccessFactors Human Capital Management (HCM) solutions help organizations increase the value of their workforce by developing, managing, engaging, and empowering their people.

SAP SuccessFactors HCM cloud software is used by more than 6,400 customers in over 200 countries and territories. The core HR and talent management solutions reach more than 93 million users. Our development approach ensures that our solutions are optimized for different devices to provide the best user experience. We deliver SAP SuccessFactors HCM solutions as a complete and innovative digital HR suite that addresses all aspects of HR, from administration, payroll, and benefits to talent management and collaboration across the employee journey. They are designed to help companies attract, develop,

and retain their best talent. SAP SuccessFactors solutions integrate with companies' internal and external databases and software, including SAP S/4 HANA.

In 2017, SAP SuccessFactors Employee Central, a core HCM solution, surpassed 2,300 customers, more than doubling our customer numbers from 1,000 just two years ago. We developed "Business Beyond Bias," a set of business processes and smart data analytics tools based on SAP Leonardo Machine Learning capabilities, that can help companies eliminate unconscious bias in the workplace. Additionally, in partnership with Apple, we created a new mobile experience for SAP SuccessFactors solutions that combines the award-winning SAP Fiori UX with a best-in-class Apple iOS experience.

SAP SuccessFactors solutions help manage the core employee workforce, but organizations also need to manage flexible external talent such as freelancers or consultants. With seamlessly integrated SAP Fieldglass solutions for external workforce management and services procurement, we deliver a total workforce management solution.

## Spend Management

Our cloud applications help customers manage spend across their entire organization, from the sourcing of indirect goods to direct materials and services with SAP Ariba solutions and the online marketplace Ariba Network, as well as SAP Fieldglass solutions for services procurement, and SAP Concur solutions for travel and expense management. Built on open platforms, all of our cloud applications work together seamlessly, enabling customers to use our entire portfolio or choose the specific solutions that address their specific needs.

## SAP Fieldglass Solutions

SAP Fieldglass solutions are cloud-based applications enabling external workforce management and services procurement. The SAP Fieldglass Vendor Management System, an external talent management system, helps organizations find, engage, and manage all types of flexible resources – including contingent workers, statement of work-based consultants, freelancers, and more.

In 2017, the SAP Fieldglass solutions connected customers with 4.3 million workers and more than 89,000 suppliers in more than 180 countries. Its open API framework makes it easy for organizations to connect to other systems and solutions to transform how work gets done. To further help our customers, we introduced the flex edition of SAP Fieldglass Vendor Management System designed for the midmarket. In addition, SAP Fieldglass Live Insights, a machine-learning-based industry benchmarking and simulation service, enables users to assess external talent scenarios using anonymized and aggregated data.

## SAP Ariba Solutions

SAP Ariba solutions offer an online business-to-business marketplace connecting more than 3.1 million buyers in more than 180 countries with sellers realizing more than US\$1 trillion in goods and services every year. SAP Ariba solutions help buyers build a sustainable supply chain by connecting them with sellers through Ariba Network and by providing a comprehensive set of cloud-based applications to collaborate across the entire procurement process, from sourcing and orders to invoice and payment.

With SAP Ariba solutions, sellers can easily connect with buyers, and more effectively manage both their sales cycle and cash flow to grow their businesses. Innovations such as “guided buying,” a set of capabilities embedded within the SAP Ariba Buying and Invoicing solution, automatically leads users to the goods and services they need to do their jobs. Guided buying also leads employees through the purchase process in compliance with company policies. More than 1 million users are using guided buying to make procurement more simple, efficient, and intelligent.

The Ariba Network light account capability is a new, simple way for companies to bring all of their suppliers onto Ariba Network, where they can collaborate on purchase orders, invoices, and more, free of charge and without any limits on the number of documents exchanged. To date, more than 185,000 purchase orders and invoices worth over US\$40 billion in spend are managed using the service.

Additionally, the SAP Ariba Supplier Risk solution automatically provides companies with a complete view of their exposure to risk across their supply chain. Companies can then make more timely, contextual, and accurate business decisions and build global supply chains that are more responsible, sustainable, and inclusive.

## SAP Concur Solutions

With close to 50 million users worldwide, SAP Concur solutions are the world’s leading travel and expense management software. They help companies of all sizes and stages go beyond automation to a completely connected spend management system that encompasses travel, expense, invoice, compliance, and risk. New solutions include Concur Locate, an integrated traveler risk management solution. During times of crisis and uncertainty, Concur Locate enables businesses to find vital information and communicate it with employees. Concur Hipmunk, an expense solution built on Hipmunk’s technology, gives small businesses the basic tools, access, and visibility they need to manage their travel expenses.

## Customer Experience

### SAP Hybris Solutions

SAP Hybris offers cloud-based products that run front-office functions across customer experience, commerce, marketing, sales, services, and billing. It can be used for business-to-business and business-to-consumer operations to deliver contextual, consistent, and relevant experiences throughout the customer journey.

Our commerce function helps businesses deliver retail services across all channels, in-store or online, via mobile device or a desktop. The customer relationship management and marketing function monitors, manages, and optimizes how the business engages with customers, whatever device they use to shop. Ready-to-use artificial intelligence (AI) and machine learning scenarios are integrated into SAP Hybris standard software. Examples include the SAP Brand Impact application for the precise measurement of brand exposure and value in SAP Hybris Marketing Cloud, as well as functionality to help sales executives evaluate deal opportunities at a glance in the SAP Hybris Sales Cloud solution. The SAP Hybris Revenue Cloud solution is designed to help companies rapidly deploy highly innovative offers and effective sales processes in an agile, flexible, and scalable environment.

## SAP Digital Business Services

SAP offers an entire portfolio of services and support designed to help our customers maximize the value of their SAP solutions and to realize the full potential of innovation. We empower customer success, built on SAP’s 45 years of delivery experience across 25 industries. Our people, processes, and platform help our customers to achieve digital transformation, enabling them to differentiate through innovation and produce exceptional business outcomes.

In 2017, SAP Digital Business Services embarked on a major portfolio simplification process. This work resulted in a portfolio framework that groups our SAP Digital Business Services products into three categories:

- Premium engagements
- Services
- Continuous customer success

These services and support products are underpinned by our collaborative platform, advisory services that provide customers with intelligent guidance, and the SAP ecosystem.

## Premium Engagements

**SAP MaxAttention** is the most exclusive and closest customer partnership with SAP. As the highest engagement level throughout the software lifecycle, this customized, on-site engagement orchestrates all SAP experts to work with our customers to innovate, develop ideas, and accelerate their digital transformation. It enables our customers to simplify their IT operations and optimize operations.

The **SAP ActiveEmbedded** service encompasses a similar level of premium engagement but is designed to support smaller businesses requiring less intensive interaction.

## Services

Depending on the needs of the customer, we may offer advisory and implementation services separately, or package them together to deliver defined business outcomes.

### Advisory Services

Advisory services create and realize new opportunities. We guide customers throughout the innovation process, focusing on creating economic, social, and environmental impact.

Recent innovations in our advisory services include **SAP Leonardo Innovation Services**.

### Implementation Services

**Implementation and migration services** help companies realize the benefits of our products and solutions faster and safer when deploying SAP technology. In 2017, we innovated in the following areas:

- **The SAP Value Assurance** program, our systematic approach to accelerating implementation while minimizing risk. Customers and partners have access to best practices, methodologies, and tools, as well as deep technology expertise to accelerate the implementation of SAP S/4HANA and SAP BW/4HANA. It is available in packages depending on the level of service required, simplifying each phase of the implementation to ensure solutions are resilient, sustainable, and flexible.
- **SAP Model Company**, an accelerator service created from best practices gathered in our digital transformation projects. SAP Model Company provides a preconfigured, ready-to-run reference solution with business content, accelerators, and engineered services for multiple industries or LoBs. It provides the fundamental building blocks for an industry or LoB solution, helping customers accelerate deployment and digital transformation.

## Continuous Customer Success

We want to enable our customers to succeed, so we help drive adoption of our products and facilitate business continuity with services and support. We deliver success plans to accelerate

time to value from SAP technology. Our support offerings are the foundation of customer success plans, and are embedded in all cloud solutions from SAP and for on-premise installations.

### SAP Enterprise Support

Providing a seamless end-to-end customer support experience across all products and solutions, our flagship SAP Enterprise Support offering is embedded in all relevant cloud subscriptions from SAP and offered as an option for on-premise systems.

### SAP Preferred Success

The SAP Preferred Success plan focuses on advanced support, learning, and empowerment for administrators and end users. It also includes resources to drive cloud adoption and consumption. It is currently available for SAP S/4HANA, public cloud edition; SAP SuccessFactors solutions; and the SAP Hybris Cloud for Customer solution.

Our **SAP ONE Support** approach ensures our customers enjoy the same support experience across their entire portfolio of SAP products. In addition, the **Next-Generation Support** approach enables us to anticipate customer needs, accelerate their path to getting accurate answers when they need them, and offering expert help at their fingertips.

## Collaboration Platform and Intelligent Guidance

Complementing the skills of our people, we use technology internally and externally to support customer success.

### SAP Solution Manager

SAP Solution Manager helps customers manage their SAP products throughout the entire solution lifecycle, providing support for all SAP solutions and integrated third-party software, for both on-premise and cloud implementations. It enables customers to collaborate with SAP and to monitor and manage their existing applications, as well as new innovation projects that can be managed from conception to deployment. It builds a single source of the truth into one, user-friendly solution that helps customers jump-start SAP implementation projects with predefined content, thereby minimizing business risk.

SAP has developed tools and related services in response to our customers' requests for more targeted guidance. These include:

- **SAP Innovation and Optimization Pathfinder**, a service that recommends new SAP innovations, business process improvements, and IT optimizations tailor-made for each business, based on the way the core SAP ERP system is being used. Available for customers in maintenance, SAP Innovation and Optimization Pathfinder helps them strengthen the relationship with their internal business departments by prioritizing areas of innovation and optimization.

- **SAP Transformation Navigator**, a self-service tool that identifies the SAP products and services already being used by the customer, and recommends new products and services that would benefit the customers' business and IT strategies. It is designed to answer the key questions SAP customers have about which innovations they need to bring into their organization, in what order, during what timeframes, and the business value and outcomes they can expect. SAP Transformation Navigator also provides information about integration, transformation services, and licenses.
- **SAP Readiness Check**, our latest tool to help prepare businesses for an SAP S/4HANA deployment. The easy-to-use cloud-based tool provides answers to the questions of compatibility, relevance, system requirements, and business impacts that customers may have regarding implementation of SAP S/4HANA. The tool removes the complexity of planning and discovery tasks that are required to prepare businesses for their transformation to SAP S/4HANA.

## Ecosystem

### Extending Our Reach Through a Broad Ecosystem

Our extensive ecosystem and partner network extends our reach in the marketplace. Our vibrant ecosystem is made up of more than 17,000 partners worldwide that build, sell, service, and run SAP solutions and technology to customers from businesses large and small. Our partner ecosystem is a vital driver for SAP, especially in the SME sector.

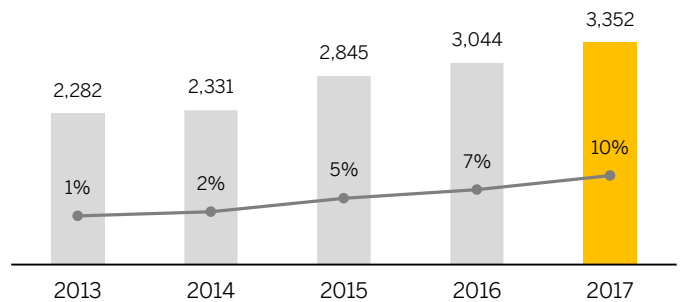
Through the power of partnership and co-innovation, our partner ecosystem helps drive the bulk of SAP's presence among the small businesses and midsize companies that make up more than 80% percent of SAP customers. In addition, partners are responsible for the more than 55,000 customers using SAP Business One. Overall, having a robust and vibrant partner ecosystem is vital for SAP's growth and success; partners are key allies in bringing awareness of SAP solutions and technology to the marketplace. They also help SAP break into new markets, for instance, with SAP Leonardo and SAP Cloud Platform, as well as leverage new technologies such as artificial intelligence, blockchain, and 3D to deliver successful business outcomes for customers.

## Investment in R&D

SAP's strong commitment to R&D is reflected in our expenditures (see figure below).

### Research and Development (IFRS)

€ millions | change since previous year



In 2017, our IFRS R&D expenses as a portion of total operating expenses remained stable at 18.0% compared to the prior year. Our non-IFRS R&D expense ratio remained stable at 18.4% year over year. At the end of 2017, our total full-time equivalent (FTE) headcount in development work was 24,872 (2016: 23,363). Measured in FTEs, our R&D headcount was 28% of total headcount (2016: 28%).

Total R&D expense not only includes our own personnel costs but also the external cost of work and services from the providers and cooperation partners we work with to deliver and enhance our products. We also incur external costs for the following:

- Translating, localizing, and testing products
- Obtaining certification for products in different markets
- Patent attorney services and fees
- Consulting related to our product strategy
- Professional development of our R&D workforce

## Patents

SAP actively seeks intellectual property protection for innovations and proprietary information. Our software innovations continue to strengthen our market position as a leader in business solutions and services. Our investment in R&D has resulted in numerous patents. As at December 31, 2017, SAP held a total of more than 8,852 validated patents worldwide. Of these, 845 were granted and validated in 2017.

While our intellectual property is important to our success, we believe our business as a whole is not dependent on any particular patent or a combination of patents.



# Security, Privacy, and Data Protection

## Meeting Today's Data Protection Challenges

Every day, organizations around the world trust SAP with their data – either on their own premises, in the cloud, or using mobile devices while on the move. Our customers need to know that we will keep that data safe, process it in a manner that complies with local legislation, and protect it from malicious use.

For this reason, data protection and IT security are of paramount importance to us. We have implemented safeguards to help protect the fundamental rights of everyone whose data is processed by SAP, whether they are our customers, prospects, employees, or partners. In addition, we work towards compliance with all relevant legal requirements for data protection. Our global security officer and our data protection officer report to the SAP chief technology officer and the SAP chief financial officer (CFO) respectively and monitor the compliance of all activities in these areas.

Furthermore, SAP has established a formal security governance model. Relevant security topics are discussed at Executive Board level at least six times each year, during steering meetings attended by single or multiple board members. To meet and ensure consistent data protection compliance, our CFO and our data protection officer meet at least on a monthly basis. Furthermore, our compliance status related to data protection has been an inherent part of many Supervisory Board meetings.

## Facing Increasing Risks in IT Security

Safeguarding data is an increasingly challenging task today. Companies are collecting and storing more data than ever before from more varied sources. Data now proliferates outside the four walls of businesses with multiple endpoints exposed and vulnerable to attack. Moreover, the sheer number of and the sophistication of attacks facing businesses are at an all-time high. We are seeing the “commercialization of hacking”, while new advanced persistent threats can bypass many traditional security protection techniques.

## Establishing a Comprehensive Security Vision

For SAP and for our customers, security means more than just addressing compliance demands. Companies need to be

proactive when securing business-critical data and core information assets. Up-to-date security mechanisms, such as authentication, authorization, and encryption, serve as a first line of defense. To secure the SAP software landscape, we offer a comprehensive portfolio of security products, services, and secure support as well as security consulting. These offerings help our customers build security, data protection, and privacy capabilities into their businesses.

Our comprehensive portfolio includes sophisticated authentication and authorization tools and solutions for governance, risk, and compliance. In addition, we offer integrated tools for efficiently scanning and testing source code written in ABAP and solutions that enable organizations to detect system anomalies and react before damage can be done. As well as offering solutions from our security portfolio to our customers, SAP also runs the software internally.

Several of our security measures extend across all sectors of our company and thus to all of our products and services. These measures include, among other things, the regular training of our employees on IT security, data protection, and privacy, including the handling of confidential information and ensuring controlled and restrictive access to customer information. In addition, we have developed a three-pronged strategy focusing on the security of our products, operations, and organization:

### Secure Products Strategy: Championing Product Security

Businesses use SAP applications to process mission-critical transactional data that can be highly attractive to cyber attackers. Our secure products strategy focuses on incorporating security features into our applications to minimize the risk of a security breach.

Our secure software development lifecycle is at the heart of this strategy. It provides a comprehensive methodological approach for incorporating security features and capabilities into our applications. Before a release decision is made, our software is assessed and validated by internal IT security experts. The development team then addresses any recommendations made by these security experts before we release the application.

This approach conforms to the ISO/IEC 27034 standard for application security and is closely embedded into our ISO 9001-certified process framework for developing standard software.

## Secure Operations Strategy: Running Secure Operations

Our secure operations strategy focuses on the security principles of “confidentiality, integrity, and availability” to support overall protection of our business, as well as our customers’ businesses. Our mission is to provide a comprehensive end-to-end IT operations security framework – from system and data access, and system security configuration to security patch management, security monitoring, and end-to-end incident handling. This involves the implementation of key security measures across all layers, including physical access and process-integrated controls.

Furthermore, our secure operations approach concentrates on the early identification of deviations from the standards defined in our security framework. Deviations are identified through a combination of automated and manual reviews which are performed by third parties as well as SAP employees.

Industry best-practice certifications are key success factors for our secure operations strategy. Many of our cloud solutions undergo Service Organization Control (SOC) audits ISAE3402, SSAE16 SOC I Type II, and SSAE16 SOC II Type II. The SOC standards are harmonized with a number of ISO certifications including ISO 9001, 27001, and 22301.

In 2017, we also launched our SAP Cloud Trust Center site. Here, customers can find information about how SAP provides security, privacy, and compliance in the cloud.

## Secure Company Strategy: Taking a Holistic Approach to the Security of Our Business

At SAP, we take a holistic approach to the security of our company, encompassing processes, technology, and employees. At the heart of our secure company strategy is an information security management system and a security governance model that brings together different aspects of security. These include the following three main areas:

- **Security culture:** Awareness and compliance with our security policy and standards are fostered through regular mandatory training, assessments, and reporting.
- **Secure environments:** Comprehensive physical security measures are in place to ensure the security of our data centers and development sites so that we can protect buildings and facilities effectively.
- **Business continuity:** A corporate continuity framework aimed at having robust governance in place at all times is reviewed on an annual basis to adapt to new or changed business needs.

## Complying with Data Protection and Privacy Legislation

When processing data about employees, applicants, customers, suppliers, and partners, SAP respects and protects their right to data protection and privacy while implementing appropriate security measures. We develop and support our data protection and privacy strategy in accordance with our business strategy.

To comply with applicable data protection laws, SAP has adopted a global data protection and privacy policy. It outlines a Group-wide minimum standard for handling personal data in compliance with data protection and privacy laws. The policy defines requirements for all operational processes that affect the processing of or access to personal data, as well as providing clear responsibilities and organizational structures. We actively monitor changes to applicable laws and regulations so that we can update our standards on an ongoing basis.

SAP is committed to ensuring compliance with the harmonized European data protection law, the General Data Protection Regulation (GDPR), which will be applicable as of May 25, 2018. We are also developing our products to support our customers in applying GDPR requirements.

We have implemented a wide range of measures to protect data controlled by SAP and SAP customers from unauthorized access and processing, as well as from accidental loss or destruction. These include, among others, the implementation of our data protection management system (DPMS) in areas critical to data protection. This system is certified on a yearly basis by the British Standards Institute. Initially implemented at our global support organization, the DPMS has been successively rolled out and is now implemented in almost all areas and countries at SAP and will be introduced in all acquired companies.

In 2017, SAP did not experience any significant incidents within the scope of processing personal data – for its own purposes or on behalf of its customers – that are subject to the provisions of the German Federal Data Protection Act or other applicable data protection laws.

# Customers

>378,000

customers around the world

17.8%

Customer Net Promoter Score 2017

## Continuing to Build Strong Customer Relationships

Customer loyalty is one of our four corporate objectives, along with growth, profitability, and employee engagement. We measure customer loyalty based on a Net Promoter Score (NPS) approach which uses a range from -100% to +100%. In 2017, our combined on-premise and cloud Customer Net Promoter Score (Customer NPS) was +17.8% (2016: +19.2%). We completed the elimination of differences in the survey approach that existed in one of our acquired entities (where a year-over-year NPS comparison is not possible because of the change in survey approach).

While we continue to have a positive Customer NPS, we did not reach our target of 25% in 2017. Based on customer feedback, we continue to focus on helping customers choose the SAP products that best support their business needs, simplifying purchasing processes for customers, and making our products easy and pleasing to use. With a sustained emphasis on customer experience across the company, we are again targeting a combined Customer NPS of 21% to 23% in 2018, with our medium-term goal being 35% to 40% by 2020.

For more information about the Customer NPS, see the [Performance Management System](#) section.

## Continuing Strong Customer Demand

Companies continue to turn to our software to help their digital transformation. In 2017, customers licensed or subscribed to the full range of SAP software, from comprehensive solutions for large enterprises to the latest mobile apps.

Our examples by region include the following customers:

### North America and Latin America (Americas) Region

– **Aldo Group**, a Canadian retailer, and SAP engaged in a workshop on the SAP Leonardo digital innovation system at

the SAP Leonardo Center in New York, bringing together CxO-level leaders of the Aldo team, SAP experts, and leading academics. Using design thinking techniques, the team developed a long list of new and creative digital transformation strategies to address Aldo's business priorities. Aldo will take these ideas, test them through controlled execution in real-world conditions, and iterate innovations in collaboration with SAP to help them increase scale and business value.

- **Citrosuco**, a leading supplier in the global orange juice market based in Brazil, turned to SAP as a partner in its digital transformation journey. Citrosuco has an ambitious innovation plan that includes the latest technology from the SAP Leonardo IoT for SAP Vehicle Insights system (SAP Vehicle Insights now available as SAP Moving Assets), together with SAP S/4HANA and the full range of the SAP Supply Chain Management application. The combination of SAP solutions will enable better planning based on demand, and the ability to connect farms to manufacturing sites for an orchestrated process that will also optimize transportation logistics worldwide. In addition, the company has acquired SAP Ariba, SAP SuccessFactors, SAP Hybris, and SAP Fieldglass solutions to manage its human resources, suppliers, e-commerce, vendors, and external workforce.
- **Duke Energy**, a U.S. energy company, chose SAP S/4HANA for energy utilities and SAP Hybris Cloud for Service solutions to help them transform how they serve their customers. By combining four legacy billing systems onto a single customer service-centric platform, Duke Energy can easily provide a high-touch, personalized experience while driving efficiencies, consistency, and visibility across the organization.
- **Google** and its parent company, **Alphabet Inc.**, have chosen to work with SAP to drive operational excellence in treasury and IT asset management by implementing these functions on SAP S/4HANA software running on Google Cloud. Google expects improved efficiency in finance operations and greater transparency through real-time insights. At SAPPHIRE NOW in May, SAP announced the expansion of our co-innovation partnership with Google to deliver integrated cloud solutions for our customers on Google Cloud.

- **Sancor Cooperativa de Seguros Ltda.**, a leading insurance company in Argentina with operations in Brazil, Uruguay, and Paraguay, purchased SAP S/4HANA software and the SAP HANA Enterprise Cloud service to advance its digital transformation strategy and to support its domestic and international expansion. With the goal of drastically reducing its use of paper, and making data from its core system readily available for consulting, management, and decision-making, the SAP solutions will allow Sancor to track processes ranging from claims to policy renewals in real time, and to integrate transactions.

## Asia Pacific Japan (APJ) Region

- **China International Marine Containers Co. Ltd. (CIMC)** is a leading logistics, energy equipment, and service supplier. CIMC chose SAP S/4HANA software as a foundation for innovation in smart manufacturing and Industry 4.0. Through accelerated digital transformation, CIMC hopes to become the industry lighthouse in China that is aligned with the state's "Belt and Road" initiative as well as "Made in China 2025."
- **Hanon Systems** is a full-line supplier of automotive thermal and energy management solutions. The design thinking engagement with SAP helped Hanon Systems rapidly prototype a solution for its people to more effectively manage reporting and data checks to enable more time for strategic decisions and faster responses. The South Korean company is launching its Digital Manufacturing Performance initiative utilizing machine learning in one of its European plants to streamline floor operations and gain insights into machine availability, performance, effectiveness and quality.
- **Ningbo Economic & Technical Development Zone Holding Co. Ltd. (NETD)** operates public utilities businesses in logistics, real estate, financial investment, and environmental protection in China. Through the implementation of SAP Leonardo, SAP S/4HANA, and SAP SuccessFactors solutions, it is building a Smart Manufacturing Innovation Center in Ningbo to speed up the development of intelligent manufacturing. This will support NETD's strategic plan – to help the local government provide better services in Zhejiang Province and to expand to the whole of China in the future.
- **Pricerite Stores Ltd.** is the leading home-furnishing retailer in Hong Kong, including brands such as TMF Company Ltd., the largest chain store offering tailor-made furniture to local homes and families. They chose the SAP Hybris Cloud for Customer and SAP Hybris Marketing Cloud solutions to gain a 360-degree view of their customers. Both Pricerite and TMF will use these solutions to understand their customers' interests and motivations, so that they can identify real-time marketing opportunities and develop personalized marketing experiences.
- **SEBANG Express**, a South Korea-based company engaged in the logistics business, has been operating SAP ERP Central

Component and the SAP Transportation Management application as its main ERP system. The successful implementation of this project enabled the SEBANG Group to become a company that is well-integrated, united, and aligned internally, while staying competitive and presenting a united front to the customer. Using SAP Transportation Management as a process model will facilitate growth in overall performance through more customer management applications, improved customer service, and improved new product and service innovation processes and applications, allowing the company to achieve market efficiency.

## Europe, Middle East, and Africa (EMEA) Region

- **Al-Futtaim**, a large conglomerate comprised of automotive, retail and property development, and engineering and technology businesses in the United Arab Emirates, moves to the cloud by integrating SAP SuccessFactors Employee Central with SAP Concur solutions. It will also leverage the SAP Leonardo digital innovation system to transform facilities management into "energy as a service" and reduce energy costs at its properties over the next five years. Al Futtaim plans to implement an energy management solution with IoT on SAP Cloud Platform, enabling scale to future properties.
- **Centrica**, a multinational energy and services company based in the United Kingdom, has confirmed its commitment to SAP by extending its solution footprint to include SAP Hybris, SAP Ariba, and SAP Digital Boardroom solutions. We have also joined forces to develop an energy IoT solution, integrating sensors and machine learning algorithms running on SAP Leonardo IoT technologies. SAP S/4HANA Cloud will also act as Centrica's digital core, connecting the enterprise with these IoT initiatives.
- **ifm electronic GmbH**, a German vendor of automation technology, has chosen SAP Cloud Platform and the SAP IoT Application Enablement toolkit to get more real-time information from each piece of equipment on the shop floor. ifm is building its own sensor platform for real-time maintenance, energy data management, and Big Data analysis through ifm dashboards, as well as building innovative, data-driven applications (positioned as ifm Sensor Cloud).
- **innogy SE** is a leading German energy company with the three business segments of grid and infrastructure, retail, and renewables. To be prepared for the future, innogy has chosen the SAP S/4HANA Finance solution, SAP Predictive Analytics software, SAP BusinessObjects BI suite, and the SAP Business Planning and Consolidation application to set up a new ERP system. innogy will use the digital core as the new platform for its management support and operations and maintenance processes.

- **Mercadona**, the market leader for grocery retail in Spain, has chosen SAP to help move their business into the cloud. They will adopt SAP offerings to enable their end-to-end digital transformation, implementing a broad set of SAP software (including SAP S/4HANA and SAP SuccessFactors solutions) on the SAP HANA Enterprise Cloud service. This transformation will simplify company processes and the IT landscape, and help the company meet agile business requirements faster than ever. Mercadona and SAP have established a long-term partnership based on trust, which will help build a fully integrated SAP platform.

# Performance Management System

We use various performance measures to manage our performance with regard to our primary financial objectives, which are growth and profitability, and our primary non-financial objectives, which are customer loyalty and employee engagement. We view growth and profitability as indicators of our current performance, while we see customer loyalty and employee engagement as indicators of our future performance.

## Measures We Use to Manage Our Financial Performance

### Measures We Use to Manage Our Operating Financial Performance

In 2017, we used the following key measures to manage our operating financial performance:

**Cloud subscriptions and support revenue (non-IFRS):** This revenue driver comprises the main revenues of our fast-growing cloud business. We generate cloud subscriptions and support revenue when we provide software functionality in a cloud-based infrastructure (software as a service, or SaaS) to our customers; when we provide our customers with access to a cloud-based infrastructure to develop, run, and manage applications (platform as a service, or PaaS); and also when we provide hosting services for software hosted by SAP (infrastructure as a service, or IaaS). Cloud subscriptions and support revenue is also generated by providing additional premium cloud subscription support beyond the regular support that is embedded in basic cloud subscription fees as well as by providing business network services to our customers. We use the cloud subscriptions and support revenue (non-IFRS) measure at both actual currencies and constant currencies.

**Cloud and software revenue (non-IFRS):** We use cloud and software revenue (non-IFRS) expressed in both actual currencies and constant currencies to measure our revenue growth. Our cloud and software revenue includes cloud subscriptions and support revenue plus software licenses and support revenue. Cloud subscriptions and support revenue and software revenue are our key revenue drivers because they tend to affect our other revenue streams. Generally, customers that buy software licenses also enter into related support contracts, and these generate recurring revenue in the form of support revenue after the software sale. Support contracts cover standardized support services that comprise unspecified future software updates and enhancements. Software licenses revenue as well as cloud subscriptions and support revenue also

tend to stimulate services revenue, which is earned by providing customers with professional services, premium engagement services, training services, messaging services, and payment services.

**Total revenue (non-IFRS):** We use nominal total revenue (non-IFRS) and total revenue at constant currencies (non-IFRS) to measure our growth. The total of cloud subscriptions and support revenue and software support revenue divided by total revenue is the share of more predictable revenue. This measure provides additional insight into our sustained business success.

**New cloud bookings:** For our cloud activities, we also look at new cloud bookings (both in actual currencies and constant currencies). This measure reflects the committed order entry from new customers and from incremental purchases by existing customers for offerings that generate cloud subscriptions and support revenue. In this way, it is an indicator of cloud-related sales success in a given period and of secured future cloud subscriptions and support revenue. We focus primarily on the average contract value variant of the new cloud bookings measure that generally takes into account annualized amounts for contracts. There are no comparable IFRS measures for these bookings metrics.

**Cloud backlog:** In addition to new cloud bookings, we use the measure "cloud backlog" to evaluate our sales success in the cloud business. We define cloud backlog as a measure that represents the volume of business that, as of period end, is contracted but not yet billed.

**Operating profit (non-IFRS):** We use operating profit (non-IFRS) expressed in both actual currencies and constant currencies to measure our overall operational process efficiency and overall business performance.

**Cloud subscriptions and support gross margin (non-IFRS):** We use our cloud subscriptions and support gross margin (non-IFRS) to measure our process efficiency in our cloud business. Cloud subscriptions and support gross margin (non-IFRS) is the ratio of our cloud subscriptions and support gross profit (non-IFRS) to cloud subscriptions and support revenue (non-IFRS), expressed as a percentage.

**Operating margin (non-IFRS):** We use operating margin to measure our overall operational efficiency. Operating margin (non-IFRS) is the ratio of our operating profit (non-IFRS) to total revenue (non-IFRS), expressed as a percentage.

## Measures We Use to Manage Our Non-Operating Financial Performance

We use the following measures to manage our non-operating financial performance:

**Financial income, net:** This measure provides insight into the return on liquid assets and capital investments and the cost of borrowed funds. To manage our financial income, net, we focus on cash flow, the composition of our liquid assets and capital investment portfolio, and the average rate of interest at which assets are invested. We also monitor average outstanding borrowings and associated finance costs.

**Days Sales Outstanding (DSO):** We manage working capital by controlling the DSO of trade receivables. Days sales outstanding measures the average number of days from the raised invoice to cash receipt from the customer. We calculate DSO by dividing the average invoiced trade receivables balance of the last 12 months by the average monthly cash receipt of the last 12 months.

## Measures We Use to Manage Overall Financial Performance

We use the following measures to manage our overall financial performance:

**Earnings per share (EPS) (IFRS and non-IFRS):** EPS measures our overall performance because it captures all operating and non-operating elements of profit as well as income tax expense. It represents the portion of profit after tax allocable to each SAP share outstanding. EPS is influenced not only by our operating and non-operating business and income taxes but also by the number of shares outstanding.

**Effective tax rate (IFRS and non-IFRS):** We define our effective tax rate as the ratio of income tax expense to profit before tax, expressed as a percentage.

**Operating, investing, and financing cash flows and free cash flow:** Our consolidated statement of cash flows provides insight into how we generate and use cash and cash equivalents. When applied in conjunction with the other primary financial statements, it provides information that helps us evaluate the changes in our net assets, our financial structure (including our liquidity and solvency), and our ability to affect the amounts and timing of cash flows to adapt to changing circumstances and opportunities. We use our free cash flow measure to determine the cash flow remaining after all expenditures required to maintain or expand our organic business have been paid off. This measure provides management with supplemental information to assess our liquidity needs. We calculate free cash flow as net cash from operating activities minus purchases

(other than purchases made in connection with business combinations) of intangible assets and property, plant, and equipment.

## Measures We Use to Manage Our Non-Financial Performance

In 2017, we used the following key measures to manage our non-financial performance in the areas of customer loyalty, employee engagement, and leadership trust:

**Customer Net Promoter Score (Customer NPS):** This score measures the willingness of our customers to recommend or promote SAP to others. It is derived from our annual customer survey that identifies, on a scale of 0–10, whether a customer is loyal and likely to recommend SAP to friends or colleagues, is neutral, or is unhappy. We introduced this measure in 2012, as we are convinced that we can achieve our financial goals only when our customers are loyal to, and satisfied with, SAP and our solutions. To derive the Customer NPS, we start with the percentage of “promoters” of SAP, that is, those giving us a score of 9 or 10 on a scale of 0–10. We then subtract the percentage of “detractors,” that is, those giving us a score of 0 to 6. The method ignores “passives”, that is, those giving us a score of 7 or 8. Consequently, the range of achievable scores is –100 to +100, with the latter being the best achievable score for customer loyalty as measured by the Customer NPS methodology.

**Employee Engagement Index:** We use this index to measure the motivation and loyalty of our employees, how proud they are of our company, and how strongly they identify with SAP. The index is derived from an annual survey of our employees. Applying this measure is recognition that our growth strategy depends on engaged employees.

**Leadership Trust Score:** We use this score to further enhance accountability and to measure our collective effort to foster a work environment based on trust. It is derived from a question in our annual global employee survey that gauges employees’ trust in our leaders. We measure leadership trust by using the same methodology as we do to compute the Net Promoter Score (NPS).

## Value-Based Management

Our holistic view of the performance measures described above, together with our associated analyses, comprises the information we use for value-based management. We use planning and control processes to manage the compilation of these key measures and their availability to our decision-makers across various management levels.

SAP’s long-term strategic plans are the point of reference for our short-term and mid-term planning and controlling processes. We initially identify future growth and profitability

drivers at a highly aggregated level. In a first step, the resulting financial plan is broken down into (i) our deployment models “On Premise,” “Software as a Service/Platform as a Service,” “Infrastructure as a Service,” and “Business Networks”; and (ii) functions such as development, sales, and administration. In a second step, the planned total revenues and total expenses are generally allocated to the areas of functional responsibility of the individual members of the Executive Board (the board areas). If a board area represents not only a functional department but also has a responsibility for operating segments within this board area (for example, SAP Business Network segment), the allocation is done at the lower segment level. Budget adjustments may be applied during the year to reflect changes in priorities, to achieve efficiency targets and to reflect endogenous and exogenous factors. Such budget adjustments, as well as the Executive Board’s performance assessment, are handled at the board area level or at the lower level within a board area if representing an operating segment as outlined above. It is then the individual board member’s responsibility to break down the allocated budget adjustments. Based on an integrated portfolio process running in parallel to the budgeting process, we ensure aligned investment behavior across board areas with regards to specific solutions or solution areas. In a final step, customer-facing revenue targets and cost of sales and marketing targets are broken down into sales regions.

Based on our detailed annual plans, we determine the budget for the respective year. We also have processes in place to forecast revenue and profit on a quarterly basis, to quantify whether we expect to realize our financial goals, and to identify any deviations from plan. We continuously monitor the affected units in the Group to analyze these developments and define any appropriate actions. Our entire network of planning, control, and reporting processes is implemented in integrated planning and information systems, based on SAP software, across all organizational units so that we can conduct the evaluations and analyses needed to make informed decisions.

## Non-IFRS Financial Measures Cited in This Report

### Explanation of Non-IFRS Measures

We disclose certain financial measures such as revenue (non-IFRS), expense (non-IFRS), and profit measures (non-IFRS) that are not prepared in accordance with IFRS and are therefore considered non-IFRS financial measures. Our non-IFRS financial measures may not correspond to non-IFRS financial measures that other companies report. The non-IFRS financial measures that we report should only be considered in addition to, and not as substitutes for, or superior to, our IFRS financial measures.

We believe that the disclosed supplemental historical and prospective non-IFRS financial information provides useful information to investors because management uses this

information, in addition to financial data prepared in accordance with IFRS, to attain a more transparent understanding of our past performance and our anticipated future results. We use non-IFRS revenue and profit measures consistently in our internal planning and forecasting, reporting, and compensation, as well as in our external communications, as follows:

- Our management primarily uses these non-IFRS measures rather than IFRS measures as the basis for making financial, strategic, and operating decisions.
- The variable components of our Executive Board members’ and employees’ remuneration are based on revenue (non-IFRS), operating profit (non-IFRS), as well as new cloud bookings measures rather than the respective IFRS measures.
- The annual budgeting process for all management units is based on revenue (non-IFRS) and operating profit (non-IFRS) numbers rather than the respective IFRS financial measures.
- All forecast and performance reviews with all senior managers globally are based on these non-IFRS measures, rather than the respective IFRS financial measures.
- Both our internal performance targets and the guidance we provide to the capital markets are based on non-IFRS revenue and profit measures rather than the respective IFRS financial measures.

Our non-IFRS financial measures reflect adjustments based on the items below, as well as adjustments for the related income tax effects.

### Revenue (Non-IFRS)

Non-IFRS revenue measures have been adjusted from the respective IFRS financial measures by including the full amount of software support revenue, cloud subscriptions and support revenue, and other similarly recurring revenue that we are not permitted to record as revenue under IFRS due to fair value accounting for the contracts in effect at the time of the respective acquisitions.

Under IFRS, we record at fair value the contracts in effect at the time entities were acquired. Consequently, our IFRS software support revenue, IFRS cloud subscriptions and support revenue, IFRS cloud and software revenue, and IFRS total revenue for periods subsequent to acquisitions do not reflect the full amount of revenue that would have been recorded by entities acquired by SAP had they remained stand-alone entities. Adjusting revenue numbers for this revenue impact provides additional insight into the comparability of our ongoing performance across periods.

### Operating Expense (Non-IFRS)

Operating expense numbers that are identified as operating expenses (non-IFRS) have been adjusted by excluding the following expenses:



- Acquisition-related charges
  - Amortization expense/impairment charges of intangibles acquired in business combinations and certain stand-alone acquisitions of intellectual property (including purchased in-process research and development)
  - Settlements of preexisting business relationships in connection with a business combination
  - Acquisition-related third-party expenses
- Share-based payment expenses
- Restructuring expenses, that is, expenses resulting from measures which comply with the definition of restructuring according to IFRS.

We exclude certain acquisition-related expenses for the purpose of calculating operating profit (non-IFRS), operating margin (non-IFRS), and earnings per share (non-IFRS) when evaluating SAP's continuing operational performance because these expenses generally cannot be changed or influenced by management after the relevant acquisition other than by disposing of the acquired assets. Since management at levels below the Executive Board does not influence these expenses, we generally do not consider these expenses for the purpose of evaluating the performance of management units. For similar reasons, we eliminate share-based payment expenses as these costs are impacted by share price developments and other factors outside our control. We also eliminate restructuring expenses because they are volatile and mostly cannot be influenced by management at levels below the Executive Board.

## Operating Profit (Non-IFRS), Operating Margin (Non-IFRS), Effective Tax Rate (Non-IFRS), and Earnings per Share (Non-IFRS)

Operating profit, operating margin, effective tax rate, and earnings per share identified as operating profit (non-IFRS), operating margin (non-IFRS), effective tax rate (non-IFRS), and earnings per share (non-IFRS) have been adjusted from the respective IFRS measures by adjusting for the aforementioned revenue (non-IFRS) and operating expenses (non-IFRS) and the income tax effects thereon.

## Constant Currencies Information

We believe it is important for investors to have information that provides insight into our sales. Revenue measures determined under IFRS provide information that is useful in this regard. However, both sales volume and currency effects impact period-over-period changes in sales revenue. We do not sell standardized units of products and services, so we cannot provide relevant information on sales volume by providing data on the changes in product and service units sold. To provide additional information that may be useful to investors in breaking down and evaluating changes in sales volume, we present information about our revenue and various values and

components relating to operating profit that are adjusted for foreign currency effects.

We calculate constant currencies measures by translating foreign currencies using the average exchange rates from the comparative period instead of the current period.

## Free Cash Flow

Among other measures, we use free cash flow to manage our overall financial performance.

### Free Cash Flow

€ millions	2017	2016	Δ in %
Net cash flows from operating activities	5,045	4,628	9
Purchase of intangible assets and property, plant, and equipment (without acquisitions)	-1,275	-1,001	27
<b>Free cash flow</b>	<b>3,770</b>	<b>3,627</b>	<b>4</b>

## Usefulness of Non-IFRS Measures

We believe that our non-IFRS measures are useful to investors for the following reasons:

- Our revenue (non-IFRS), expense (non-IFRS), and profit (non-IFRS) measures, along with the “new cloud bookings” and “cloud backlog” measures (see above) provide investors with insight into management's decision making because management uses these measures to run our business and make financial, strategic, and operating decisions. We include the revenue adjustments outlined above and exclude the expense adjustments outlined above when making decisions to allocate resources. In addition, we use these non-IFRS measures to facilitate comparisons of SAP's operating performance from period to period.
- The non-IFRS measures provide investors with additional information that enables a comparison of year-over-year operating performance by eliminating certain direct effects of acquisitions, share-based compensation plans, and restructuring plans.
- Non-IFRS and non-GAAP measures are widely used in the software industry. In many cases, inclusion of our non-IFRS measures may facilitate comparison with our competitors' corresponding non-IFRS and non-GAAP measures.

## Limitations of Non-IFRS Measures

We believe that our non-IFRS financial measures described above have limitations including but not limited to the following:

- Without being analyzed in conjunction with the corresponding IFRS measures, the non-IFRS measures are

not indicative of our present and future performance, foremost for the following reasons:

- While our profit (non-IFRS) numbers reflect the elimination of certain acquisition-related expenses, no eliminations are made for the additional revenue or other income that results from the acquisitions.
- While we adjust for the fair value accounting of the acquired entities' recurring revenue contracts, we do not adjust for the fair value accounting of deferred compensation items that result from commissions paid to the acquired company's sales force and third parties for closing the respective customer contracts.
- The acquisition-related amortization expense that we eliminate in deriving our profit (non-IFRS) numbers is a recurring expense that will impact our financial performance in future years.
- The remaining acquisition-related charges that we eliminate in deriving our profit (non-IFRS) numbers are likely to recur should SAP enter into material business combinations in the future. Similarly, the restructuring expenses that we eliminate in deriving our profit (non-IFRS) numbers are likely to recur should SAP perform restructurings in the future.
- The revenue adjustment for the fair value accounting of the acquired entities' contracts and the expense adjustment for acquisition-related charges do not arise from a common conceptual basis. This is because the revenue adjustment aims to improve the comparability of the initial post-acquisition period with future post-acquisition periods, while the expense adjustment aims to improve the comparability between post-acquisition periods and pre-acquisition periods. This should particularly be considered when evaluating our operating profit (non-IFRS) and operating margin (non-IFRS) numbers as these combine our revenue (non-IFRS) and expenses (non-IFRS) despite the absence of a common conceptual basis.
- Our restructuring charges resulted in significant cash outflows in the past and could do so in the future. The same applies to our share-based payment expense because most of our share-based payments are settled in cash rather than shares.
- The valuation of our cash-settled share-based payments could vary significantly from period to period due to the fluctuation of our share price and other parameters used in the valuation of these plans.
- In the past, we have issued share-based payment awards to our employees every year and we intend to continue doing so in the future. Thus, our share-based payment expenses are recurring although the amounts usually change from period to period.

We believe that constant currencies measures have limitations, particularly as the currency effects that are eliminated

constitute a significant element of our revenue and expenses and could materially impact our performance. Therefore, we limit our use of constant currencies measures to the analysis of changes in volume as one element of the full change in a financial measure. We do not evaluate our results and performance without considering both constant currencies and nominal measures of revenue (non-IFRS) and operating profit (non-IFRS) measures on the one hand, and changes in revenue, operating expenses, operating profit, or other measures of financial performance prepared in accordance with IFRS on the other. We caution the readers of our financial reports to follow a similar approach by considering nominal and constant currencies non-IFRS measures only in addition to, and not as a substitute for or superior to, changes in revenue, operating expenses, operating profit, or other measures of financial performance prepared in accordance with IFRS.

Despite these limitations, we believe that the presentation of our non-IFRS measures and the corresponding IFRS measures, together with the relevant reconciliations, provide useful information to management and investors regarding present and future business trends relating to our financial condition and results of operations.

## Reconciliations of IFRS to Non-IFRS Financial Measures for the Years Ended December 31

Due to rounding, the sum of the numbers presented in the following table might not precisely equal the totals we provide.

€ millions, unless otherwise stated	2017					2016		
	IFRS	Adj.	Non-IFRS	Currency Impact	Non-IFRS Constant Currency	IFRS	Adj.	Non-IFRS
<b>Revenue measures</b>								
Cloud subscriptions and support	3,769	2	3,771	59	3,831	2,993	2	2,995
Software licenses	4,872	0	4,872	111	4,983	4,860	2	4,862
Software support	10,908	0	10,908	97	11,005	10,571	1	10,572
Software licenses and support	15,780	0	15,781	207	15,988	15,431	3	15,434
<b>Cloud and software</b>	<b>19,549</b>	<b>3</b>	<b>19,552</b>	<b>267</b>	<b>19,819</b>	<b>18,424</b>	<b>5</b>	<b>18,428</b>
Services	3,911	0	3,911	34	3,946	3,638	0	3,638
<b>Total revenue</b>	<b>23,461</b>	<b>3</b>	<b>23,464</b>	<b>301</b>	<b>23,765</b>	<b>22,062</b>	<b>5</b>	<b>22,067</b>
<b>Operating expense measures</b>								
Cost of cloud subscriptions and support	-1,660	233	-1,427			-1,313	247	-1,066
Cost of software licenses and support	-2,234	190	-2,044			-2,182	238	-1,944
Cost of cloud and software	-3,893	423	-3,471			-3,495	485	-3,010
Cost of services	-3,158	166	-2,991			-3,089	113	-2,976
<b>Total cost of revenue</b>	<b>-7,051</b>	<b>589</b>	<b>-6,462</b>			<b>-6,583</b>	<b>598</b>	<b>-5,985</b>
<b>Gross profit</b>	<b>16,410</b>	<b>592</b>	<b>17,001</b>			<b>15,479</b>	<b>603</b>	<b>16,081</b>
Research and development	-3,352	281	-3,072			-3,044	201	-2,843
Sales and marketing	-6,924	700	-6,225			-6,265	549	-5,716
General and administration	-1,075	138	-936			-1,005	119	-886
Restructuring	-182	182	0			-28	28	0
Other operating income/expense, net	1	0	1			-3	0	-3
<b>Total operating expenses</b>	<b>-18,584</b>	<b>1,889</b>	<b>-16,694</b>	<b>-151</b>	<b>-16,845</b>	<b>-16,928</b>	<b>1,494</b>	<b>-15,434</b>
<b>Profit numbers</b>								
<b>Operating profit</b>	<b>4,877</b>	<b>1,892</b>	<b>6,769</b>	<b>151</b>	<b>6,920</b>	<b>5,135</b>	<b>1,498</b>	<b>6,633</b>
<b>Other non-operating income/expense, net</b>	<b>-36</b>	<b>0</b>	<b>-36</b>			<b>-234</b>	<b>0</b>	<b>-234</b>
Finance income	463	0	463			230	0	230
Finance costs	-278	0	-278			-268	0	-268
<b>Financial income, net</b>	<b>185</b>	<b>0</b>	<b>185</b>			<b>-38</b>	<b>0</b>	<b>-38</b>
<b>Profit before tax</b>	<b>5,026</b>	<b>1,892</b>	<b>6,918</b>			<b>4,863</b>	<b>1,498</b>	<b>6,361</b>
Income tax expense	-970	-592	-1,563			-1,229	-474	-1,703
<b>Profit after tax</b>	<b>4,056</b>	<b>1,300</b>	<b>5,356</b>			<b>3,634</b>	<b>1,024</b>	<b>4,658</b>
Attributable to owners of parent	4,018	1,300	5,318			3,646	1,024	4,671
Attributable to non-controlling interests	38	0	38			-13	0	-13
<b>Key ratios</b>								
<b>Operating margin (in %)</b>	<b>20.8</b>		<b>28.9</b>		<b>29.1</b>	<b>23.3</b>		<b>30.1</b>
<b>Effective tax rate (in %)</b>	<b>19.3</b>		<b>22.6</b>			<b>25.3</b>		<b>26.8</b>
<b>Earnings per share, basic (in €)</b>	<b>3.36</b>		<b>4.44</b>			<b>3.04</b>		<b>3.90</b>

## Non-IFRS Adjustments by Functional Areas

€ millions	2017					2016				
	IFRS	Acqui- sition- Related	SBP <sup>1)</sup>	Restruc- turing	Non-IFRS	IFRS	Acqui- sition- Related	SBP <sup>1)</sup>	Restructuring	Non- IFRS
Cost of cloud and software	-3,893	307	115	0	-3,471	-3,495	395	89	0	-3,010
Cost of services	-3,158	8	158	0	-2,991	-3,089	12	101	0	-2,976
Research and development	-3,352	11	269	0	-3,072	-3,044	10	190	0	-2,843
Sales and marketing	-6,924	258	442	0	-6,225	-6,265	257	292	0	-5,716
General and administration	-1,075	3	135	0	-936	-1,005	6	113	0	-886
Restructuring	-182	0	0	182	0	-28	0	0	28	0
Other operating income/expense, net	1	0	0	0	1	-3	0	0	0	-3
<b>Total operating expenses</b>	<b>-18,584</b>	<b>587</b>	<b>1,120</b>	<b>182</b>	<b>-16,694</b>	<b>-16,928</b>	<b>680</b>	<b>785</b>	<b>28</b>	<b>-15,434</b>

<sup>1)</sup> Share-based payments

# Employees and Social Investments

88,543

Employees at SAP  
(in FTEs)

79%

Business Health  
Culture Index

85%

Employee Engagement  
Index

## Driving Customer Success with the Best Talent in the Market

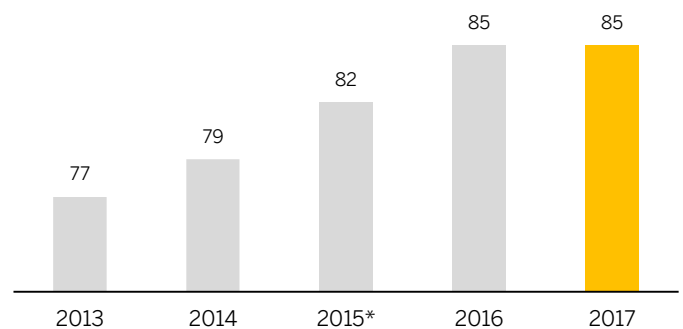
Our people are key in helping our customers to successfully drive their digital transformation. We are fully committed to enabling our employees to grow their skills at every stage of their career at SAP.

Our human resources (HR) strategy focuses on creating a workplace that can attract and retain the best talent in the market. Using our own cloud technology and following our core principle of Run Simple, we transform the way we hire, develop, and retain our people. At the same time, our HR strategy allows us to create a culture at SAP that can successfully deal with the agility and scope of a digital workplace driven by purpose. This culture inspires innovation, leads change, and ultimately creates employee satisfaction. Our HR team stays focused on delivering seamless employee experiences by following three guiding principles: simplification, standardization, and consumer satisfaction for applicants, employees, and managers.

## Listening to Our People

The People Survey 2017 results are very positive. One of our most important survey dimensions, the Employee Engagement Index (EEI), remained very strong at 85%. For 2018 through to 2020, we aim to keep our Employee Engagement Index between 84% and 86%.

Employee Engagement Index  
Percent



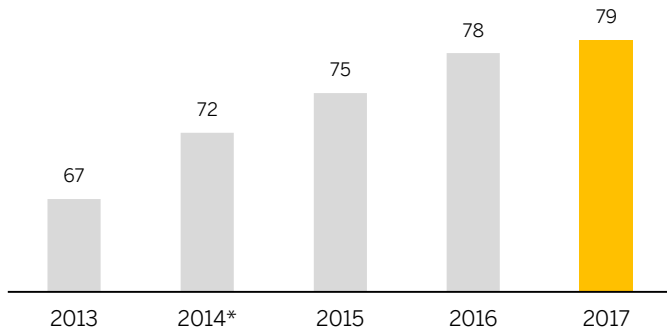
\*The EEI score for 2015 was recalculated from 81% to 82% based on updated questions.

In 2018, we will continue with two focus topics: simplification and innovation. In both areas, we see great improvements based on numerous initiatives that have been kicked off (e.g. Run Simple at SAP, The Innovation Roundtable). The overall Simplification score, which is based on various questions speaking to internal and external processes, improved by 3 percentage points to 57%, continuing the positive trend since 2015. The overall Innovation score improved by a strong 5 percentage points to 80%.

Additionally, also our Business Health Culture Index (BHCI) increased, which shows that we are sustainably developing our organization. The BHCI assesses the degree to which our workplace culture supports people's well-being, work-life balance, and organizational health. The positive trend of the BHCI continued with a score of 79% (2016: 78%).

## Business Health Culture Index

Percent



\*The BHCI score for 2014 was recalculated based on updated questions.

## Getting the Best Talent

While staying focused on a diverse workforce spanning different generations, “early talent” hires (people with professional experience of up to two years) continued to be a key priority. In 2017, approximately 25% of our external hires fell into this category. To help attract this talent, we successfully launched a new recruitment campaign involving SAP employees. Featuring the slogan, “Bring everything you are. Become everything you want.”, the campaign explores what success means to our people.

In 2017, SAP received 281 global and local awards for diversity, inclusion, employer attractiveness, and people satisfaction.

## Collaborating with Educational Institutions

SAP works closely with over 3,300 universities on events, executive lectures, office visits, competitions, student club sponsorships, and Webinars to recruit top students and graduates and to integrate the latest SAP technologies into teaching. In addition, we sponsor several technical competitions (for example, SAP InnoJam) and diversity conferences (for example, Grace Hopper Celebration) that enable us to meet outstanding candidates.

In 2017, more than 1,000 students were enrolled in our global vocational training program. After completing their studies, 85% of these students stayed with SAP.

## Developing Careers

At SAP, we continue to invest in the professional development of all our people. In 2017, we focused on our career path for experts, who offer specialized expertise, drive innovation, and support our strategy to run better. The expert career path is

offered in parallel to our manager development track. We also successfully piloted two flagship programs for experts.

Based on a successful early-adopter initiative in 2016, we also rolled out the SAP Talk approach globally in 2017. This approach fosters a continuous dialog and on-going feedback on professional development between managers and employees. Results from a survey in August 2017 showed that our people are already embracing this new philosophy.

By investing in professional development, we stay focused on staff retention. Our overall retention rate in 2017 was 94.6% compared to 94.3% in 2016 (recalculated as per new definition). We define retention as the ratio of the average number of employees minus the employees who voluntarily departed, to the average number of employees (all in full-time equivalents or FTEs). In 2017, we modified our definition of “voluntarily departing employees” used in calculating the retention rate. Under our new definition, employees who depart under restructuring plans are not considered voluntary departures even if their departure is the result of the employee’s decision to accept an offer of benefits in exchange for the termination of employment. Prior period numbers have been adjusted to reflect this change in definition.

The average tenure with SAP remains at a high level (7.2 years in 2017 and 6.9 years in 2016). The high loyalty of our people is a true testimony of SAP being an employer of choice.

## Engaging Our People Through Impactful Leadership

Building trust in leaders is a key ingredient for continuously high employee engagement. By the end of 2017, 58.9% of leaders at SAP completed our flagship leadership development program. In 2017, leadership trust continued to improve, with a Net Promoter Score (NPS) of 61% (2016: 57%).

## Making Learning a Great Experience for Everyone

We make high-quality learning opportunities easily accessible to all employees through our cloud-based learning management system, based on SAP SuccessFactors solutions. In 2017, we provided 1,136,978 courses (without compliance trainings) to 84.7% of our employees.

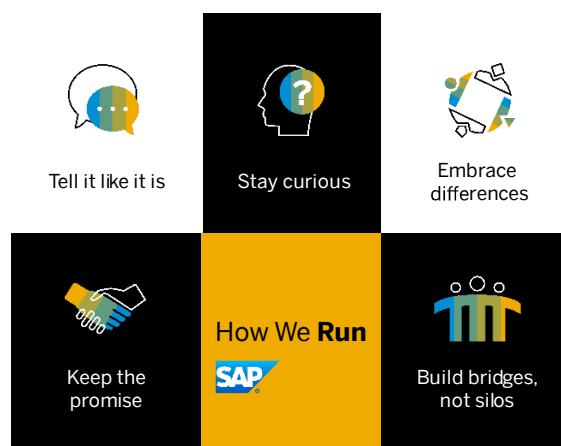
Self-paced online programs that include language learning, as well as technical and soft-skills training courses are open to all employees. Our innovative peer-to-peer learning portfolio encompasses coaching, mentoring, job shadowing, and facilitation opportunities.

# Creating a Workplace that Drives Innovation, Performance, and Engagement

The following benefits and activities are paramount in maintaining an attractive workplace:

- **SAP share purchase program:** Own SAP is a share purchase plan for SAP employees. In 2017, the program was awarded the prestigious Global Equity Organization Award for “Best Plan Effectiveness.” For more information, see the Notes to the Consolidated Financial Statements section, [Note \(27\)](#).
- **Hasso Plattner Founders’ Award:** In its fourth year, this prestigious award provides the highest internal employee recognition at SAP for delivering on our vision and strategy. In 2017, the award went to the “SAP Transformation Navigator” initiative, which transformed customer criticism into a tool valued by SAP users and viewed by analysts as a competitive advantage for the company. For more information about the SAP Transformation Navigator, see section [Products, Research & Development, and Services](#).
- **Intrapreneurship program:** The program identifies high-potential entrepreneurial employees at SAP and develops them into successful leaders through the SAP.iO Venture Studio program. In 2017, more than 1,000 employees jumpstarted their entrepreneurial journeys.
- **SAP SuccessFactors solutions:** Like other SAP support functions do for their respective solutions, approximately 220 HR experts supported sales teams in deals related to SAP SuccessFactors solutions. Furthermore, we continued the Klaus Tschira Human Resources Innovation Award. The award honors SAP partners and customers that have contributed a unique and innovative solution in the field of human resources.
- **SAP Alumni Network:** This network and online community provides a platform to reconnect with former colleagues and to unleash the power of a trusted network built on long-term relationships. In 2017, community members included 3,800 former and 3,400 current SAP employees.
- **People Weeks:** In 2017, SAP again sponsored an event designed for employees to exchange ideas and cultivate a greater connection across cultures. With the motto “Experience Your Future,” People Weeks 2017 reached over 35,000 employees worldwide through local activities in 67 countries.
- **“How We Run”:** Our “How We Run” behaviors continue to be the cornerstone of our value-driven culture.

Our “How We Run” behaviors



## Promoting an Inclusive and Bias-Free Culture

An inclusive, bias-free workplace motivates, attracts, and helps us retain employees and enables us to better serve our customers. It also leads to improved innovation and helps us think through challenges in new ways.

## Closing the Gender Gap

SAP is the first multinational technology company to be awarded the Economic Dividends for Gender Equality (EDGE) certificate. EDGE recognizes our global commitment to gender diversity and equality in the workplace.

In June 2017, six months ahead of schedule, SAP achieved its publicly stated goal of filling 25% of our management positions with women. On December 31, 2017, the ratio of women in management positions reached 25.4% (2016: 24.5%). The Executive Board has further extended its commitment to increase the percentage of women in management positions by 1% each year with a target of 30% by year-end 2022.

Throughout 2017, SAP sponsored and hosted events to attract, develop, and support women around the world. Additional ongoing initiatives include the Women’s Professional Growth Webinar series, the grassroots Business Women’s Network which celebrated its 10th anniversary in 2017, and the Women@SAP online community. In addition, SAP offers the Leadership Excellence Acceleration Program (LEAP), a highly respected and award-winning development program that helps prepare high-potential women for leadership roles at SAP.

## Creating an Inclusive Environment

Working closely with ethnicity-based employee network groups such as the Black Employee Network (BEN) and Latinos@SAP, SAP launched several important initiatives in 2017 in the United States. An example is Project Propel, an effort dedicated to enabling historically black colleges and universities and minority-serving institutions across the United States to build the next generation of technology talent.

Activities to build an inclusive environment at SAP include:

- **Focus on Insight – Diversity and Inclusion training program:** Our global learning curriculum contributes to a shared understanding of the importance and benefits of a diverse workplace.
- **Business Beyond Bias:** The initiative includes significant investment in programs and technology that support greater diversity. This helps eliminate bias not only at SAP but also in customer and partner organizations.
- **Autism at Work program:** 113 employees with autism currently work at SAP.
- **Global Pride@SAP employee network:** This network has grown to more than 8,000 members, sponsoring numerous activities and initiatives that support lesbian, gay, bisexual, and transgender people and their allies.
- **Cross-generational mentoring:** This program connects SAP employees from different generations to form networks, share knowledge, and learn from each other.

## Caring for the Health and Well-Being of Our Employees

We believe that the way we care for our people is closely linked to our business success. When people are healthy, respected, and cared for, it results in higher productivity, engagement, innovation, and customer satisfaction. Consequently, we invest in extensive employee benefits and programs. These include:

- **Run Your Way initiative on Fit@SAP:** This program encourages employees of all generations and physical conditions to integrate physical activity into their daily life. In 2017, approximately 8,700 people used subsidized activity trackers.
- **Employee Assistance Program (EAP):** This program provides employees with free, confidential, and impartial expert advice and support for life's challenges, 24 hours a day, seven days a week.
- **Corporate Oncology Program for Employees (COPE):** Available in Canada, Germany, United Kingdom, and the United States, the program provides SAP employees facing cancer with access to an individual molecular genetic tumor analysis and interpretation.
- **Healthy Leadership:** Various offerings to support SAP leaders in fostering a healthy mindset and culture, such as

healthy leadership training, personalized executive health and well-being program, etc.

- **Health Ambassador Network:** This global network strengthens our focus on health and well-being in SAP office locations.
- **Local health and well-being offerings:** Services such as health check-ups, skin screening, on-site fitness centers and activity classes, mindfulness practice, eyesight testing, and health awareness sessions are available to employees in various office locations.

## Headcount and Personnel Expense

As of December 31, 2017, we had 88,543 full-time equivalent (FTE) employees worldwide (December 31, 2016: 84,183). This represents an increase in headcount of rounded 4,361 FTEs in comparison to 2016. The average number of employees in 2017 was 86,999 (2016: 80,609).

We define headcount in FTE as the number of people on permanent employment contract considering their staffing percentage. Students, individuals employed by SAP who are currently not working for reasons such as maternity leave, and temporary employees with limited contracts of less than six months are excluded from our figures. The number of temporary employees is not material.

Our personnel expense for each employee increased to approximately €134,000 in 2017 (2016: approximately €127,000). This increase is primarily attributable to an increase of share-based payment expenses and employee-related restructuring expenses in 2017 compared to the previous year. The personnel expense per employee is defined as the overall personnel expense divided by the average number of employees.

For more information about employee compensation, see the Notes to the Consolidated Financial Statements section, [Note \(7\)](#).



## Number of Employees by Region and Function

Full-time equivalents	December 31, 2017				December 31, 2016				December 31, 2015			
	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total
Cloud and software	5,869	3,895	4,719	14,482	6,406	4,184	5,412	16,002	6,095	3,920	4,976	14,991
Services	7,536	4,878	4,965	17,379	6,535	4,119	3,967	14,621	6,482	3,812	3,574	13,868
Research and development	11,349	5,250	8,273	24,872	10,525	4,860	7,977	23,363	9,676	4,233	7,029	20,938
Sales and marketing	9,196	9,169	4,854	23,219	8,542	8,999	4,435	21,977	7,683	7,766	3,974	19,422
General and administration	2,676	1,781	1,047	5,504	2,629	1,746	1,018	5,393	2,434	1,653	937	5,024
Infrastructure	1,732	855	501	3,087	1,584	788	454	2,827	1,535	783	425	2,743
<b>SAP Group (December 31)</b>	<b>38,357</b>	<b>25,827</b>	<b>24,359</b>	<b>88,543</b>	<b>36,222</b>	<b>24,696</b>	<b>23,265</b>	<b>84,183</b>	<b>33,906</b>	<b>22,166</b>	<b>20,914</b>	<b>76,986</b>
Thereof acquisitions	149	133	7	289	37	172	0	209	73	0	0	73
<b>SAP Group (months' end average)</b>	<b>37,512</b>	<b>25,459</b>	<b>24,029</b>	<b>86,999</b>	<b>34,932</b>	<b>23,532</b>	<b>22,145</b>	<b>80,609</b>	<b>33,561</b>	<b>21,832</b>	<b>19,788</b>	<b>75,180</b>

Due to reorganizations within our SAP Digital Business Services in 2017 employees were partially reallocated from cloud and software to services. Information for current year are therefore not fully comparable to prior years.

## Engaging in Social Investments

At SAP, we are committed to helping the world's youth gain the skills they need to thrive in the digital economy. To achieve this, we leverage our talents, technology and non-governmental partnerships. Our primary focus lies on building capacity for organizations putting young people on the path of meaningful employment, and on supporting digital literacy programs for youth to increase their employability in the digital economy.

In 2017, our employee volunteers gave about 298,000 hours to our corporate social responsibility (CSR) projects impacting four million lives. SAP also donated a total of €24 million to workforce development and youth entrepreneurship projects around the globe.

## Advancing Corporate Volunteering

In addition to ongoing development of numerous volunteering programs for our own employees, we are also involved in helping other organizations to create their own employee volunteering initiatives. This year, SAP collaborated with corporate volunteering experts from the Realized Worth Institute to offer an online course through our openSAP platform. Aimed at volunteer leaders, the course focused on empowering global workforces to tackle some of our biggest social and economic challenges. Participants learned how to mobilize volunteers' empathy and received practical guidance on setting up impactful programs and running volunteer events. In short, the course offered the skills needed to help companies advance volunteering in their organization.

Another initiative that has seen SAP lead the way in corporate volunteering is the IMPACT 2030 initiative. Co-founded by SAP, this business-led effort is designed to unite companies in their corporate volunteering efforts to address the United Nations' Agenda 2030 for Sustainable Development. It encourages companies everywhere, regardless of size and location, to support the achievement of global sustainable development goals through their community service programs.

## Preparing Young People for the Future of Work

With employers reporting a significant skills gap in the tech sector, SAP is partnering with non-governmental organizations, such as TechSoup, Galway Education Center, and the ASEAN Foundation, to prepare young people for the future of work. Focusing on workforce readiness we run numerous digital literacy programs across the globe aimed at 1.4 million teens, students, and young professionals to help them thrive in the digital economy.

One such program is Latin Code Week, an initiative that aims to empower young people to become active participants in the economic growth of Latin America. This year, the program has helped 1,500 18–24 year olds in nine countries to develop the skills they need to open up new employment opportunities in the tech industry. As well as technical training, participants gain valuable business skills in areas such as empathy, teamwork, leadership, and entrepreneurship.

Another important initiative co-created by SAP in collaboration with our customers is the Code Unnati project. By fostering digital literacy, Code Unnati is opening the door to meaningful employment opportunities for young people, and contributing to social and economic development in India.

## **Helping Non-Governmental Organizations Run Better**

Non-governmental organizations and social enterprises are instrumental in addressing our world's most pressing societal challenges. Focusing on organizations that put young people on the path to success, SAP provided significant capacity building for such organizations across the globe. Next to financial investments SAP supports these organizations with our key pro bono volunteering initiative, the SAP Social Sabbatical. In 2017 alone we saw 217 SAP employees making an in-kind contribution of €2.7 million (time frame Q1-Q3) through their expertise and know-how to advance the social impact of numerous organizations.

An example is the work carried out by SAP employees in Christchurch, New Zealand. In 2017, our volunteers engaged with four organizations that were established following the catastrophic 2010 and 2011 earthquakes. Initiatives such as Cultivate Christchurch, Ethique, Kilmarnock, and Science Alive! are all playing a key role in the ongoing revitalization of the city, with regards to both business and the post-traumatic recovery of its citizens. Teams taking part in the SAP Social Sabbatical initiative were embedded within these organizations to build operational capacity, identify key strengths and weaknesses, and inform strategic growth decisions for the ultimate benefit of 5,190 estimated beneficiaries. With our partner Ākina Foundation, SAP was integral in bringing over 1,600 social entrepreneurs, policy makers and corporates together in Christchurch at the Social Enterprise World Forum to help define the next steps in advancing the social enterprise sector.

# Energy and Emissions

**-14%**

carbon emissions compared to last year

**-3%**

energy consumption compared to last year

**100%**

renewable electricity

## Being a Front-Runner for a Greener Way of Working

As a role model for sustainable business operations, SAP takes its environmental responsibilities seriously. We believe that by running cleaner, greener operations, we can make a difference to our planet. In addition, we aim to enable our customers to reduce their overall carbon footprint through our software.

Our global environmental policy promotes a more productive use of resources by providing transparency in environmental issues, driving efficiency, and leveraging transformational strategies. It also outlines our environmental goals.

Our chief sustainability officer and our dedicated sustainability organization coordinate our response to climate change.

Facilities management staff design and operate our facilities based on robust environmental standards. In addition, our IT operations personnel is committed to optimizing energy consumption in our data centers. We assess our environmental performance in quarterly management reviews.

This year, we continued to roll out our global environmental management system based on the ISO 14001 standard. We plan for the system to cover operations of about 70% of employees globally by 2018. At the end of 2017, 48 SAP sites in 28 countries (49% of employees) have been certified and have implemented ISO 14001.

## Cutting Carbon Emissions

In 2017, we announced a commitment to making our operations carbon neutral by 2025. This is the next logical step in our long-term greenhouse gas (GHG) avoidance strategy, which also includes an undertaking to reduce GHG emissions to levels of the year 2000 by 2020. This year, we met our 2020 target and are now well on track to becoming carbon neutral. The target includes all direct emissions from running our business as well as a selected subset of indirect emissions from supply chains and services.

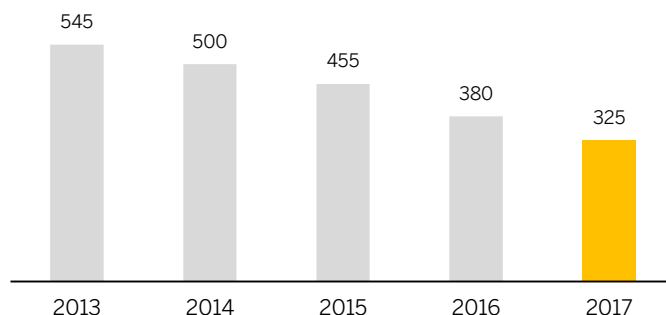
In 2017, SAP also became the first German company to be approved for the Science-Based Targets Initiative. As a member

of this initiative, our science-based climate targets reflect the level of decarbonization required to keep the global temperature increase below two degrees Celsius compared to pre-industrial temperatures. This represents a reduction in emissions by SAP of 85% of our 2016 emissions by 2050, including energy consumption of our products in use at our customers.

A number of initiatives harness innovative technologies to help us run our operations in a way that minimizes our impact on the environment. In addition, our investment in renewable electricity certificates and carbon credits enables us to support sustainability projects across the globe.

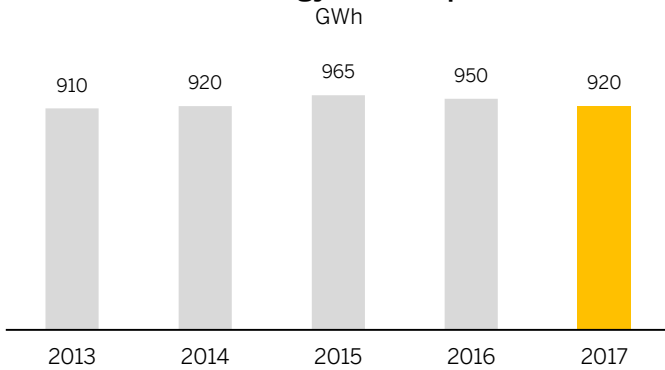
### Total Net Emissions

kilotons CO<sub>2</sub>

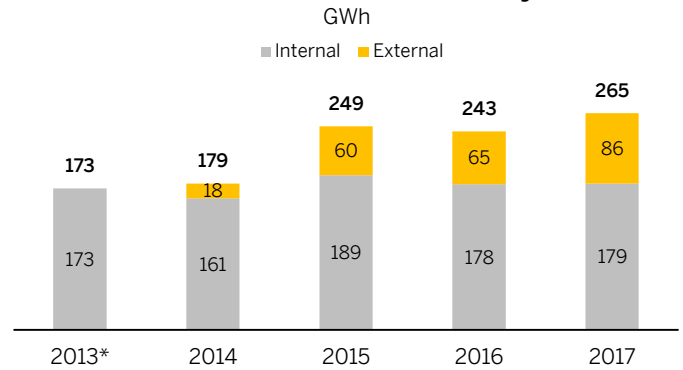


In addition to our long-term commitment for 2025, we have derived annual targets for our internal operational steering. In 2017, we outperformed our annual target to reduce our emissions to 380 kilotons (kt) of CO<sub>2</sub> by 55 kt, thus already fulfilling our 2020 target. This result stems primarily from a decrease in company car emissions as well as compensation with carbon emission offsets. Our focus on carbon emissions has contributed to a cumulative cost avoidance of €206 million in the past three years, compared to a business-as-usual scenario based on 2007. We achieved 45% of this cost avoidance in 2017.

## Total Energy Consumption



## Total Data Center Electricity



## Strengthening Our “Green Cloud”

At SAP, we have tied our business strategy to our environmental strategy by creating a “green cloud” powered by 100% renewable electricity. As more business moves to the cloud, data centers are a key part of how SAP provides solutions to our customers. By using our green cloud services, customers can significantly reduce their carbon footprint. Given the increasing data center capacity and an increasing energy consumption, our data centers have become a primary focus of our carbon reduction efforts.

We have introduced initiatives to drive efficiency and innovation with respect to our buildings, data center operations, and infrastructure. For example, in 2017, one of our main data centers in Rot, Germany, had a very efficient power usage effectiveness (PUE) of 1.36.

## Committing to 100% Renewable Electricity

Our commitment to 100% renewable electricity is crucial to making our operations more sustainable. While SAP produces a small amount of renewable electricity through solar panels in some locations, we rely primarily on the purchase of renewable energy certificates (RECs) to achieve our target of 100% renewable electricity. We only invest in Gold Standard RECs, which support renewable energy projects that meet robust criteria in terms of environmental integrity, stakeholder inclusivity, safeguards, and reporting and verification.

\*We started reporting our external data center energy consumption in 2014.

## Helping Our Customers Run Greener Operations

The vast majority of our overall emissions result from the use of our software. When our customers run SAP software on their hardware and on their premises, the resulting carbon footprint is about 30 times the size of our own net carbon footprint. To address this, we have developed a downstream emissions strategy to help our customers, hardware providers, and others run greener operations. One of the most important ways we help our customers reduce their energy usage and emissions is by managing their SAP systems through cloud services provided by our carbon-neutral green cloud offerings. In addition, the solutions in our portfolio enable our customers to manage their resources, such as electricity, in an efficient manner.

The SAP HANA platform also plays a vital role in helping our customers cut their carbon emissions. By combining the worlds of analytic and transactional data into one real-time, in-memory platform, it can help create much leaner operations, further simplifying the system landscape and reducing energy consumption.

SAP also works with customers to optimize their on-premise landscapes so that they consume less energy. We achieve this by helping them decommission legacy systems, archive unused data, and consolidate business applications, as well as virtualize their system landscape.

# Driving Environmental Initiatives Throughout SAP

We continuously pursue strategies to help us achieve our goal of reducing emissions at a time of ongoing growth in our business.

Key initiatives for 2017 included the following:

- **EKOenergy certification**

Most of our renewable electricity is purchased on the electricity market and is not produced by SAP. As recommended by the Greenhouse Gas Protocol and CDP, we actively look for the best available quality. Therefore, all of our purchased renewable electricity is EKOenergy certified. EKOenergy is the international not-for-profit ecolabel for energy. It certifies electricity from renewable energy installations that fulfil additional sustainability criteria. Through the purchase of EKOenergy, we also contribute to EKOenergy's Climate Fund, used to finance solar projects tackling energy poverty.

- **Electric vehicles**

As a result of our business expansion, the number of SAP employees eligible for a company car has increased annually. We want to ensure that the resulting growth in our car fleet does not undo our successes in cutting emissions. To help address this, SAP aims to increase the number of electric vehicles (battery electric vehicles and plug-in hybrid electric vehicles) in our company car fleet from 5% at the end of 2017 to 20% by 2020.

All electric company cars charged at SAP are powered with 100% renewable electricity. In addition, in Germany, we provide employees with an incentive to switch to electric alternatives by offering a battery subsidy that partially offsets the higher costs of an electric vehicle.

- **Internal carbon pricing for business flights**

We continue with our program introduced in 2015 to reduce the impact of air travel by SAP employees. In addition to avoiding business flights by investing in virtual collaboration and communication technologies, we invest in carbon emission offsets for air travel in the majority of countries we travel from by charging an internal carbon price. This offset effort resulted in a compensation of 135 kt in 2017.

- **Investment in carbon credits**

In 2017, we continued to realize the benefits of our investment in the Livelihoods Fund. Several years ago, we made a commitment to invest €3 million covering a 20-year participation in a fund that supports social causes as well as the sustainability of agricultural and rural communities worldwide. The returns from this unique investment in the Livelihoods Fund consist of high-quality carbon credits. Following the success of this scheme, we plan to invest in a second Livelihoods Fund in 2018, increasing our commitment to sustainable initiatives. In 2017, the carbon credits we received helped us to offset our carbon footprint by 21.4 kt.

# Financial Performance: Review and Analysis

**+6%**

cloud and software revenue (IFRS)

**+12%**

profit after tax (IFRS)

**+26%**

new cloud bookings

## Economy and the Market

### Global Economic Trends

The global economy continued to expand at a solid rate in 2017, and the recovery showed signs of worldwide synchronization. This conclusion was drawn by the European Central Bank (ECB) in its December 2017 Economic Bulletin<sup>1</sup>. The document describes the sustained pace of expansion of the global economy, which became more broad-based throughout the year. However, it elaborates that in advanced economies, rates of investment fell in the wake of the financial crisis, driven by the ensuing weakened expectations of demand prospects together with tighter financial conditions and heightened uncertainty. According to the ECB, investment was also lower in emerging market economies in 2017, in particular in commodity-exporting countries.

In the Europe, Middle East, and Africa (EMEA) region, the ECB found a strong pace of economic expansion in the euro area in 2017, supported by growth in private consumption as well as exports benefiting from the global recovery. Also, according to the ECB's December 2017 Economic Bulletin, economic activity in central and eastern European countries accelerated in 2017, driven by a rebound in investment and strong private consumption. Even Russia, after its previous deep recession, managed an economic recovery in 2017, states the ECB.

As for the North America and Latin America (Americas) region, U.S. economic activity expanded at a solid pace in 2017, despite the impact of recent hurricanes, reports the ECB. Growth in investment and consumption strengthened domestic demand in the United States. Brazil was also in recovery throughout the year, even though political uncertainties continuously weighed on its business investments and consumer spending.

The Asia Pacific Japan (APJ) region produced a robust real GDP growth in Japan in 2017. This was due to strengthening foreign demand, growing private investments, and easing financing

conditions. In China, economic activity expanded at a significant pace, supported by resilient consumption and a still stable housing market, finds the ECB. Finally, world economic activity was also supported by India.

### The IT Market

In 2017, IDC (International Data Corporation), a U.S.-based market research firm, observed "tremendous" momentum and influence of digital transformation on technology spending worldwide, spanning all geographies and industries<sup>2</sup>. Digital transformation became the source of innovation and creativity for new business models, many of which were subscription/cloud based<sup>3</sup>. Therefore, in 2017, the growing enterprise focus on digital transformation brought about expanding demand for cloud services, surrounding technologies as well as professional and management services<sup>4</sup>, explains IDC. Additionally, it states that the cloud delivery and consumption model has by now revolutionized the entire IT industry, shifting many traditional IT apps and workloads to the "as a service" model<sup>4</sup> over the past year as organizations looked to become more productive, improve collaboration, and drive continuous innovation<sup>5</sup>.

Migrating or expanding existing on-premises and new workloads to the cloud was in most cases accompanied by an immediate or eventual reduction in capital expenditure for data center updates or expansion as well as a decline in on-premises operational expenses<sup>5</sup>, says IDC. Hence, IT spending was increasingly transferred from hardware to software in 2017, and most providers with perpetually licensed software were undergoing a major transition toward subscription and cloud<sup>3</sup>.

Under these circumstances, software spending rebounded strongly to US\$301.6 billion in 2017 (services spending to US\$513.2 billion)<sup>2</sup>, estimates IDC. In this calculation, a "hybrid" management of complex environments represented the largest percentage with multiple public clouds, private clouds, and traditional systems that needed to be interconnected,

integrated, and collectively managed<sup>4</sup>. The second largest percentage featured managed and professional services around cloud adoption, accounting for one third of all cloud-related spending<sup>4</sup>, says IDC.

Over the past months, IDC monitored cloud services suppliers introducing a steady stream of innovative IT services, including Internet of Things back-end services, data services, blockchain services, and artificial intelligence-related services<sup>4</sup>. Therefore, IDC calls the cloud the "launch pad" for virtually all IT innovation<sup>4</sup>.

For example, asset-intensive industry segments in 2017 rapidly expanded their investments in IoT equipment and connected processes as well as connected finished products and services<sup>5</sup>. At the same time, according to IDC, more enterprises began to view data as an asset and invested more in technology, helping them to gain greater awareness of their data and to assess its value. Accordingly, nearly 50% of large enterprises generated revenue from data as a service, sale of raw data, derived metrics, insights, and recommendations in 2017<sup>6</sup>, reports IDC.

Furthermore, the blockchain technology as a foundation for digital trust<sup>6</sup> became more important in 2017, observes IDC: While security concerns used to keep enterprises from moving to the cloud in earlier years, enhanced security capabilities available from service providers turned out to be a major incentive to move to the cloud in 2017<sup>4</sup>. Finally, IDC saw "artificial intelligence everywhere"<sup>6</sup> in 2017 and finds this technology demonstrating its potential in smartphones, automobiles, aircrafts, cybersecurity, digital warfare, and on the Internet<sup>2</sup>. According to IDC, worldwide revenue for cognitive and artificial intelligence systems reached US\$12.5 billion in 2017, an increase of 59.3% over 2016<sup>5</sup>.

Sources:

<sup>1</sup> European Central Bank, Economic Bulletin, Issue 8/2017, Publication Date: December 28, 2017 (<http://www.ecb.europa.eu/pub/pdf/ecbu/eb201708.en.pdf>)

<sup>2</sup> IDC FutureScape: Worldwide Digital Transformation 2018 Predictions, Doc #US43154617, October 2017

<sup>3</sup> IDC Market Forecast: Software License, Maintenance & Subscription Forecast, 2017-2021, Doc #US42825517, July 2017

<sup>4</sup> IDC Worldwide Whole Cloud Forecast, 2017-2021, Doc #US43215817, December 2017

<sup>5</sup> IDC FutureScape, Worldwide Cloud 2018 Predictions, Doc # US42014717, October 2017

<sup>6</sup> IDC FutureScape: Worldwide IT Industry 2018 Predictions, #US43171317, October 2017

## Impact on SAP

The global trend of digital transformation has been a major business driver for SAP, and the broad adoption of cloud solutions drove our success. Our consistent strategy of innovation and growth and our investments into new technologies to help our customers become "intelligent enterprises" paid off.

We saw strong momentum across our entire portfolio and in all regions, and the growth of our more predictable revenue share signaled trust in SAP.

## Overall Financial Position

### Executive Board's Assessment

In 2017, we again met all our financial targets and now have consistently either met or exceeded our targets since we announced our mid-term ambition three years ago. In fact, we have hit all guidance metrics even where in some cases those metrics were raised multiple times.

We delivered robust top line growth and continued to expand our operating profit. On top of that, our cash generation and EPS growth remained strong.

Even with fast growth in the cloud, our software revenue grew again. SAP's rapidly expanding cloud business together with solid growth in support revenue continued to drive the share of more predictable revenue. Our investments in the cloud are paying off. This, together with continuing improvements in efficiency and cost ratios, paves the way for the strong growth and margin expansion we expect in 2018 and beyond.

The rapid customer adoption of SAP S/4HANA and our other cloud solutions give us enormous confidence to carry this momentum into 2018. Our performance, our portfolio, and our pipeline make us confident that we will deliver on our mid-term ambitions.

### Performance Against Our Outlook for 2017 (Non-IFRS)

Our 2017 operating profit-related goals and published outlook were based on our non-IFRS financial measures. For this reason, in the following section we discuss performance against our outlook only in terms of non-IFRS numbers derived from IFRS measures. The subsequent section about IFRS operating results discusses numbers only in terms of the International Financial Reporting Standards (IFRSs), so the numbers in that section are not expressly identified as IFRS numbers.

### Outlook for 2017 (Non-IFRS)

At the beginning of 2017, we projected that our 2017 non-IFRS cloud subscriptions and support revenue would be between €3.8 billion and €4.0 billion at constant currencies (2016: €2.99 billion). We expected full-year 2017 non-IFRS cloud and software revenue to increase by 6% to 8% at constant currencies (2016: €18.43 billion). In addition, we aimed for non-IFRS total revenue in a range of €23.2 billion to €23.6 billion at constant currencies (2016: €22.67 billion). We also projected our full-year non-IFRS operating profit for 2017 would end between €6.8 billion and €7.0 billion (2016: €6.63 billion) at constant currencies. We anticipated an effective tax rate (IFRS) of 26.0% to 27.0% (2016: 25.3%) and an effective tax rate (non-IFRS) of 27.0% to 28.0% (2016: 26.8%).

In July 2017, we raised our forecast for the non-IFRS cloud and software revenue growth rate to between 6.5% and 8.5% at constant currencies. We also raised our outlook for non-IFRS total revenue to a range of €23.3 billion to €23.7 billion at constant currencies. These increases in comparison to our original outlook were based on a strong pipeline as well as a strong first half, which, in light of an 8% growth at constant currencies in non-IFRS cloud and software revenue, already lay at the upper end of our full-year expectations.

In October 2017, based on the continued high volume of orders, particularly for SAP S/4HANA, we raised our outlook for the 2017 non-IFRS cloud and software revenue growth rates to range between 7.0% and 8.5% at constant currencies. We consequently also raised our forecast for non-IFRS total revenue to range between €23.4 billion to €23.8 billion at constant currencies. In view of the greater revenues expected, we also narrowed our outlook for full-year operating profit (non-IFRS) for 2017 upward to range between €6.85 billion and €7.0 billion at constant currencies. We also announced that the Company expected its full-year 2017 effective tax rates (IFRS and non-IFRS) to be below the previous outlook for the effective tax rate

(IFRS) of 26.0% to 27.0% and for the effective tax rate (non-IFRS) of 27.0% to 28.0%. The decrease in comparison to the previous outlook mainly resulted from a one-time tax benefit relating to an intra-group transfer of intellectual property rights to SAP SE which was expected to be executed in the fourth quarter. SAP committed to update its effective tax rate outlook once the effect is quantifiable.

In December 2017, considering the estimated one-time benefit and updated expectations for the full year, SAP adjusted its full-year 2017 effective tax rate (IFRS) to 23.0% to 24.0% and its full-year 2017 effective tax rate (non-IFRS) to 25.0% to 26.0% after the intra-group transfer of intellectual property rights to SAP SE was completed in the fourth quarter. This outlook did not consider any impact from a potential U.S. tax reform.

## 2017 Actual Performance Compared to Outlook (Non-IFRS)

We hit the raised outlook for all our guidance parameters we published in July, October and December.

### Comparison of Outlook and Results for 2017

	Outlook for 2017 (as reported in Integrated Report 2016)	Revised Outlook for 2017 (Q2 Quarterly Statement)	Revised Outlook for 2017 (Q3 Quarterly Statement)	Results for 2017
Cloud subscriptions and support revenue (non-IFRS, at constant currencies)	€3.80 billion to €4.00 billion			€3.83 billion
Cloud and software revenue (non-IFRS, at constant currencies)	+6.0% to +8.0%	+6.5% to +8.5%	+7.0% to +8.5%	+8%
Total revenue (non-IFRS, at constant currencies)	€23.20 billion to €23.60 billion	€23.30 billion to €23.70 billion	€23.40 billion to €23.80 billion	€23.77 billion
Operating profit (non-IFRS, at constant currencies)	€6.80 billion to €7.00 billion		€6.85 billion to €7.00 billion	€6.92 billion
Effective tax rate (IFRS)	26.0% to 27.0%		23.0% to 24.0%*	19.3%
Effective tax rate (non-IFRS)	27.0% to 28.0%		25.0% to 26.0%*	22.6%

\* In the Q3 Quarterly Statement we disclosed our expectation to be below the previous outlook; we adjusted these rates in December for the full-year 2017.

Despite diplomatic tensions, particularly in the Middle East, Turkey, and North Korea, coupled with uncertainties regarding the possible outcome and effects of the Brexit negotiations, our new and existing customers continued to show a strong willingness to invest in our solutions.

At constant currencies, non-IFRS cloud subscriptions and support revenue grew from €2.99 billion in 2016 to €3.83 billion in 2017 and therewith ended in our guidance range of €3.80 billion to €4.00 billion. That represents an increase of 28% on a constant currency basis.

Our new cloud bookings, which is the main measure for our cloud-related sales success and for future cloud subscriptions

revenue, increased 30% on a constant currency basis in 2017 to €1.50 billion (2016: €1.15 billion). In addition to this strong growth, our cloud backlog (unbilled future revenue based on existing customer contracts) climbed by 38% to €7.5 billion (2016: €5.4 billion). This committed business will contribute to our cloud growth in 2018 and beyond.

Besides the cloud business, our traditional on-premise business again showed remarkable growth in 2017. On a constant currency basis, cloud and software revenue (non-IFRS) was €19.82 billion in 2017 (2016: €18.43 billion), representing an increase of 8%, and as such reached the upper end of our increased outlook in July and October.



Our total revenue (non-IFRS) on a constant currency basis rose 8% in 2017 to €23.77 billion (2016: €22.07 billion) and therefore achieved the upper end of our twice increased outlook, which we last predicted to range between €23.40 billion and €23.80 billion.

Operating expenses (non-IFRS) in 2017 on a constant currency basis were €16.84 billion (2016: €15.43 billion), an increase of 9%.

Our expense base in 2017 continued to be impacted by the transformation to a fast-growing cloud business. In our outlook, we expected the cloud subscriptions and support gross margin to be at least stable or to slightly increase compared to 2016. The cloud subscriptions gross margin for 2017 was 62.4%, a decrease of 2.0pp on a constant currency basis, and as such, below our expectations. The decrease is primarily due to ongoing investments in our cloud business as well as the change in the cloud subscription revenue mix. In order to further increase the efficiency and performance of our cloud services, we continued to invest heavily in our Software as a Service/Platform as a Service (SaaS/PaaS) and Infrastructure as a Service (IaaS) cloud services, which are currently growing at an above-average rate. However, since these two service offerings have a lower gross margin than our network business, the overall margin decreased.

The cloud subscriptions and support gross margins of our cloud offerings developed heterogeneously in 2017:

Our cloud subscriptions gross margin (non-IFRS) in our **business network** business increased by 0.8pp (on a constant currency basis) and resulted in 76.8% for 2017, already close to our long-term ambition of 80%. This excellent result is attributable to the continued positive gross margin development within the Concur and SAP Ariba portfolio.

The cloud subscriptions gross margin (non-IFRS) of our **Infrastructure as a Service (IaaS)** cloud offering continued to develop very well in 2017. Our cloud subscription gross margin (non-IFRS) was 6.6% in 2017, which reflects an improvement of 12.7pp on a constant currency basis.

Profitability in our **Software as a Service/Platform as a Service (SaaS/PaaS)** cloud offering was 57.4% at constant currency for 2017 compared to our long-term ambition of 80%. Affected by the incremental investments in our cloud infrastructure, cloud profitability fell by 3.8pp on a constant currency basis, mainly due to significant investments in the expansion of our data center and IT infrastructure as well as in the harmonization of our various public cloud offerings onto one platform.

Despite these investments, we saw efficiency improvements in both our cloud and traditional on-premise business, which drove continued operating profit expansion. Non-IFRS operating profit in 2017 was €6.92 billion on a constant currency basis (2016:

€6.63 billion), reflecting an increase of 4%. As a result, we were able to surpass our excellent results from 2016, despite our continued investment in our business transformation during the reporting year. The positive development of our operating profit was influenced by careful investment decisions focused on customers and products which, among other things, resulted in an increase in our overall headcount by 4,361 full-time equivalents, primarily in research & development, cloud, and sales. With these additional resources, we continued to make targeted investments in our innovation areas and growth markets. Thus, constant currency non-IFRS operating profit amounting to €6.92 billion was at the midpoint of our outlook range raised in October (€6.85 billion to €7.00 billion).

We achieved an effective tax rate (IFRS) of 19.3% and an effective tax rate (non-IFRS) of 22.6%, which is significantly below the adjusted outlook in December of 23.0% to 24.0% (IFRS) and 25.0% to 26.0% (non-IFRS). This mainly resulted from a one-time tax benefit due to the U.S. tax reform.

## Operating Results (IFRS)

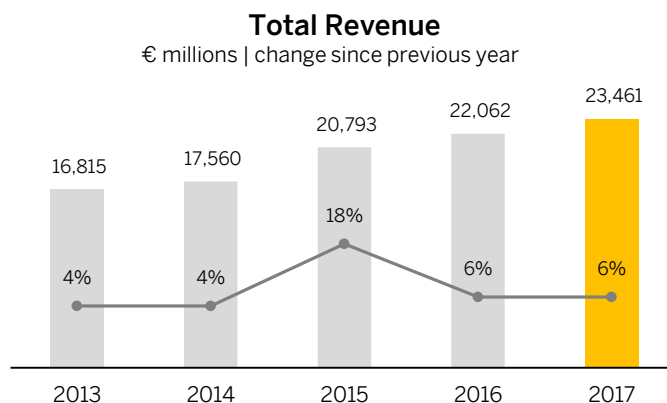
This section on operating results (IFRS) discusses results only in terms of IFRS measures, so the IFRS numbers are not expressly identified as such.

We break our operations down into three regions: the Europe, Middle East, and Africa (EMEA) region, the Americas region, and the Asia Pacific Japan (APJ) region. We allocate revenue amounts to each region based on where the customer is located. For more information about revenue by geographic region, see the Notes to the Consolidated Financial Statements, [Note \(28\)](#).

## Revenue

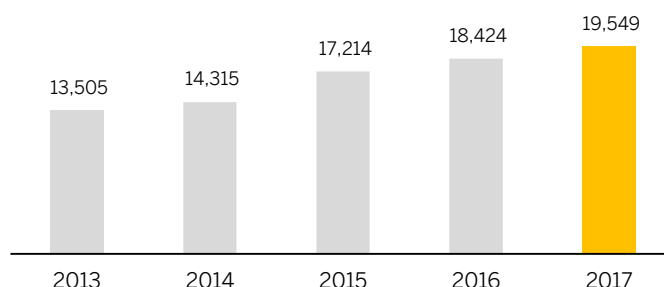
### Total Revenue

Total revenue increased from €22,062 million in 2016 to €23,461 million in 2017, representing an increase of €1,399 million or 6%.



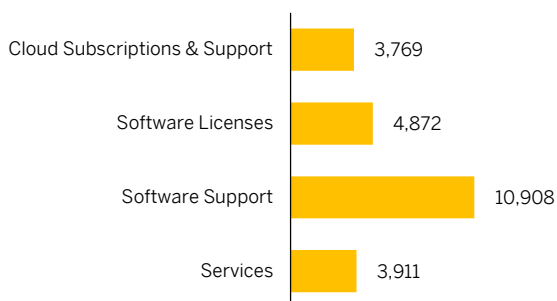
This increase reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects. The growth in revenue resulted primarily from a €776 million increase in cloud subscriptions and support revenue. Furthermore, software support revenue rose €337 million. This growth is a result of continuously high software license revenue, which increased €12 million in 2017. Cloud and software revenue climbed to €19,549 million in 2017, an increase of 6%. Cloud and software revenue represented 83% of total revenue in 2017 (2016: 84%). Service revenue increased 8% from €3,638 million in 2016 to €3,911 million in 2017, which was 17% of total revenue.

### Cloud and Software € millions



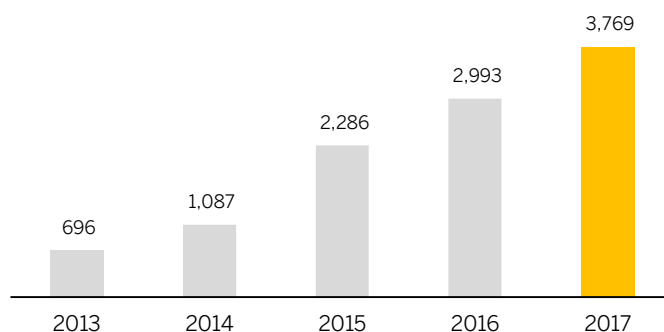
Cloud subscriptions and support revenue increased from €2,993 million in 2016 to €3,769 million in 2017.

### Revenue by Line Item € millions



For more information about our regional performance, see the [Revenue by Region](#) section below.

### Cloud Subscriptions and Support € millions



## Cloud and Software Revenue

Revenue from cloud subscriptions and support refers to the income earned from contracts that permit the customer to access specific software solutions hosted by SAP during the term of its contract with SAP. Software revenue results from the fees earned from selling or licensing software to customers. Support revenue represents fees earned from providing technical support services and unspecified software upgrades, updates, and enhancements to customers.

Cloud and software revenue grew from €18,424 million in 2016 to €19,549 million in 2017, an increase of 6%. This reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects.

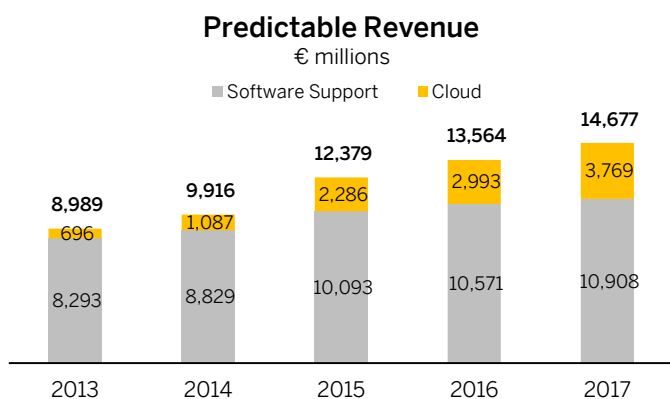
Despite a combination of a partly challenging macroeconomic and political environment and the accelerating industry shift to the cloud, we achieved a €12 million increase in software revenue. This increase, from €4,860 million in 2016 to €4,872 million in 2017, reflects a 3% increase from changes in volumes and prices and a 2% decrease from currency effects. Our customer base continued to expand in 2017. Based on the number of contracts concluded, 15% of the orders we received for software in 2017 (2016: 16%) were from new customers. The total value of software orders received increased 1% year over year. The total number of contracts signed for new software increased 3% to 59,147 (2016: 57,291 contracts), with an average order value of €89 thousand in 2017 (2016: €91 thousand). In 2017, 30% (2016: 29%) of our software order entry resulted from deals worth more than €5 million, while 40% (2016: 38%) resulted from deals worth less than €1 million.

Our stable customer base, the continued demand for our software throughout 2017 and the previous years, and the continued interest in our support offerings resulted in an increase in support revenue from €10,571 million in 2016 to €10,908 million in 2017. The SAP Enterprise Support offering was the largest contributor to our support revenue. The €337 million, or 3%, growth in support revenue reflects a 4%

increase from changes in volumes and prices and a 1% decrease from currency effects. This growth is primarily attributable to SAP Product Support for Large Enterprises and SAP Enterprise Support. The acceptance rate for SAP Enterprise Support among new customers remained very high in 2017 at 99% (2016: 100%).

Software and support revenue rose €350 million, or 2%, from €15,431 million in 2016 to €15,780 million in 2017. This growth reflects a 4% increase from changes in volumes and prices and a 1% decrease from currency effects.

We define predictable revenue as the sum of our software support revenue and our cloud subscriptions and support revenue. Compared to the previous year, our predictable revenue increased from €13,564 million in 2016 to €14,677 million in 2017. This reflects a rise of 8%. Predictable revenue accounted for 63% of our total revenue in 2017 (2016: 61%).



## Services Revenue

Services revenue combines revenue from professional services, premium support services, and other services such as training services, messaging services, and payment services.

Professional services primarily relate to the implementation of our cloud subscriptions and on-premise software products. Our premium support offering consists of high-end support services tailored to customer requirements. Messaging services are primarily transmissions of electronic text messages from one mobile phone provider to another. Payment services are delivered in connection with our travel and expense management offerings.

Services revenue increased €273 million, or 8%, from €3,638 million in 2016 to €3,911 million in 2017. This increase reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects.

Solid market demand for service projects led to a 12% increase of €332 million in consulting revenue and premium support revenue from €2,883 million in 2016 to €3,215 million in 2017. This growth reflects a 12% increase from changes in volumes

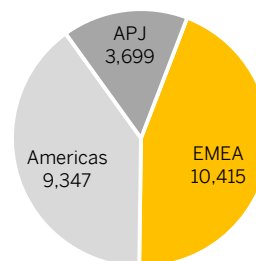
and prices and a 1% decrease from currency effects. Consulting and premium support revenue contributed 82% of total service revenue (2016: 79%). Consulting and premium support revenue contributed 14% of total revenue in 2017 (2016: 13%).

Revenue from other services decreased €59 million, or 8%, to €697 million in 2017 (2016: €756 million). This reflects a 7% decrease from changes in volumes and prices and a 1% decrease from currency changes.

## Revenue by Region

### Revenue by Region

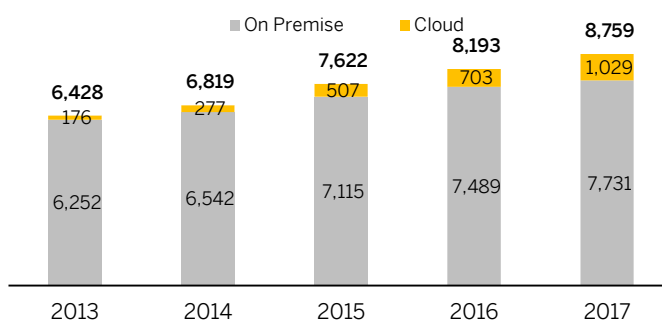
Revenue by Region  
(based on customer location)  
€ millions



### EMEA Region

In 2017, the EMEA region generated €10,415 million in revenue (2016: €9,755 million), which was 44% of total revenue (2016: 44%). This represents a year-over-year increase of 7%. Revenue in Germany increased 10% to €3,352 million in 2017 (2016: €3,034 million). Germany contributed 32% (2016: 31%) of all EMEA region revenue. The remaining revenue in the EMEA region was primarily generated in the United Kingdom, France, Switzerland, the Netherlands, and Italy. Cloud and software revenue generated in the EMEA region totaled €8,759 million (2016: €8,193 million). That was 84% of all revenue from the region (2016: 84%).

EMEA: Cloud and Software Revenue  
€ millions

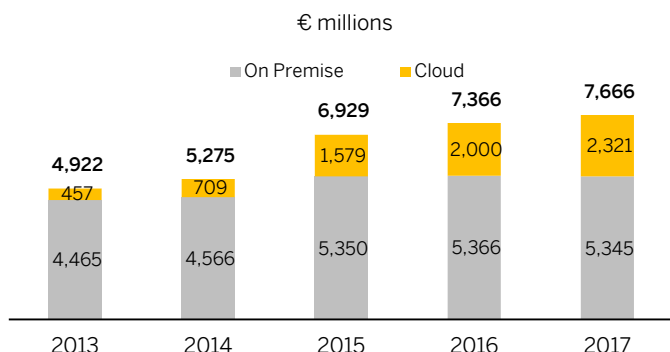


Cloud subscriptions revenue in the EMEA region rose 46% to €1,029 million in 2017 (2016: €703 million). This increase reflects a 48% increase from changes in volumes and prices and a 2% decrease from currency effects. Software licenses and software support revenue rose 3% to €7,731 million in 2017 (2016: €7,489 million). This growth reflects a 3% increase from changes in volumes and prices and a currency effect of 0%.

### Americas Region

In 2017, 40% of our total revenue was generated in the Americas region (2016: 40%). Total revenue in the Americas region increased 5% to €9,347 million; revenue generated in the United States increased 4% to €7,436 million. The revenue growth in the United States reflects a 6% increase from changes in volumes and prices and a negative currency effect of 2%. The United States contributed 80% (2016: 80%) of all revenue generated in the Americas region. In the remaining countries of the Americas region, revenue increased 8% to €1,911 million. This increase reflects a 9% increase from changes in volumes and prices and a 1% decrease from currency effects. Revenue in the remaining countries of the Americas region was generated primarily in Canada, Brazil, and Mexico. Cloud and software revenue generated in the Americas region totaled €7,666 million (2016: €7,366 million). That was 82% of all revenue from the region (2016: 82%).

#### Americas: Cloud and Software Revenue



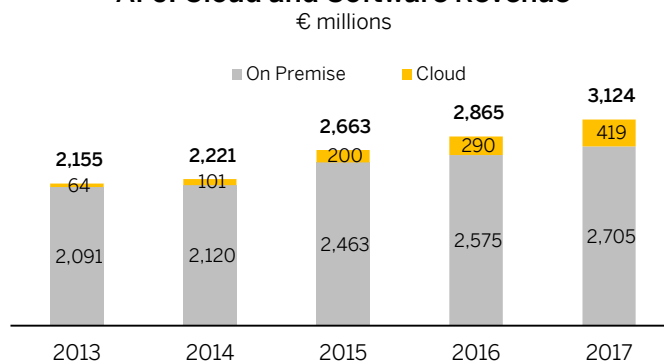
Cloud subscriptions revenue in the Americas region rose 16% to €2,321 million in 2017 (2016: €2,000 million); this includes a negative currency effect of 2%. Software licenses and software support revenue was €5,345 million in 2017 (2016: €5,366 million).

### APJ Region

In 2017, 16% (2016: 15%) of our total revenue was generated in the APJ region. Total revenue in the APJ region increased 10% to €3,699 million. This growth reflects a 12% increase from changes in volumes and prices and a 2% decrease from currency effects. In Japan, revenue increased 7% to €885 million. Revenue from Japan was 24% (2016: 24%) of all revenue generated in the APJ region. The revenue growth in

Japan was attributable to a 13% increase from changes in volumes and prices and a 6% decrease from currency effects. In the remaining countries of the APJ region, revenue increased 10%. Revenue in the remaining countries of the APJ region was generated primarily in Australia, India, and China. Cloud and software revenue in the APJ region totaled €3,124 million in 2017 (2016: €2,865 million). That was 84% of all revenue from the region (2016: 85%).

#### APJ: Cloud and Software Revenue



Cloud subscriptions revenue in the APJ region rose 45% to €419 million in 2017 (2016: €290 million). This increase reflects a 47% increase from changes in volumes and prices and a 2% decrease from currency effects. Software licenses and software support revenue rose 5% to €2,705 million in 2017 (2016: €2,575 million). This increase reflects an 8% increase from changes in volumes and prices and a 3% decrease from currency effects.

### Operating Profit and Operating Margin

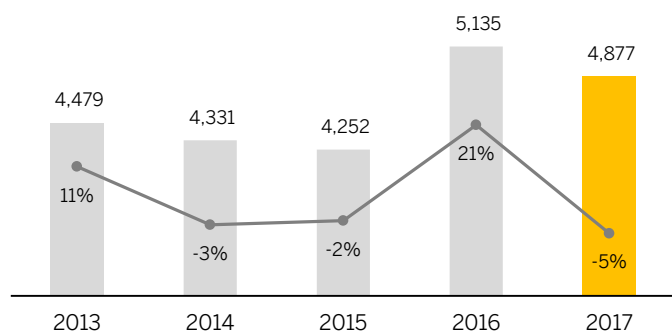
SAP posted record revenues in 2017, particularly in Cloud and Services. Our revenue from cloud subscriptions and support increased 26% while our services revenue improved 8%. In 2017, total revenue grew 6% to €23,461 million (2016: €22,062 million), representing an increase of €1,399 million.

On the other hand, our operating expenses increased €1,656 million or 10% to €18,584 million (2016: €16,928 million). The main contributors to that increase were our continued investment in sales and research and development activities as well as our higher revenue-related and investment-related cloud subscriptions and support costs. The higher share price in 2017 led to increased costs of share-based compensation of €1,120 million (2016: €785 million). Our employee headcount (measured in full-time equivalents, or FTEs) increased by 4,361 FTEs year over year to 88,543.

Overall, the increase in expenses exceeded our growth in revenue, leading to a 5% decrease in operating profit to €4,877 million (2016: €5,135 million).

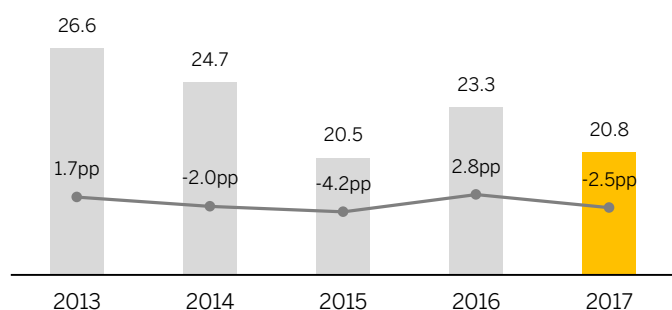
## Operating Profit

€ millions | change since previous year



## Operating Margin

Percent | change since previous year



We see the increased operating expenses largely as investments in the future that help to secure long-term sales growth.

As an overall result of these effects on operating profit, our operating margin narrowed 2.5pp to 20.8% in 2017 (2016: 23.3%).

Changes to the individual elements in our cost of revenue were as follows:

### Cost of Cloud and Software

Cost of cloud and software consists primarily of customer support costs, costs of developing custom solutions that address customers' specific business requirements, costs for deploying and operating cloud solutions, amortization expenses relating to intangibles, and license fees and commissions paid to third parties for databases and the other complementary third-party products sublicensed by us to our customers.

In 2017, the cost of cloud and software increased 11% to €3,893 million (2016: €3,495 million).

Main impact on costs was an additional €347 million year over year for delivering and operating cloud applications in response to the sustained strength of customer demand. These investments contributed to revenue growth. Our margin on cloud subscriptions and support narrowed from 56.1% in 2016 to 56.0% in 2017. This margin decline is attributable to

investments in our cloud business, which offset the strong growth in cloud subscriptions and support revenue.

A 2% increase in software license and support revenue led to a corresponding 2% increase in customer support costs to €2,234 million, and enabled us to keep our software license and support margin stable at 85.8% (2016: 85.9%). The gross margin on cloud and software, defined as cloud and software profit as a percentage of cloud and software revenue, narrowed by 1pp in 2017 to 80.1% (2016: 81.0%). This decline was mainly driven by the change in the Cloud and Software revenue mix, which now has a higher proportion of cloud subscriptions and support revenues. Due to infrastructure costs, these revenues currently deliver a lower margin and a declining proportion of higher-margin software and support revenues.

### Cost of Services

Cost of services consists primarily of the cost of consulting, premium services and training personnel and the cost of bought-in consulting and training resources.

Although we were able to increase our service revenue by 8% year over year to €3,911 million in 2017 (2016: €3,638 million), our service business continues to be greatly affected as we trend away from classic software licensing and consulting revenue toward more subscription revenue from cloud solutions. In addition, we continue to invest in our SAP ONE Service organization and in our customer co-innovation projects. As a result, cost of services rose 2% to €3,158 million (2016: €3,089 million). Our gross margin on services, defined as services profit as a percentage of services revenue, increased 4.2pp to 19.3% (2016: 15.1%).

### Research and Development Expense

Our research and development (R&D) expense consists primarily of the personnel cost of our R&D employees, costs incurred for independent contractors we retain to assist in our R&D activities, and amortization of the computer hardware and software we use for our R&D activities.

Due to growing personnel costs driven by a 10% increase in our yearly average R&D headcount, our R&D expense increased by 10% to €3,352 million in 2017 from €3,044 million in 2016. R&D expense as a percentage of total revenue thus increased to 14.3% in 2017 (2016: 13.8%). For more information, see the [Products, Research & Development, and Services](#) section.

### Sales and Marketing Expense

Sales and marketing expense consists mainly of personnel costs, direct sales costs, and the cost of marketing our products and services.

Our sales and marketing expense rose 11% from €6,265 million in 2016 to €6,924 million in 2017. The increase was mainly the result of greater personnel costs as we expanded our global

sales force, and of increased expenditure for bonus payments prompted by the strong revenue growth. The ratio of sales and marketing expense to total revenue, expressed as a percentage, increased to 29.5% year over year (2016: 28.4%), an increase of 1.1pp.

## **General and Administration Expense**

Our general and administration expense consists mainly of personnel costs to support our finance and administration functions.

General and administration expense increased 7% from €1,005 million in 2016 to €1,075 million in 2017. This increase is primarily the result of higher personnel costs related to job creation in administrative areas, based on the increased business volume related to our growth. Thanks to strong operating results, the ratio of general and administration expense to total revenue remained stable year over year at 4.6% (2016: 4.6%).

## Segment Information

At the end of 2017, SAP had two operating segments: the Applications, Technology & Services segment and the SAP Business Network segment.

For more information about our segment reporting, see the Notes to the Consolidated Financial Statements, *Note (28)*, and the *Performance Management System* section.

### Applications, Technology & Services Segment

€ millions, unless otherwise stated (Non-IFRS)	2017	2016	Δ in %	Δ in % (Constant Currency)
Cloud subscriptions and support revenue – SaaS/PaaS <sup>1)</sup>	1,604	1,191	35	37
Cloud subscriptions and support gross margin – SaaS/PaaS <sup>1)</sup> (in %)	57	62	-4pp	-4pp
Cloud subscriptions and support revenue – IaaS <sup>2)</sup>	328	209	57	60
Cloud subscriptions and support gross margin – IaaS <sup>2)</sup> (in %)	6	-6	12pp	13pp
Cloud subscriptions and support revenue	1,932	1,400	38	40
Cloud subscriptions and support gross margin (in %)	49	52	-3pp	-3pp
Segment revenue	21,141	20,130	5	6
Gross margin (in %)	73	74	-1pp	-0pp
Segment profit	8,102	8,051	1	2
Segment margin (in %)	38	40	-2pp	-1pp

<sup>1)</sup> Software as a Service/Platform as a Service

<sup>2)</sup> Infrastructure as a Service

The Applications, Technology & Services segment recorded a strong increase in cloud subscriptions and support revenue in 2017. As a consequence of continuous strong demand in our Human Capital Management solutions, and growing success of our SAP Cloud Platform in the market, SaaS/PaaS revenue increased 34.6% (36.6% at constant currencies). We also saw SAP S/4HANA cloud and SAP Leonardo, our strategic offers for the future, develop very positively, with high growth rates.

Our software support revenue further increased in 2017. It rose 3.3% (4.2% at constant currencies) to €10,890 million. Including software licenses revenue, which remained at the same level year over year (increased 2.4% at constant currencies), we achieved a total software licenses and support revenue of €15,762 million in 2017.

Overall, the revenue share of more predictable revenue streams in this segment increased 1.3pp from 59.3% in 2016 to 60.7% in 2017.

The segment's cost of revenue during the same time period increased 7.4% (8.2% at constant currencies) to €5,703 million (2016: €5,311 million). This increase in expenses was primarily the result of higher investment in expanding our cloud infrastructure and in providing and operating our cloud applications. This impacted particularly the SaaS/PaaS business, whose margin consequently declined 4.3pp compared to the year before. These costs were partially offset by our IaaS business that with an increasing level of maturity achieved significant increases in efficiency. It ended the fiscal year with a margin growth of 11.8pp (12.7pp at constant currencies).

## SAP Business Network Segment

€ millions, unless otherwise stated (Non-IFRS)	2017	2016	Δ in %	Δ in % (Constant Currency)
Cloud subscriptions and support revenue – SaaS/PaaS <sup>1)</sup>	1,840	1,595	15	17
Cloud subscriptions and support gross margin – SaaS/PaaS <sup>1)</sup> (in %)	77	76	1pp	1pp
Cloud subscriptions and support revenue	1,840	1,595	15	17
Cloud subscriptions and support gross margin (in %)	77	76	1pp	1pp
Segment revenue	2,261	1,925	17	19
Gross margin (in %)	68	67	1pp	1pp
Segment profit	385	341	13	16
Segment margin (in %)	17	18	-1pp	-1pp

<sup>1)</sup> Software as a Service/Platform as a Service

The SAP Business Network segment was able to increase its cloud subscriptions and support gross margin in 2017 (0.8pp) to 76.7%. This improvement is mainly attributable to increased efficiency in operating costs. The segment's cost of revenue increased 15.0% in 2017 (16.8% at constant currencies) to €725 million (2016: €631 million).

The revenue increased by 17.4% (19.4% at constant currencies) to €2,261 million. As a result, the SAP Business Network segment achieved a segment gross profit of €1,536 million in 2017 (2016: €1,295 million), an increase of 18.6% (20.7% at constant currencies).

## Reconciliation of Cloud Subscription Revenues and Margins

€ millions, unless otherwise stated		2017		2016	Δ in %	Δ in %
		Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud subscriptions and support revenue – SaaS/PaaS <sup>1)</sup>	SAP Business Network segment	1,840	1,870	1,595	15	17
	Other	1,604	1,627	1,191	35	37
	Total	3,443	3,497	2,786	24	26
Cloud subscriptions and support revenue – IaaS <sup>2)</sup>		328	334	209	57	60
<b>Cloud subscriptions and support revenue</b>		<b>3,771</b>	<b>3,831</b>	<b>2,995</b>	<b>26</b>	<b>28</b>
Cloud subscriptions and support gross margin – SaaS/PaaS <sup>1)</sup> (in %)	SAP Business Network segment	77	77	76	1pp	1pp
	Other	57	57	61	-4pp	-4pp
	Total	68	68	70	-2pp	-2pp
Cloud subscriptions and support gross margin – IaaS <sup>2)</sup> (in %)		6	7	-6	12pp	13pp
<b>Cloud subscriptions and support gross margin (in %)</b>		<b>62</b>	<b>62</b>	<b>64</b>	<b>-2pp</b>	<b>-2pp</b>

<sup>1)</sup> Software as a Service/Platform as a Service

<sup>2)</sup> Infrastructure as a Service



## Financial Income, Net

Financial income increased to €185 million (2016: –€38 million). Our finance income was €463 million (2016: €230 million) and our finance costs were €278 million (2016: €268 million).

Finance income mainly consists of gains from disposal of equity securities totaling €382 million (2016: €164 million), interest income from loans and receivables, and other financial assets (cash, cash equivalents, and current investments) totaling €49 million (2016: €40 million), and income from derivatives totaling €44 million (2016: €29 million).

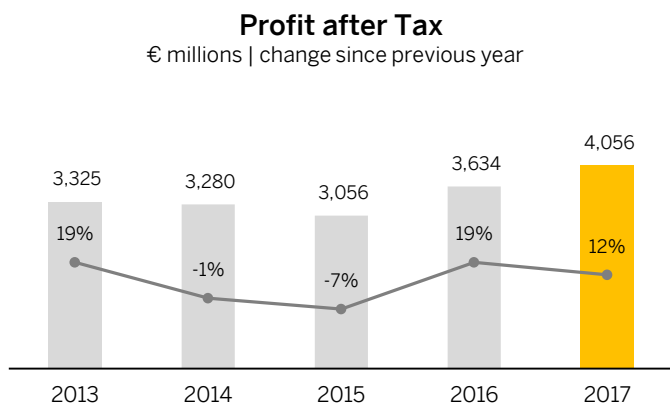
Finance costs mainly consist of interest expense on financial liabilities amounting to €90 million (2016: €108 million) and negative effects from derivatives amounting to €116 million (2016: €114 million). The decrease in finance costs is mainly due to lower average indebtedness. For more information about financing instruments, see the Notes to the Consolidated Financial Statements, [Note \(17b\)](#).

## Income Taxes

The effective tax rate in 2017 was 19.3% (2016: 25.3%). The year-over-year decrease in the effective tax rate mainly resulted from one-time tax benefits relating to an intra-group transfer of intellectual property rights to SAP SE and the U.S. tax reform which were partly compensated by valuation allowances on deferred tax assets and changes in the regional allocation of income. For more information about income taxes, see the Notes to the Consolidated Financial Statements, [Note \(10\)](#).

## Profit After Tax and Earnings per Share

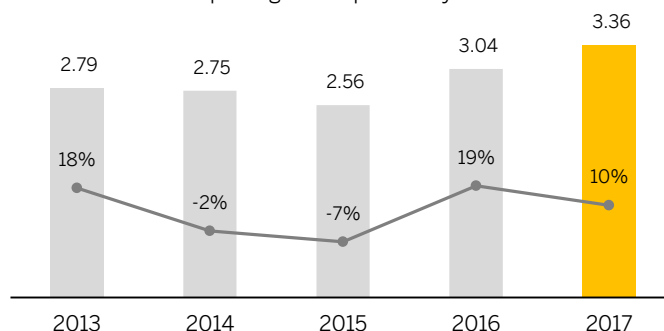
Profit after tax increased to €4,056 million in 2017 (2016: €3,634 million).



Basic earnings per share increased to €3.36 (2016: €3.04). The number of shares outstanding decreased to 1,197 million in 2017 (2016: 1,198 million).

## Earnings per Share

€ | change since previous year

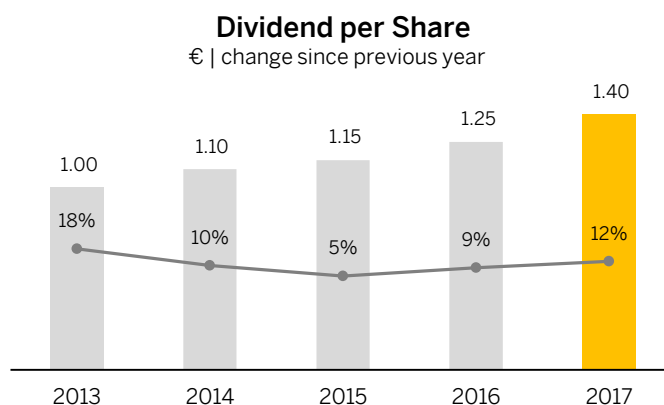


## Dividend

We believe our shareholders should benefit appropriately from the profit the Company made in 2017. Until 2017, our policy was to distribute more than 35% of profit after tax in dividend. After the actual payout exceeded 40% of profit after tax in all of the recent years we are amending our dividend policy. Our new policy is to pay a dividend totaling 40% or more of profit after tax.

The Executive Board and the Supervisory Board will recommend to the Annual General Meeting of Shareholders that the total dividend be increased by 12% to €1.40 per share (2016: €1.25). Based on this recommendation, the overall dividend payout ratio (which here means total distributed dividend as a percentage of profit) would be 41% (2016: 41%).

If the shareholders approve this recommendation and if treasury shares remain at the 2017 closing level, the total amount distributed in dividends would be €1,671 million. The actual amount distributed may be different from this total because the number of shares held in treasury may change before the Annual General Meeting of Shareholders. In 2017, we distributed €1,499 million in dividends from our 2016 profit after tax and repurchased SAP treasury shares for €500 million. There was no share buyback in 2016.



# Finances (IFRS)

## Overview

### Global Financial Management

We use global centralized financial management to control liquid assets and monitor exposure to interest rates and currencies. The primary aim of our financial management is to maintain liquidity in the Group at a level that is adequate to meet our obligations. Most SAP companies have their liquidity managed centrally by the Group, so that liquid assets across the Group can be consolidated, monitored, and invested in accordance with Group policy. High levels of liquid assets help keep SAP flexible, sound, and independent. In addition, various credit facilities are currently available for additional liquidity, if required. For more information about these facilities, see the [Credit Facilities](#) section.

We manage credit, liquidity, interest rate, equity price, and foreign exchange rate risks on a Group-wide basis. We use selected derivatives exclusively for this purpose and not for speculation, which is defined as entering into a derivative instrument for which we do not have corresponding underlying transactions. The rules for the use of derivatives and other rules and processes concerning the management of financial risks are documented in our treasury guideline, which applies globally to all companies in the Group. For more information about the management of each financial risk and about our risk exposure, see the Notes to the Consolidated Financial Statements, [Notes \(24\) to \(26\)](#).

### Liquidity Management

Our primary source of cash, cash equivalents, and current investments is funds generated from our business operations. Over the past several years, our principal use of cash has been to support operations and our capital expenditure requirements resulting from our growth, to quickly repay financial debt, to acquire businesses, to pay dividends on our shares, and to buy back SAP shares on the open market. On December 31, 2017, our cash, cash equivalents, and current investments were primarily held in euros and U.S. dollars. We generally invest only in the financial assets of issuers or funds with a minimum credit rating of BBB, and pursue a policy of cautious investment characterized by wide portfolio diversification with a variety of counterparties, predominantly short-term investments, and standard investment instruments. Investments in financial assets of issuers with a credit rating lower than BBB were not material in 2017.

We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs in 2018 and, together with expected cash flows from operations, will support debt repayments and our currently

planned capital expenditure requirements over the near term and medium term. It may also be necessary to enter into financing transactions when additional funds are required that cannot be wholly sourced from free cash flow (for example, to finance large acquisitions).

To expand our business, we have made acquisitions of businesses, products, and technologies. Depending on our future cash position and future market conditions, we might issue additional debt instruments to fund acquisitions, maintain financial flexibility, and limit repayment risk. Therefore, we continuously monitor funding options available in the capital markets and trends in the availability of funds, as well as the cost of such funding. In recent years, we were able to repay additional debt within a short period of time due to our persistently strong free cash flow. For more information about the financial debt, see the [Cash Flows and Liquidity](#) section.

### Capital Structure Management

The primary objective of our capital structure management is to maintain a strong financial profile for investor, creditor, and customer confidence, and to support the growth of our business. We seek to maintain a capital structure that will allow us to cover our funding requirements through the capital markets at reasonable conditions, and in so doing, ensure a high level of independence, confidence, and financial flexibility.

For more information about the capital structure and its analysis, see the [Analysis of Consolidated Statement of Financial Position](#) section and the Notes to the Consolidated Financial Statements, [Note \(21\)](#).

The long-term credit rating for SAP SE is "A2" by Moody's with stable outlook, and "A" by Standard & Poor's with positive outlook.

Our general intention is to remain in a position to return liquidity to our shareholders by distributing annual dividends totaling more than 40% of our profit after tax and potentially repurchasing treasury shares in future.

### Credit Facilities

Other sources of capital are available to us through various credit facilities, if required.

To retain high financial flexibility, on November 20, 2017, SAP SE entered into a €2.5 billion syndicated credit facility agreement with an initial term of five years plus two one-year extension options, replacing its previous credit facility of €2.0 billion from 2013. The credit facility may be used for general corporate purposes. A possible future utilization is not subject to any financial covenants. Borrowings under the facility bear interest of EURIBOR or LIBOR for the respective currency plus a margin of 0.17%. We are also required to pay a commitment fee of 0.0595% per annum on the unused available credit. So far,

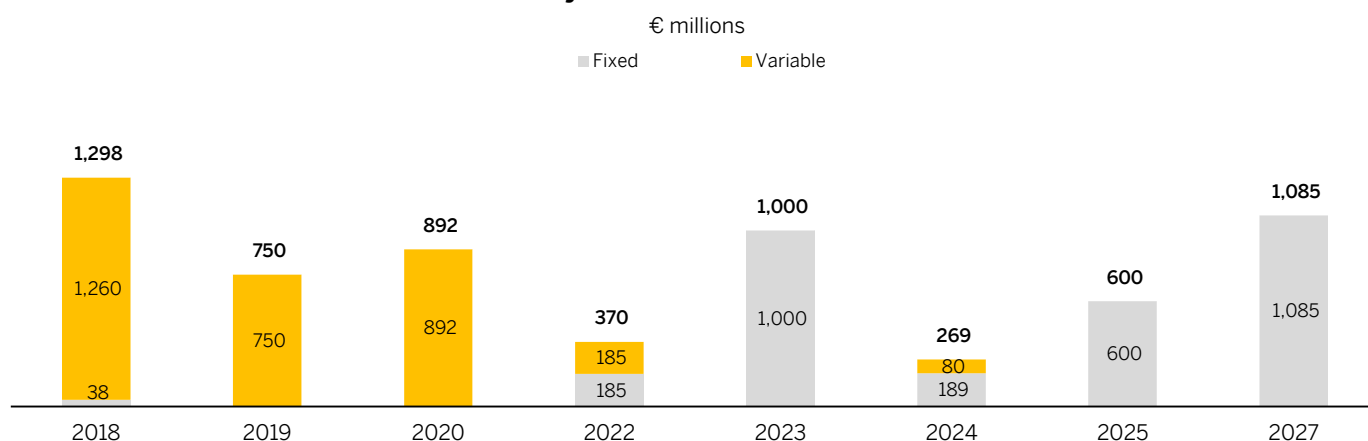
we have not used, and do not currently foresee any need to use, this credit facility.

As at December 31, 2017, SAP SE had additional available credit facilities totaling €474 million. Several of our foreign subsidiaries have credit facilities available that allow them to

borrow funds at prevailing interest rates. As at December 31, 2017, approximately €36 million was available through such arrangements. There were immaterial borrowings outstanding under these credit facilities from our foreign subsidiaries as at December 31, 2017.

## Financial Debts

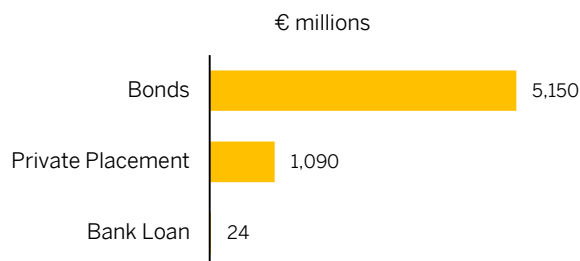
### Maturity Profile of Financial Debts



Nominal volume of financial debt on December 31, 2017, included amounts in euros (€5,150 million) and U.S. dollars (€1,090 million). Approximately 50% of the financial debt was held at variable interest rates, partially swapped from fixed into variable using interest rate swaps.

In 2018, the Company intends to repay two Eurobond tranches of €1,150 million in total as well as a U.S. private placement tranche of US\$150 million in total when they mature.

### Financial Debt



For more information about our financial debt, see the Notes to the Consolidated Financial Statements, [Note \(17\)](#).

## Cash Flows and Liquidity

### Group Liquidity

€ millions	2017	2016	Δ
Cash and cash equivalents	4,011	3,702	309
Current investments	774	971	-196
<b>Group liquidity</b>	<b>4,785</b>	<b>4,673</b>	<b>112</b>
Current financial debt	-1,299	-1,435	136
<b>Net liquidity 1</b>	<b>3,486</b>	<b>3,238</b>	<b>248</b>
Non-current financial debt	-4,965	-6,390	1,425
<b>Net liquidity 2</b>	<b>-1,479</b>	<b>-3,153</b>	<b>1,673</b>

Group liquidity consists of cash and cash equivalents (for example, cash at banks, money market funds, and time deposits with original maturity of three months or less) and current investments (for example, investments with original maturities of greater than three months and remaining maturities of less than one year included in other financial assets) as reported in our Consolidated Financial Statements. Net liquidity is Group liquidity less total financial debt as defined above.

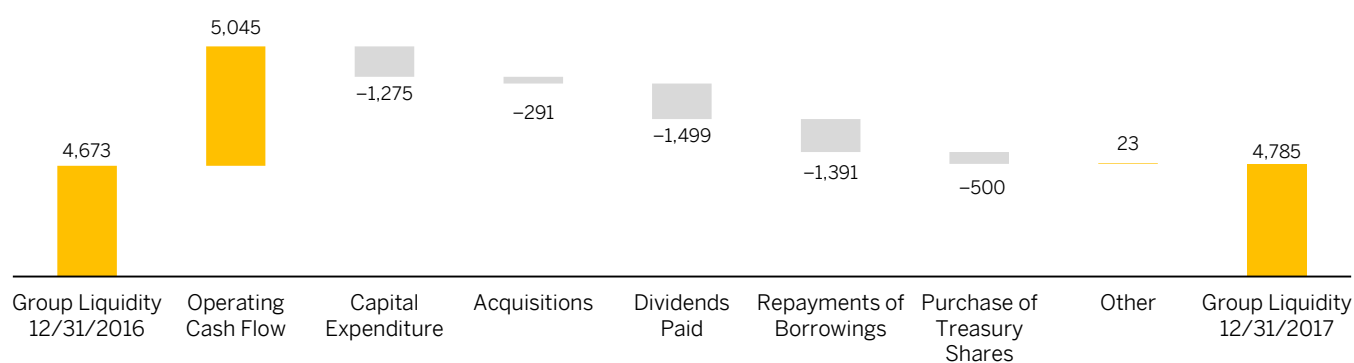
Group liquidity on December 31, 2017, primarily comprised amounts in euros and U.S. dollars.

The increase in Group liquidity compared to 2016 was mainly due to cash inflows from our operations. They were offset by cash outflows for dividend payments, purchase of treasury shares, and repayments of borrowings.

For information about the impact of cash, cash equivalents, current investments, and our financial liabilities on our income statements, see the analysis of our financial income, net, in the *Operating Results (IFRS)* section.

## Group Liquidity Development

€ millions



## Analysis of Consolidated Statements of Cash Flow

### Analysis of Consolidated Statements of Cash Flow

€ millions	2017	2016	Δ in %
Net cash flows from operating activities	5,045	4,628	9
Net cash flows from investing activities	-1,112	-1,799	-38
Net cash flows from financing activities	-3,406	-2,705	26

In 2017, cash inflows from operating activities increased by €417 million to €5,045 million (2016: €4,628 million). This result is due to a €145 million decrease in income tax payments compared to the prior year and improved working capital management, which can be shown in decreased days' sales outstanding (DSO) for receivables, defined as the average number of days from the raised invoice to cash receipt from the customer, which went down four days in 2017 to 70 days (2016: 74 days).

Cash outflows from investment activities were €1,112 million in 2017 (2016: €1,799 million). The decrease was caused by net

cash inflows from sales and purchases of equity or debt instruments of other entities, totaling €358 million in 2017 compared to a net cash outflow €756 million in 2016. Cash outflows from the purchases of intangible assets and property, plant, and equipment increased by €274 million to €1,275 million in 2017, while cash outflows from business combinations increased by €185 million to €291 million in 2017. For more information about current and planned capital expenditures, see the *Assets* section and the *Investment Goals* section.

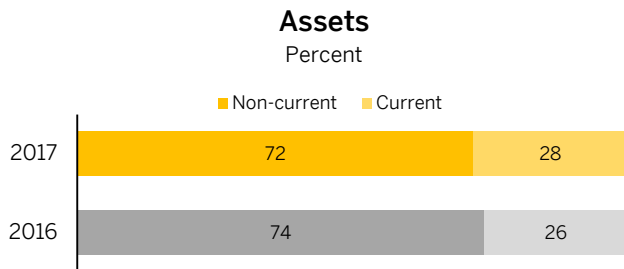
Net cash outflows from financing activities were €3,406 million in 2017, compared to €2,705 million in 2016. The 2017 cash outflows resulted from repayments of €1,000 million in Eurobonds and US\$442.5 million in U.S. private placements when they matured. Cash outflows in 2016 resulted from repayments of a €1,250 million bank loan that we had taken to finance the Concur acquisition. The repayment was partly refinanced through the issuance of a €400 million Eurobond. We also repaid a US\$600 million U.S. private placement in 2016.

The dividend payment of €1,499 million made in 2017 exceeded the amount of €1,378 million from the prior year, as a result of the increased dividend paid per share from €1.15 to €1.25. In 2017, we repurchased shares in the amount of €500 million (2016: €0).

## Assets (IFRS)

### Analysis of Consolidated Statements of Financial Position

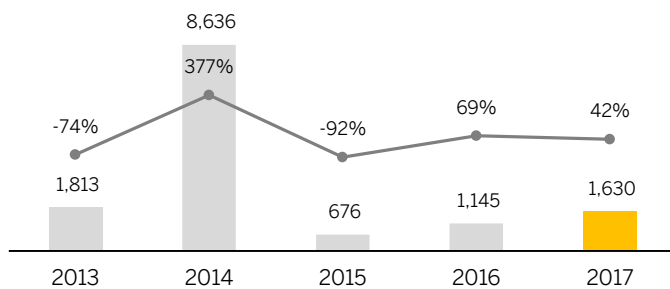
Total assets decreased by 4% year over year to €42,497 million.



Total current assets increased slightly by 3% in 2017 from €11,564 million to €11,930 million. This was mainly due to an increase in cash and cash equivalents based on the cash inflows from our operating activities.

### Investment in Goodwill, Intangible Assets, and Property, Plant, and Equipment

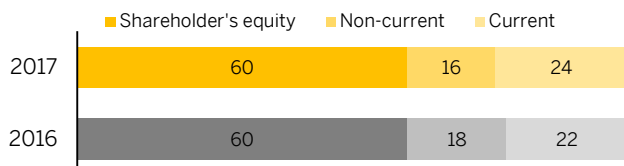
€ millions | change since previous year



Total non-current assets decreased by 7% in 2017 to €30,567 million compared to the previous year's figure of €32,713 million. This change was mainly due to foreign-exchange related revaluations.

### Liabilities

Percent



Current liabilities increased by 6% to €10,210 million in 2017 as compared to the prior year (€9,674 million), which was mainly due to an increase of income tax liabilities as well as accruals for our share-based payments.

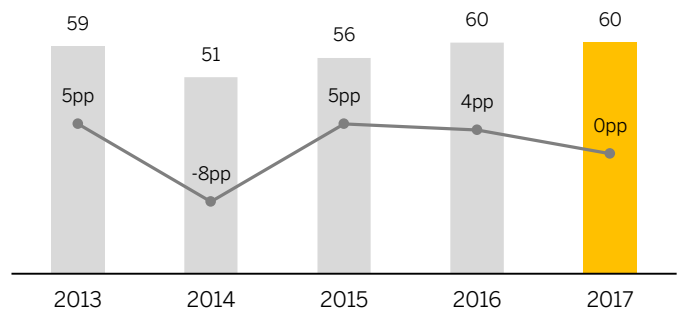
Total non-current liabilities decreased by €1,458 million in 2017 to €6,747 million compared to the previous year's figure of €8,205 million. This is due to reclassifications from non-current to current financial liabilities to reflect the respective maturity profile.

For more information about financing activities in 2017, see the *Finances (IFRS)* section.

The equity ratio (that is, the ratio of shareholders' equity to total assets) remained stable at 60% (prior year: 60%).

### Equity Ratio

Percent | change since previous year



### Principal Capital Expenditures and Divestitures Currently in Progress

In 2017, we continued various construction projects and started new construction activities in several locations. Except for one new office building in Walldorf, which is intended to be partially financed by a promotional loan, we plan to finance all of these projects from operating cash flow. Our most important projects are listed below:

## Construction Projects

€ millions

Country	Location of Facility	Short Description	Estimated Total Cost	Costs Incurred as at December 31, 2017	Estimated Completion Date
Germany	Walldorf	New data center phase 1	65	46	April 2018
United States	Colorado Springs, CO	New data center	108	68	April 2018
Germany	Walldorf	New office building for approx. 450 employees	37	5	November 2018
Germany	Walldorf	New data center phase 2	52	1	January 2019
Germany	St. Leon-Rot	New office building for approx. 450 employees	37	1	January 2019
Germany	Walldorf	New office building for approx. 700 employees	74	37	February 2019
Germany	Munich	New office building for approx. 850 employees	95	0	April 2021

For more information about planned capital expenditures, see the *Investment Goals* section. There were no material divestitures within the reporting period.

## Competitive Intangibles

The resources that are the basis for our current as well as future success do not appear in the Consolidated Financial Statements. This is apparent from a comparison of the market capitalization of SAP SE (based on all issued shares), which was €114.8 billion at the end of 2017 (2016: €101.7 billion), with the book value of our equity in the Consolidated Financial Statements, which was €25.5 billion (2016: €26.4 billion). This means that the market capitalization of our equity is nearly five times higher than the book value. The difference is mainly due to certain internally generated intangible resources that the applicable accounting standards do not allow to be recorded (at all or at fair value) in the Consolidated Financial Statements. They include customer capital (our customer base and customer relations); employees and their knowledge and skills; our ecosystem of partners; software we developed ourselves; our ability to innovate; the brands we have built up, in particular, the SAP brand itself; and our organization.

As of December 31, 2017, SAP was the most valuable company in Germany in terms of market capitalization based on all issued shares.

In 2017, SAP's brand value again increased. According to the Interbrand "Best Global Brands" annual survey, SAP ranked as the 21st most valued brand in the world (2016: 22nd). Against other German brands, the SAP brand ranks third behind Mercedes-Benz and BMW, and ninth globally against other brands in the technology sector. Interbrand determined our brand value to be US\$22.6 billion, an increase of 6% compared to the previous year (2016: US\$21.3 billion).

The results of our current and past investment in research and development are also a significant element in our competitive intangibles.

Our customer capital continued to grow in 2017. At the end of 2017, we had more than 378,000 customers (2016: 345,000) in various market segments. We serve customers in more than 180 countries. In addition, 98% of the 100 most valued brands, 87% of the Forbes Global 2000 companies, and 100% of the Dow Jones top-scoring sustainability companies are SAP customers. For more information about our customers, see the *Customers* section.

Employee-related activities increased the value of our employee base and our own software. For more information, see the *Employees and Social Investment* section, and the *Products, Research & Development, and Services* section.

## Report on the Economic Position of SAP SE

SAP SE is headquartered in Walldorf, Germany, and is the parent company of the SAP Group, which comprises 228 companies. SAP SE is the Group holding company and employs most of the Group's Germany-based development and service and support personnel.

As the owner of the intellectual property in most SAP software, SAP SE derives its revenue mainly from software license fees paid by its subsidiaries for the right to market SAP solutions and bears the group-wide research and development expenses for the most part.

By way of an intragroup transaction, SAP SE acquired, in December 2017, the former hybris business from SAP (Schweiz) AG, Switzerland. The acquired business includes all intellectual property rights related to SAP Hybris solutions and the shares in hybris GmbH, Germany, and hybris (US) Corp., USA. In return, SAP SE paid €172 million in cash and assumed a liability of SAP (Schweiz) AG against SAP Holdings (UK), United Kingdom, in the amount of €2,012 million.

The SAP SE annual financial statements are prepared in accordance with the reporting standards in the German Commercial Code in the version of the Accounting Directive Implementation Act BilRUG and the German Stock Corporation Act. The full SAP SE annual financial report and unqualified audit report are submitted to the operator of the *Elektronischer Bundesanzeiger* (Online German Federal Gazette) for publication and inclusion in the *Unternehmensregister* (German Business Register). It is available from SAP SE on request.

## Income

SAP SE's income statement is classified following the nature of expense method and presents amounts in millions of euros.

### SAP SE Income Statement – German Commercial Code (Short Version)

€ millions	2017	2016
<b>Total revenue</b>	<b>13,634</b>	<b>12,578</b>
Other operating income	1,074	1,218
Cost of services and materials	-8,079	-7,337
Personnel expenses	-2,035	-1,838
Depreciation and amortization	-295	-263
Other operating expenses	-2,053	-2,143
<b>Operating profit</b>	<b>2,246</b>	<b>2,215</b>
<b>Finance income</b>	<b>1,745</b>	<b>1,155</b>
<b>Income before taxes</b>	<b>3,991</b>	<b>3,370</b>
Income taxes	-1,124	-760
<b>Income after taxes</b>	<b>2,867</b>	<b>2,610</b>
Other taxes	-11	-15
<b>Net income</b>	<b>2,856</b>	<b>2,595</b>

The total revenue of SAP SE in 2017 was €13,634 million (2016: €12,578 million), an increase of 8 %. Product revenue increased 8% to €10,928 million (2016: €10,157 million). As in previous years, product revenue was primarily generated from license fees paid by subsidiaries of SAP SE.

Service revenue increased 7% to €529 million in 2017 (2016: €493 million), other revenue increased by 13% to €2,176 million (2016: €1,927 million).

SAP SE operating profit increased 1% to €2,246 million (2016: €2,215 million). Other operating income decreased

144€ million to €1,074 million (2016: €1,218 million). The year-over-year increase is primarily due to a decrease in gains from currency effects. SAP SE cost of services and materials increased 10 % to €8,079 million (2016: €7,337 million). Services received increased €781 million to €5,918 million (2016: €5,137 million), mainly due to increased services received in the context of intra-group cost allocations. The main contributors to that increase were continued group-wide investments in research and development activities as well as greater revenue-related and investment-related cloud subscriptions and support costs.

SAP SE personnel expenses, mainly the labor cost of software developers, service and support employees, and administration staff employed by SAP SE, increased 11% to €2,035 million (2016: €1,838 million). This increase was mainly driven by an increase in headcount and higher costs related to share-based compensation. Other operating expenses decreased by €90 million to €2,053 million (2016: €2,143 million). This decrease is mainly attributable to a €192 million decrease in losses from currency effects and a €31 million decrease in the impairment of receivables. The decreases were partly offset by higher rental costs, an increase in expenses for other services, and an increase in restructuring costs.

Finance income was €1,745 million (2016: €1,155 million), a year-over-year increase of €590 million. This increase is primarily due to a €797 million higher income from investments in associates, an increase of €24 million in the net interest income, and a decrease of €16 million in write-downs of financial assets. These were partly offset by a €257 million decrease in results from profit and loss transfer agreements.

SAP SE income before taxes increased €621 million to €3,991 million (2016: €3,370 million). Income taxes increased by €364 million to €1,124 million (2016: €760 million). After deducting taxes, the resulting net income is €2,856 million (2016: €2,595 million), an increase of €261 million year over year.

## Assets and Financial Position

In 2017, SAP SE total assets closed at €34,770 million (2016: €32,706 million).

### SAP SE Balance Sheet as at December 31– German Commercial Code (Short Version)

€ millions	2017	2016
<b>Assets</b>		
Intangible assets	2,146	147
Property, plant, and equipment	1,282	1,111
Financial assets	25,939	25,338
<b>Fixed assets</b>	<b>29,367</b>	<b>26,596</b>
Inventories	1	2
Accounts receivable and other assets	4,215	4,637
Marketable securities and Liquid assets	731	1,120
<b>Short-term assets</b>	<b>4,947</b>	<b>5,759</b>
<b>Prepaid expenses and deferred charges</b>	<b>226</b>	<b>205</b>
<b>Deferred taxes</b>	<b>227</b>	<b>144</b>
<b>Surplus arising from offsetting</b>	<b>3</b>	<b>2</b>
<b>Total assets</b>	<b>34,770</b>	<b>32,706</b>
<b>Equity and liabilities</b>		
<b>Shareholders' equity</b>	<b>16,171</b>	<b>15,291</b>
<b>Provisions</b>	<b>1,671</b>	<b>1,339</b>
<b>Liabilities</b>	<b>16,917</b>	<b>16,069</b>
<b>Deferred income</b>	<b>12</b>	<b>7</b>
<b>Total shareholders' equity and liabilities</b>	<b>34,770</b>	<b>32,706</b>

Intangible assets increased by €1,999 million to €2,146 million. This significant increase was caused by net additions of €1,355 million in goodwill and of €651 million in intellectual property and other similar rights in connection with the hybris business transfer. Due to investments in IT infrastructure, property, plant and equipment rose by €171 million to €1,282 million (2016: €1,111 million). Financial assets increased €601 million year over year to €25,939 million (2016: €25,338 million), mainly due to capital contributions to subsidiaries and the acquisition of hybris GmbH, Germany, and hybris (US) Corp.

The decrease of €422 million in accounts receivable and other assets was primarily the result of €229 million lower tax receivables and €191 million lower receivables from affiliated companies. Marketable securities and liquid assets decreased by €389 million to €731 million (2016: €1,120 million).

SAP SE shareholders' equity rose 6% to €16,171 million (2016: €15,291 million). Against outflows of €1,499 million associated with the payment of the 2016 dividend and

€500 million for the repurchase of stock in treasury, there was a €2,856 million increase in net income and an inflow of €22 million from the issuance of shares to service the share-based payments of employees. The equity ratio (that is, the ratio of shareholders' equity to total assets) remained unchanged at 47%.

Provisions increased €332 million to €1,671 million (2016: €1,339 million). Other provisions increased €97 million to €1,050 million (2016: €953 million), primarily as a result of higher additions to other employee-related liabilities and provisions for outstanding invoices on goods and services. In contrast, provisions for losses from derivative forward contracts decreased. Reserves for tax increased €234 million to €615 million (2016: €381 million).

Liabilities increased €848 million to €16,917 million (2016: €16,069 million). This increase is the net amount from two effects: On the one hand, liabilities to affiliated companies increased by €1,917 million, thereof €1,755 million relate to still-outstanding liabilities assumed in the course of the hybris transfer. On the other hand, SAP SE made a scheduled repayment of two bonds of €500 million each.

## Opportunities and Risks

SAP SE is subject to essentially the same opportunities and risks as the SAP Group. For more information, see the *Risk Management and Risks* section as well as the *Expected Developments and Opportunities* section.



# Corporate Governance Fundamentals

## Corporate Governance Statement

The German Commercial Code, section 315d in connection with section 289f, requires that, as a listed company, SAP SE publishes a corporate governance statement either as part of our management report or on our Web site. The Executive Board of SAP SE filed the corporate governance statement on February 20, 2018, and published it on our public Web site at [www.sap.com/corporate-en/investors/governance](http://www.sap.com/corporate-en/investors/governance).

For more information about the corporate governance of SAP, see the [Corporate Governance Report](#) section.

## Changes in Management

Steve Singh, the Executive Board member responsible for Business Networks and Applications, left SAP on April 30, 2017.

The Supervisory Board decided to expand the responsibilities of the Executive Board members Robert Enslin and Bernd Leukert as of May 1, 2017. Further, Adaire Fox-Martin and Jennifer Morgan were appointed to the Executive Board effective May 1, 2017. They assumed global responsibility for SAP's sales organization.

In October 2017, Christian Klein, Chief Operating Officer, was appointed to the Executive Board effective January 1, 2018. He leads the new board area Global Business Operations. Additionally, the Supervisory Board extended the Executive Board contract of Michael Kleinemeier until December 31, 2019.

## Information Concerning Takeovers

Information required under the German Commercial Code, sections 289a (1) and 315a (1), with an explanatory report:

**Composition of share capital:** For information about the composition of SAP SE share capital as at December 31, 2017, see the Notes to the Consolidated Financial Statements, [Note \(20\)](#). Each share entitles the bearer to one vote. American depositary receipts (ADRs) representing our shares are listed on the New York Stock Exchange in the United States. ADRs are certificates representing non-U.S. shares and are traded on U.S. stock exchanges instead of the underlying shares. One SAP ADR corresponds to one SAP share.

**Restrictions applying to share voting rights or transfers:** SAP shares are not subject to transfer restrictions except the lock-up

period under the SAP Share Matching Plan (SMP), described below. SAP held 35,098,989 treasury shares as at December 31, 2017, see the Notes to the Consolidated Financial Statements, [Note \(20\)](#). Treasury shares do not carry voting rights or dividend rights or other rights. Shares issued under the employee SMP are partly subject to contractual transfer restrictions for a three-year lock-up period unless the plan member's employment with SAP is ended under certain circumstances during that period. Until that lock-up period has expired, participating employees are not ordinarily allowed to dispose of the shares they have acquired under the plan. We are not aware of any other restrictions applying to share voting rights or to share transfers.

**Shareholdings that exceed 10% of the voting rights:** We are not aware of any direct or indirect SAP SE shareholdings that exceed 10% of the voting rights.

**Shares with special rights conferring powers of control:** No SAP shareholder has special rights conferring powers of control.

**Type of control over voting rights applying to employee shareholders who do not directly exercise their control rights:** As with other shareholders, employee holders of SAP shares exercise their control rights in accordance with the law and the Articles of Incorporation. In votes on the formal approval of their acts at the Annual General Meeting of Shareholders, employee representatives on the Supervisory Board, as all other members of the Supervisory Board, are prohibited from exercising the voting rights associated with their shares.

**Requirements concerning appointments and dismissals of members of the Executive Board and amendments to the Articles of Incorporation:**

Conditions for the appointment and dismissal of members of the Executive Board and amendment to the Articles of Incorporation reflect the relevant provisions of applicable European and German law, including Council Regulation (EC) No. 2157/2001 on the Statute for a European Company ("SE Regulation") and the German Stock Corporation Act. Under the Articles of Incorporation, the Executive Board consists of at least two members, who are appointed for a period of not more than five years by the Supervisory Board in accordance with the SE Regulation, articles 39 and 46. The number of members of the Executive Board is decided by the Supervisory Board. Executive Board members may be reappointed for, or their term of office extended by, a maximum of five years. A simple majority of the Supervisory Board membership is required for Executive Board appointments. In the event of a tie, the chairperson of the Supervisory Board has the deciding vote. The Supervisory Board

can appoint a chairperson of the Executive Board and one or more deputy chairpersons from among the members of the Executive Board. The Supervisory Board can revoke appointments to the Executive Board in accordance with the SE Regulation, article 9, and the German Stock Corporation Act, section 84, if compelling reasons exist, such as gross negligence on the part of the Executive Board member. If the Executive Board is short of a required member, one may be appointed in urgent cases by a court in accordance with the SE Regulation, article 9, and the German Stock Corporation Act, section 85. In accordance with the SE Regulation, article 59, and the German Stock Corporation Act, section 179, an amendment of the Articles of Incorporation requires a resolution of the General Meeting of Shareholders with a majority of at least three-quarters of the valid votes cast. For any amendments of the Articles of Incorporation that require a simple majority for stock corporations established under German law, however, the simple majority of the valid votes cast is sufficient if at least half of the subscribed capital is represented or, in the absence of such quorum, the majority prescribed by law (that is, two-thirds of the votes cast, pursuant to article 59 of the SE Regulation) is sufficient. Section 11 (2) of the Articles of Incorporation authorizes the Supervisory Board to amend the Articles of Incorporation where such amendments only concern the wording.

**Power to issue and repurchase shares:** The Annual General Meeting of Shareholders on May 12, 2016, granted powers to the Executive Board, subject to the consent of the Supervisory Board, to issue convertible and/or warrant-linked bonds, profit-sharing rights and/or income bonds (or combinations of these instruments), and to grant conversion or option rights in respect of SAP SE shares representing a total attributable portion of the share capital of not more than €100 million secured by a corresponding amount of contingent capital. These powers will expire on May 11, 2021. The Executive Board is also authorized until May 19, 2020, to increase the share capital by not more than €250 million by issuing new shares against contributions in cash and to increase the share capital by not more than €250 million by issuing new shares against contributions in cash or in kind. For more information about the different tranches of authorized capital and the aforementioned contingent capital, see the Articles of Incorporation, section 4. The Annual General Meeting of Shareholders on June 4, 2013, granted a power to the Executive Board in accordance with the German Stock Corporation Act, section 71 (1)(8), to buy back for treasury on or before June 3, 2018, SAP SE shares attributable in total to not more than €120 million of the share capital. The power is subject to the proviso that the shares repurchased, together with any shares that were previously acquired and are still held by SAP in treasury and any other shares controlled by SAP, must not in total exceed 10% of SAP's share capital. Executive Board powers, such as those described to issue and repurchase stock and to grant rights of conversion and subscription to shares of

SAP, are widely followed common practice among German companies such as SAP. They give the Executive Board the flexibility it needs, in particular, the option to use SAP shares as consideration in equity investments, raise funds on the financial markets at short notice on favorable terms, or return value to shareholders during the course of the year.

**Material agreements with change of control provisions:**

SAP SE has concluded the following material agreements with provisions that take effect in the event of a change of control, whether following a takeover bid or otherwise:

The terms of SAP's syndicated €2.5 billion revolving credit facility include a change-of-control clause. For more information about this syndicated credit facility, see the Notes to the Consolidated Financial Statements, *Note (25)*. This clause obliges SAP SE to notify the banks in case of a change of control. If, on receiving the notification, banks that represent at least two-thirds of the credit volume so require, the banks have the right to cancel the credit facility and demand complete repayment of the outstanding debt. If no continuation agreement is reached, the credit facility would end and the obligation to repay would become effective at an ascertainable time.

SAP has Eurobonds totaling €5.15 billion outstanding as of December 31, 2017. For more information about SAP's Eurobonds, see the Notes to the Consolidated Financial Statements, *Note (17b)*. Under the terms agreed with the buyers, we are required to notify the buyers of any change of control without delay. If there is a change of control and SAP is consequently assigned a lower credit rating within a defined period, buyers are entitled to demand repayment.

Under the terms of our U.S. private placements totaling approximately US\$1.3 billion, we are required to offer lenders repayment of outstanding debt if there is a change of control and SAP is consequently assigned a lower credit rating within a defined period. For more information about these private placements, see the Notes to the Consolidated Financial Statements, *Note (17b)*. Lenders would have at least 30 days to accept the offer.

We have entered into relationships with other companies to jointly develop and market new software products. These relationships are governed by development and marketing agreements with the respective companies. Some of the agreements include provisions that, in the event of a change of control over one of the parties, give the other party a right to consent to the assignment of the agreement or to terminate it.

**Change of control provisions in Executive Board**

**compensation agreements:** Agreements have been concluded with the members of the Executive Board concerning compensation in the event of a change of control. These agreements, which are customary in Germany and elsewhere, are described in the compensation report, which is an integral part of this management report. We have no analogous compensation agreements with our other employees.

# Business Conduct

## Championing Excellence in Business Conduct

In our business, trust is everything. We know that to engage with SAP fully, our customers must first trust that our business practices adhere to the highest standards of compliance and integrity. However, all too often we see the impact of poor business conduct in the wider business community. Corrupt and unethical practices irreparably damage brand reputations and lead to punitive financial penalties for the organizations involved. Such behavior undermines the rule of international law and is also linked to poverty and irreversible environmental damage across the globe.

New fraud and corruption schemes are discovered frequently. We must therefore constantly adapt our compliance approach to incorporate new best practices and meet new challenges.

## Doing Business the Right Way

SAP has developed a compliance management system that includes detailed policies and procedures that enable SAP to do business the right way. Audited regularly internally, the system encompasses all aspects of compliance management – from the analysis of compliance risks and defining objectives to running compliance programs as well as ongoing monitoring.

As with all governance protocols, the compliance management system cannot completely eliminate attempted misconduct. We focus on preventive measures as the most effective way to mitigate compliance risks, supported by detective and reactive activities.

To help foster a corporate culture where compliance is taken seriously, we have a code of business conduct. Approved by the SAP Executive Board, the code sets the standard for our dealings with customers, partners, competitors, and vendors. It is adapted locally and translated into local languages.

Key areas covered by the code of business conduct include:

- Prohibition of bribery and corruption in all its forms, including facilitation or “grease payments”
- Gifts and business entertainment limits
- Full, fair, and accurate accounting
- Conflicts of interest
- Confidentiality
- Anti-competitive practices
- Data protection and privacy rights

SAP has also established policies to maintain high standards within the following areas:

- Regulation of the appointment and remuneration of sales agents
- Charitable and political donations
- Intellectual property
- Accounting and financial reporting
- Export control and sanctions laws
- Data protection and privacy
- Sustainability

In addition, we expect our partners and suppliers to commit to meeting our high standards of integrity and sustainability. For this reason, we have in place the SAP Partner Code of Conduct and the SAP Supplier Code of Conduct so that partners and suppliers understand what is expected of them.

## Providing Comprehensive Training

A code of business conduct is only effective if everyone knows about it. That is why our employees receive full training on the standards that we expect. Our training programs cover, for example, guidelines on anti-corruption, competition law, governance for customer commitments, intellectual property, and information security.

In 2016, we introduced mandatory online training for all employees worldwide. In total, more than 81,500 employees (90% of SAP staff) received this training by the end of 2017.

Region	Training sessions completed by employees, in %	Training sessions completed by employees, in headcount
Americas	89	23,697
APJ	91	20,719
EMEA	88	37,104

### Breakdown of our training activities

In addition, our legal compliance and integrity office (LCIO) holds classroom training sessions for employees across the organization – from customer-facing staff to individuals in supporting roles such as corporate affairs and marketing. Furthermore, information about our compliance policies is included in onboarding sessions.

## Communicating Our Standards

Quarterly newsletters provide employees with information on a range of compliance-related topics. We ask business ethics and compliance-related questions in our annual People Survey and in company-wide polls throughout the year. In addition, employees can use our Corporate Portal at any time for quick and easy access to all global policies along with guidelines and additional information.

The LCIO conducts ongoing programs of calls and meetings to raise awareness of business conduct issues. Meanwhile, regular e-mail communications with subsidiaries and the availability of information in local languages help to promote leading standards of business conduct across every part of the SAP ecosystem.

In 2016, SAP introduced its partner integrity initiative, a global audit program. This initiative assesses whether our partners are operating in compliance with our partner code of conduct, especially in the area of anti-bribery and corruption law compliance. The initiative also provides partners with opportunities to enhance their own compliance management systems.

## Analyzing Compliance Risk

At SAP, we have mechanisms in place to prevent issues as well as means to address issues, should they arise. We review SAP business units for potential bribery or corruption risk on an ongoing basis. For example, in 2017, we analyzed quantitative data about SAP entities supporting 138 countries. This data includes revenue information, number of employees, percentage of public sector business, number of fraud allegations or incidents, changes or updates to relevant laws, and other quantitative information.

Based on this information and local management input, we determine a risk ranking for each country and a general risk profile for subsidiary locations. Generally, we find that our primary compliance risks are related to corruption, occupational fraud, export controls, and intellectual property. For more information, see our [Risk Report](#) section.

## Enforcing Policies

SAP is committed to ensuring that compliance policies are strictly enforced, and that any infringements are quickly flagged and acted upon. To achieve this, we have an effective global network of compliance officers who act as business conduct ambassadors.

The LCIO oversees the development and implementation of our code of business conduct, as well as other related policies and our anti-corruption compliance program. Global compliance officers are based at SAP headquarters and in important markets, especially where there are local language needs. In

addition, compliance officers at local subsidiaries assess issues and escalate them when necessary.

In addition to making regular reports to the CFO and the Executive Board, the chief global compliance officer reports to the Audit Committee of the Supervisory Board at least once a year. Matters of significance are brought to the attention of the Executive Board and the Audit Committee of the Supervisory Board when required.

## Facilitating Reporting and Remediation

Employees at all levels of the organization must disclose conflicts of interest to the LCIO. Disclosures are then followed up with guidance or mitigation if necessary.

If employees are concerned that our code of business conduct has been breached, or if they need advice on a compliance issue, they can access support in a number of ways. For example, they can:

- Call our governance helpline at +49 6227 7-40022
- E-mail the legal compliance and integrity office at [global-compliance-office@sap.com](mailto:global-compliance-office@sap.com)
- Contact local compliance officers by e-mail or telephone
- Use the anonymous online whistleblower tool

Reporting channels are published on SAP Corporate Portal, SAP.com, and in our codes of conduct for partners and suppliers. Most of these reporting mechanisms are available day and night, and concerns are treated as confidentially as possible in light of subsequent investigation. All concerns are investigated, and remedial action is taken if necessary. This may include termination of employment.

## Investigating Misconduct

SAP received communications alleging conduct that may violate anti-bribery laws. Furthermore, we are investigating allegations regarding conduct that certain independent SAP partners violated SAP contractual terms and sold SAP products and services in embargoed countries. We are also investigating allegations regarding direct sales between SAP and certain customers who may have engaged in unauthorized activities in embargoed countries. For more information on the allegations and our reaction to them, see [Note 23](#).

# Risk Management and Risks

## Our Risk Management

### Internal Control and Risk Management System

As a global company, SAP is exposed to a broad range of risks across our business operations. As a consequence, our Executive Board has established comprehensive internal control and risk management structures that enable us to identify and analyze risks early and take appropriate action. Our risk management and internal control system is designed to identify potential events that could negatively impact the Company and to provide reasonable assurance regarding the operating effectiveness over our financial reporting while ensuring the achievement of the Company objectives, specifically our ability to achieve our financial, operational, or strategic goals as planned.

This system comprises numerous control mechanisms and is an important element of our corporate decision-making process; it is therefore implemented as an integral part of SAP's business processes across the entire Group. We have adopted an integrated risk management and internal control approach to help maintain effective global risk management while also enabling us to aggregate risks and report on them transparently.

Due to our public listings in both Germany and the United States, we are subject to both German and U.S. regulatory requirements that relate to risk management and internal controls over financial reporting, such as provisions in the German Stock Corporation Act, section 91 (2) and the U.S. Sarbanes-Oxley Act (SOX) of 2002, specifically sections 302 and 404. Hence, our Executive Board has established an early warning system (risk management system) to ensure compliance with applicable regulations and an effective management of risks.

Our risk management system based upon the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Enterprise Risk Management – Integrating with Strategy and Performance, updated in 2017, is founded on three pillars, which include a dedicated risk management policy, a standardized risk management methodology, and a global risk management organization. Our internal control system consists of the internal control and risk management system for financial reporting (ICRMSFR) that also covers the broader business environment. In 2017, we adjusted existing control designs to adequately address the evolving risk environment and continued to

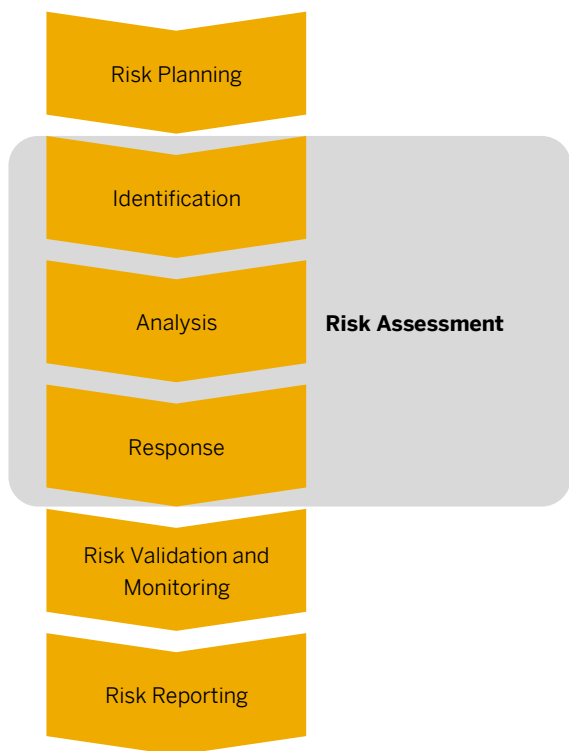
automate our internal control landscape, leveraging continuous control monitoring and continuous auditing activities in selected business areas. Using the current COSO Internal Control – Integrated Framework of 2013, we have defined and implemented internal controls along the value chain on a process and subprocess level to ensure that sound business objectives are set in line with the organization's strategic, operational, financial, and compliance goals. In addition, we have a governance model in place across risk management and the internal control system to ensure both systems are effective, as well as a central software solution to store, maintain, and report all risk-relevant information.

### Risk Management Policy and Framework

The risk management policy issued by our Executive Board governs how we handle risk in line with the Company's risk appetite and defines a methodology that is applied uniformly across all parts of the Group. The policy, updated and rolled out in 2017, stipulates who is responsible for conducting risk management activities and defines reporting and monitoring structures. Along with the policy, we introduced a new system-based Risk Management Policy Cockpit, describing all business process specifics associated with the risk management lifecycle. Our global corporate audit function conducts regular audits to assess the effectiveness of our risk management system. Every year, SAP's external auditor assesses if the SAP SE early risk identification system is adequate to identify risks that might endanger our ability to continue as a going concern. SAP's enterprise risk management covers risks in the areas of strategy, operational business, financial reporting, and compliance. As of today, the risk management system analyzes risks and only assesses or analyzes opportunities where it is deemed appropriate.

## Risk Management Methodology and Reporting

The following describes the key elements of the risk management process as part of SAP's risk management policy:



Risk planning and risk identification for both internal and external risks are conducted in cooperation between risk managers and the business units or subsidiaries across the Group. We use various techniques to identify risks. For example, we have identified risk indicators and developed a comprehensive risk catalog that includes risk mitigation strategies. Risk identification takes place at various levels of our organization to ensure that common risk trends are identified and end-to-end risk management across organizational borders is enabled. We apply both a qualitative and quantitative risk analysis as well as other risk analysis methods such as sensitivity analyses and simulation techniques.

To determine which risks pose the highest threat to the viability of the SAP Group, we classify them as "high," "medium," or

"low" based on the likelihood that a risk will occur within the assessment horizon as well as the impact the risk would have on SAP's business objectives if it were to occur. The scales for measuring these two indicators are given in the following tables.

Probability/Likelihood of Occurrence	Description
1% to 19%	Remote
20% to 39%	Unlikely
40% to 59%	Likely
60% to 79%	Highly Likely
80% to 99%	Near Certainty

In this framework, we define a remote risk as one that will occur only under exceptional circumstances and a near certain risk as one that can be expected to occur within the specified time horizon. The period for analyzing our risks correlates with the respectively associated business activities considering a relevant forecast horizon of up to one year, and up to 2020 where applicable. The period for analyzing the risks that could be possible threats to the Group's ability to continue as a going concern is eight rolling quarters.

Impact Level	Impact Definition
Insignificant	Negligible negative impact on business, financial position, profit, and cash flows
Minor	Limited negative impact on business, financial position, profit, and cash flows
Moderate	Some potential negative impact on business, financial position, profit, and cash flows
Major	Considerable negative impact on business, financial position, profit, and cash flows
Business-Critical	Detrimental negative impact on business, financial position, profit, and cash flows

Based on the combination of the likelihood that a risk will occur and its impact on SAP's reputation, business, financial position, profit, and cash flow, we classify the risks as "high," "medium," or "low."

<b>Probability</b>		Insignificant	Minor	Moderate	Major	Business-Critical
	80% to 99%	L	M	H	H	H
	60% to 79%	L	M	M	H	H
	40% to 59%	L	L	M	M	H
	20% to 39%	L	L	L	M	M
	1% to 19%	L	L	L	L	M
<b>Impact</b>						
		L = Low Risk		M = Medium Risk		H = High Risk

Risk analysis is followed by risk response and risk monitoring. The risk exposure and the risk description, as well as the appropriateness of agreed responses, are validated by the accountable management. Our risk managers work in close cooperation with the business owners, ensuring that effective strategies are implemented to address risks. Business owners are responsible for continuously monitoring the risks and the effectiveness of mitigation strategies, with support from the respective risk managers. Risks might be reduced by taking active steps based on risk approval. To provide greater risk transparency and enable appropriate decision-making for business owners, we have established a risk delegation of authority (RDOA) for relevant parts of the organization as deemed appropriate. RDOA is a risk management decision-making hierarchy that helps business owners gain timely insight into business transactions with the greatest risk, so they are better able to review the relevant information, understand the risk profile and associated mitigation strategies, and determine if their approval is warranted. Depending on the exposure, approval is required at different levels of the Company, up to and including the Executive Board.

All identified and relevant risks are reported at the local, regional, and global levels in accordance with our risk management policy. At local, regional, and global levels, we have established executive risk councils that regularly discuss risks and countermeasures and that monitor the success of risk mitigation. In addition, the Executive Board is informed quarterly about individual risks based on clearly defined qualitative reporting criteria. Newly identified or existing significant risks that are above a defined threshold, meet a qualitative criterion, or with a potential significant impact are also reported to the chairperson of the Supervisory Board and to the Audit Committee of the Supervisory Board. This includes risks along our strategic growth drivers as well as any risks to our ability to continue as a going concern, the latter supported by a process that analyzes those risks with respect to potential effects on liquidity, excessive indebtedness, and insolvency.

## Risk Management Organization

Our global risk management organization (Global GRC) oversees the Group-wide systematic identification, assessment, management, and monitoring of operational, financial, compliance, and strategic risks as well as opportunities. In addition, the Global GRC function is responsible for the standardized internal risk reporting to risk committees on different levels within the Company in line with the internal GRC Risk Reporting Standard, including the Executive Board, the chairperson of the Supervisory Board, and the Audit Committee of the Supervisory Board, along with the external risk reporting. Furthermore, Global GRC is responsible for the regular maintenance and implementation of our risk management policy.

Operational, financial, and strategic risk management is uniformly implemented at SAP. Independent GRC risk managers are assigned to each of SAP's important business units and business activities and to selected strategic initiatives. All GRC risk managers, together with assigned risk contacts in the business units, continuously identify and assess risks associated with material business operations using a uniform approach and monitor the implementation and effectiveness of the measures chosen to mitigate risks. Further financial risk management activities are performed by our global treasury and our global tax function. Risk management of compliance risks such as corruption, conflict of interest, and fraud is performed by our Legal Compliance & Integrity Office (LCIO) and general legal risks by Global Legal. Sanction and embargo-related risks are managed by the Export Control team, harassment and other HR-related issues by our Global Labor & Employee Relations Office, and IP risks by our Global IP Office and our LCIO.

During the merger and acquisition and post-merger integration phase, newly acquired companies are subject to risk management performed by our Corporate Development M&A function. Furthermore, for as long as the newly acquired companies are not integrated, existing risk management structures are maintained or enhanced within the acquired companies for purposes of compliance with legal requirements.

Risk managers are responsible for supporting and monitoring the implementation of risk management across the Group that is both effective and compliant with regulatory requirements and SAP's global risk management policy. Based on our risk management policy, all relevant risks and risk-related matters must be reported to the Global GRC organization.

The head of Global GRC, who reports to the Group Chief Financial Officer (CFO), is responsible for SAP's internal control and risk management program, and provides regular updates to the Audit Committee of the Supervisory Board. The overall risk profile of the Group is consolidated by the head of Global GRC.

## Internal Control and Risk Management System for Financial Reporting

The purpose of our system of internal control over financial reporting is to provide reasonable assurance that our financial reporting is reliable and in compliance with applicable generally accepted accounting principles. Because of the inherent limitations of internal control over financial reporting, it might not prevent or bring to light all potential misstatements in our financial statements.

SAP's internal control and risk management system for financial reporting (ICRMSFR) is based on our Group-wide risk management methodology. The ICRMSFR includes organizational, control, and monitoring structures designed to ensure that data and information concerning our business are collected, compiled, and analyzed in accordance with applicable laws and properly reflected in the IFRS Consolidated Financial Statements.

Our ICRMSFR also includes policies, procedures, and measures designed to ensure compliance of SAP's financial reports with applicable laws and standards. We analyze new statutes, standards, and other pronouncements concerning IFRS accounting and its impact on our financial statements and ICRMSFR. Failure to adhere to these new statutes, standards, and other pronouncements would present a substantial risk to the compliance of our financial reporting. Finally, the ICRMSFR has both preventive and detective controls, including, for example, automated and non-automated reconciliations, segregated duties with two-person responsibility, authorization concepts in our software systems, and corresponding monitoring measures.

Our Corporate Financial Reporting (CFR) department codifies all accounting policies in our global group accounting and revenue recognition guidelines. These policies, the corporate closing schedule, and our process handbooks together define the closing process. Under this closing process, we prepare, predominately through centralized or external services, the financial statements of all SAP legal entities for consolidation by

CFR. CFR and other corporate departments are responsible for ensuring compliance with Group accounting policies and monitor the accounting work. CFR also conducts reviews of our accounting processes and books.

We have outsourced some work, such as valuing projected benefit obligations and share-based payment obligations, quarterly tax calculations for most entities, and purchase price allocations in the context of asset acquisitions and business combinations. We have also outsourced the preparation of the local statutory financial statements for a number of our subsidiaries. The employees who work on SAP's financial reporting receive training in the respective policies and processes.

Based on an analysis of the design and operating effectiveness of our respective internal controls over financial reporting, a committee presents the results of the assessment on the ICRMSFR effectiveness with respect to our IFRS consolidated financial statements as at December 31 each year to the Group CFO. The committee meets regularly to set the annual scope for the test of effectiveness, to evaluate any possible weaknesses in the controls, and to determine measures to address them adequately. During its own meetings, the Audit Committee of the Supervisory Board regularly scrutinizes the resulting assessments of the effectiveness of the internal controls over financial reporting with respect to the IFRS consolidated financial statements.

The assessment of the effectiveness of the ICRMSFR related to our IFRS consolidated financial statements was that on December 31, 2017, the Group had an effective internal control system over financial reporting in place.

Additionally, and in compliance with German commercial law requirements, SAP maintains an effective internal control system beyond financial reporting. This is supported through automated controls (continuous control monitoring) as part of our business processes.

## Risk Management and Internal Control Governance

Our Executive Board is responsible for ensuring the effectiveness of the risk management and internal control system. The effectiveness of both systems and their implementation in the different Executive Board areas is monitored by each board member. We regularly provide a status on the risk management and the internal control system to the Audit Committee of the Supervisory Board. Key risks are reported quarterly to the chairperson of the Supervisory Board and to the Audit Committee of the Supervisory Board. The Audit Committee of the Supervisory Board regularly monitors the effectiveness of SAP's risk management and internal control system. At the direction of our Audit Committee, the Corporate



Audit department regularly audits various aspects of the risk management system and its effectiveness. Additional reassurance is obtained through the external audit of the effectiveness of our internal control system over financial reporting and the early warning system.

## Software Solution Deployed

We use our own risk management software, SAP solutions for GRC powered by SAP HANA, to effectively support the governance process. Risk managers record and address identified risks using our risk management software to help create transparency across all known risks that exist in the Group, as well as to facilitate risk management and the associated risk reporting. Our continuous controls monitoring activities are performed utilizing our GRC software as well. This information is available to managers by means of a mobile app, through direct access to our SAP Fiori application for enterprise risk reporting, and in regularly issued reports, and is consolidated and aggregated for the quarterly risk report to the Executive Board. The solution also supports the risk-based approach of the ICRMSFR.

## Risk Factors

SAP's transition to the cloud led to an adaptation of operations, business models, and processes. Subsequently, this required an adaptation of our risk profile and a revision of the risk reporting

structure, including the risk categories and risk factors. We aimed to reduce the complexity of the risk report while at the same time increase transparency and avoid redundancies. We therefore simplified and standardized the structure of all risk factors to improve the risk report's readability. As a result, this led to a reduction of risk categories from 10 to 6 and a reduction of risk factors from 36 to 23.

In pursuance of increased transparency and clarity of our risk reporting, we also consolidated the risk factors (for example Infringement of Intellectual Property, Third-Party Licensing and Lawsuits into Legal and IP), regrouped risk factors within the categories (for example all strategic risk factors are now associated with the category 'Strategic Risks'), and made certain reallocations between risk categories (for example, Data Protection and Privacy to Economic, Political, Social and Regulatory Risks) together with a consequent rephrasing of risk factors for improved risk description. The following sections outline our revised risk factors that we have identified and continuously track. Compared to our internal risk reporting, we externally present our risk factors on an aggregated level.

An overview of the risk categories and the corresponding risk factors is outlined in the table below, where the risk factors are categorized according to our framework detailed in the [Risk Management Methodology and Reporting](#) section.

### Overview of Risk Factors (Aggregated Statement for 2017)

	Probability	Impact	Risk Level	Evolution <sup>1)</sup>
<b>Economic, Political, Social, and Regulatory Risks</b>				
Global Economic and Political Environment	<i>likely</i>	<i>business-critical</i>	<i>high</i>	→
International Laws and Regulations	<i>likely</i>	<i>business-critical</i>	<i>high</i>	↗
Legal and IP	<i>likely</i>	<i>business-critical</i>	<i>high</i>	→
Data Protection and Privacy	<i>unlikely</i>	<i>business-critical</i>	<i>medium</i>	→
<b>Corporate Governance and Compliance Risks</b>				
Unauthorized Disclosure of Information	<i>remote</i>	<i>business-critical</i>	<i>medium</i>	→
Ethical Behavior	<i>likely</i>	<i>business-critical</i>	<i>high</i>	↗
Environment and Sustainability	<i>unlikely</i>	<i>moderate</i>	<i>low</i>	→
<b>Financial Risks</b>				
Sales and Revenue Conditions	<i>unlikely</i>	<i>moderate</i>	<i>low</i>	→
Liquidity	<i>remote</i>	<i>major</i>	<i>low</i>	→
Management Use of Estimates	<i>unlikely</i>	<i>moderate</i>	<i>low</i>	→
Accounting Pronouncements	<i>unlikely</i>	<i>major</i>	<i>medium</i>	→
Currency, Interest Rate, and Share Price Fluctuations	<i>remote</i>	<i>major</i>	<i>low</i>	→

## Overview of Risk Factors (Aggregated Statement for 2017)

	Probability	Impact	Risk Level	Evolution <sup>1)</sup>
Insurance	<i>remote</i>	<i>business-critical</i>	<i>medium</i>	→
Venture Capital	<i>remote</i>	<i>minor</i>	<i>low</i>	→
<b>Human Capital Risks</b>				
Human Workforce	<i>unlikely</i>	<i>major</i>	<i>medium</i>	→
<b>Operational Business Risks</b>				
Sales and Services	<i>unlikely</i>	<i>major</i>	<i>medium</i>	→
Partner Ecosystem	<i>unlikely</i>	<i>major</i>	<i>medium</i>	→
Cloud Operations	<i>unlikely</i>	<i>business-critical</i>	<i>medium</i>	→
Security	<i>unlikely</i>	<i>business-critical</i>	<i>medium</i>	→
Technology and Products	<i>unlikely</i>	<i>business-critical</i>	<i>medium</i>	→
<b>Strategic Risks</b>				
Market Share and Profit	<i>unlikely</i>	<i>business-critical</i>	<i>medium</i>	→
Mergers and Acquisitions	<i>remote</i>	<i>major</i>	<i>low</i>	↘
Innovation	<i>remote</i>	<i>business-critical</i>	<i>medium</i>	→
	Icon:		decreased	↘
			unchanged	→
			increased	↗

<sup>1)</sup> Evolution: Risk level compared with previous year.

All described risks are each applicable to a different extent to our reportable segments (Applications, Technology & Services, and SAP Business Network) unless otherwise noted.

SAP SE is the parent company of the SAP Group. Consequently, the risks described below also apply, directly or indirectly, to SAP SE.

## Economic, Political, Social, and Regulatory Risks

**Uncertainty in the global economy, financial markets, social and political instability caused by state-based conflicts, terrorist attacks, civil unrest, war, or international hostilities could lead to disruptions of our business operations or have a negative impact on our business, financial position, profit, and cash flows.**

As a global company, we are influenced by multiple factors that are difficult to predict and beyond our influence and control. Any of these factors could have a significant adverse effect on the local economy and beyond.

These events could lead to risks in the following areas, among others:

- General economic, political, social, environmental, market conditions, and unrest (for example, Turkey, Venezuela, UK/ Brexit)
- Continued deterioration in global economic conditions (impact on accurate forecast) or budgetary constraints of national governments
- Financial market volatility episodes, global economic crises and chronic fiscal imbalances, slowing economic conditions, or disruptions in emerging markets
- Higher credit barriers for customers, reducing their ability to finance software purchases
- Increased number of bankruptcies among customers, business partners, and key suppliers
- Terrorist attacks or other acts of violence, natural disasters, pandemic diseases impacting our business

Any of these events could have an adverse effect on our business operations, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible such as:

- Ongoing shift to a higher share of cloud subscriptions and software support revenue streams will lead to more predictable revenue streams over time, providing increased stability against financial volatility
- Internal cost discipline and a conservative financial planning
- Reshaping of our organizational structure and processes to increase efficiency

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. We estimate the probability of occurrence of this risk to be likely. This could exacerbate the other risks we describe in this report or cause a negative deviation from our revenue and operating profit target. We classify this risk as a high risk.

**Laws, regulatory requirements and standards in Germany, the United States, and elsewhere continue to be very stringent. Our international business activities and processes expose us to numerous and often conflicting laws and regulations, policies, standards, or other requirements and sometimes even conflicting regulatory requirements, and to risks that could harm our business, financial position, profit, and cash flows.**

We are a global company and currently market our products and services in more than 180 countries and territories in the Americas (Latin America and North America); Asia Pacific Japan (APJ); China, Hong Kong, Macau, and Taiwan (Greater China); Europe, Middle East, and Africa (EMEA); and Middle and Eastern Europe (MEE) regions. As a European company domiciled in Germany with securities listed in Germany and the United States, we are subject to European, German, U.S., and other governance-related regulatory requirements.

Our business in these countries is subject to numerous risks inherent to international business operations. Among others, these risks include:

- Possible tax constraints impeding business operations in certain countries
- Changes in accounting standards and tax laws including, but not limited to, conflict and overlap among tax regimes measures as well as the introduction of new tax concepts that harm digitized business models
- Discriminatory, protective, or conflicting fiscal policies and tax laws, such as certain protectionist measures included in the U.S. Tax Reform which was enacted end of 2017 and involves uncertainties as to how the U.S. government will implement the new law
- Workforce restrictions resulting from changing laws and regulations, from political decisions (such as Brexit,

government elections), or through required works council involvements, labor union approvals, and immigration laws in different countries

- Protectionist trade policies, import and export regulations, and trade sanctions (such as in Russia), and embargoes (such as in Iran) including, but not limited to, country-specific software certification requirements
- Violations of country-specific sanctions (such as the UN sanction against North Korea or the United States' sanction requirements against Iran and certain other countries)
- Compliance with and stringent enforcement of laws and regulations (including interpretations), implications of government elections, lack of reforms, data protection and privacy rules, regulatory requirements and standards (such as the Payment Card Industry Data Security Standard (PCI DSS))
- Expenses associated with the localization of our products and compliance with local regulatory requirements
- Difficulties enforcing intellectual property and contractual rights in certain jurisdictions

In 2017, an investigation was initiated and is ongoing with regards to potential sanction violations. For more information relating to the potential sanctions violations noted above, see the Notes to the Consolidated Financial Statements, [Note \(23\)](#).

As we expand into new countries and markets or extend our business activities in these markets, including emerging markets, these risks could intensify. The application of the respective local laws and regulations to our business is sometimes unclear, subject to change over time, and often conflicting among jurisdictions. Additionally, these laws and government approaches to enforcement are continuing to change and evolve, just as our products and services continually evolve. Compliance with these varying laws and regulations could involve significant costs or require changes in products or business practices. Non-compliance could result in the imposition of penalties or cessation of orders due to alleged non-compliant activity. Governmental authorities could use considerable discretion in applying these statutes and any imposition of sanctions against us could be material. One or more of these factors could have an adverse effect on our operations globally or in one or more countries or regions, which could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible. For example:

- We continuously monitor new and increased regulatory requirements, updated or new enforcement trends, and publicly available information on compliance issues in the computer software industry, in the emerging markets where

we invest our resources, and in the business environment in general to cope with an increase in regulation enforcement efforts of certain countries or state-driven protectionism

- As a reaction to preliminary findings in the investigations into the alleged export restriction violations, SAP has taken actions to terminate access to SAP products and services for certain end users and to block additional business activities with these end users through SAP or SAP partners
- We receive guidance from external economics consultants, law firms, tax advisors, and authorities in the concerned countries, and take legal actions when necessary
- We have a strong legal and compliance office presence in various countries, with compliance safeguards supported and monitored by SAP legal teams and LCIO, maintaining an effective data protection and privacy office and associated policy
- We initiated efforts to strengthen the Export Control Compliance team and we increased our resources in high-risk countries
- We continuously update and refresh our compliance programs to improve our effectiveness and to ensure that our employees understand and comply with the SAP Code of Business Conduct. This process is coordinated by our LCIO, a team of dedicated resources who are tasked with managing our policy-related compliance measures
- Our LCIO team coordinates or provides guidance on policy implementation, training, and enforcement efforts throughout SAP. Those efforts are monitored and tracked to allow trending and risk analysis and to ensure consistent policy application throughout the SAP Group

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. We estimate the probability of occurrence of this risk to be likely. We classify this increased risk as a high risk.

**Claims and lawsuits against us, such as for IP infringements, or our inability to obtain or maintain adequate licenses for third-party technology, could have an adverse effect on our business, financial position, profit, cash flows, and reputation. Moreover, similar adverse effects could result if we are unable to adequately protect or enforce our own intellectual property.**

We believe that we will continuously be subject to claims and lawsuits, including intellectual property infringement claims, as our solution portfolio grows; as we acquire companies with increased use of third-party code including open source code; as we expand into new industries with our offerings, resulting in greater overlap in the functional scope of offerings; and as non-practicing entities that do not design, manufacture, or distribute products increasingly assert intellectual property infringement

claims. Moreover, protecting and defending our intellectual property is crucial to our success.

The outcome of litigation and other claims or lawsuits is intrinsically uncertain and could lead, for example, to the following risks:

- Claims and lawsuits being brought against us, including claims and lawsuits involving businesses we have acquired
- We might be dependent in the aggregate on third-party technology, including cloud and Web services, that we embed in our products or that we resell to our customers
- Third parties have claimed, and might claim in the future, that we infringe their intellectual property rights or that we are overusing or misusing licenses to these technologies
- We integrate certain open source software components from third parties into our software. Open source licenses might require that the software code in those components or the software into which they are integrated be freely accessible under open source terms
- Despite our efforts, we might not be able to prevent third parties from obtaining, using, or selling without authorization what we regard as our proprietary technology and information. In addition, proprietary rights could be challenged, invalidated, held unenforceable, or otherwise affected. Moreover, the laws and courts of certain countries might not offer effective means to enforce our legal or intellectual property rights. Finally, SAP may not be able to collect all judgments awarded to it in legal proceedings
- Some intellectual property might be vulnerable to disclosure or misappropriation by employees, partners, or other third parties

Third parties might reverse-engineer or otherwise obtain and use technology and information that we regard as proprietary. Accordingly, we might not be able to protect our proprietary rights against unauthorized third-party copying or utilization. Adverse outcomes to some or all of the claims and lawsuits pending against us might result in the award of significant damages or injunctive relief against us or brought against us in the future that could hinder our ability to conduct our business and could have an adverse effect on our reputation, business, financial position, profit, and cash flows. Third parties could require us to enter into royalty and licensing arrangements on terms that are not favorable to us, cause product shipment delays, subject our products to injunctions, require a complete or partial redesign of products, result in delays to our customers' investment decisions, and damage our reputation. Third-party claims might require us to make freely accessible under open source terms one of our products or third-party (non-SAP) software upon which we depend.

Any legal action we bring to enforce our proprietary rights could also involve enforcement against a partner or other third party, which might have an adverse effect on our ability, and our

customers' ability, to use that partner's or other third parties' products.

The outcome of litigation and other claims or lawsuits is intrinsically uncertain. Management's view of the litigation might also change in the future. Actual outcomes of litigation and other claims or lawsuits could differ from the assessments made by management in prior periods, which are the basis for our accounting for these litigations and claims under IFRS.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible. For example:

- Our LCIO sets and manages internal policies related to our Code of Business Conduct, including the handling of third-party intellectual property. We monitor compliance with these policies. Our Global GRC organization works closely with the LCIO, the Global IP Office, and Corporate Audit, and is responsible for the management and reporting of potential risks associated with third-party intellectual property
- We have established various internal programs, such as internal policies, processes, and monitoring, to assess and manage the risks associated with open source, and third-party intellectual property
- We endeavor to protect ourselves in the respective third-party software agreements by obtaining certain rights in case such agreements are terminated
- We are party to certain patent cross-license agreements with third parties, which removes the risk of litigation with respect to the involved patents
- We rely on a combination of the protections provided by applicable statutory and common law rights, including trade secret, copyright, patent, and trademark laws, license and non-disclosure agreements, and technical measures to establish and protect our proprietary rights in our products

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. We estimate the probability of occurrence of this risk to be likely. We classify this risk as a high risk.

We are named as a defendant in various legal proceedings for alleged intellectual property infringements. For more information and a more detailed report relating to certain of these legal proceedings, see the Notes to the Consolidated Financial Statements, [Note \(23\)](#).

**Non-compliance with applicable data protection and privacy laws or failure to adequately meet the requirements of SAP's customers with respect to our products and services could lead to civil liabilities and fines, as well as loss of customers and damage to SAP's reputation.**

As a global software and service provider, SAP is required to comply with local laws wherever SAP does business. With regard to data protection requirements, in May 2016, the EU enacted a "General Data Protection Regulation" (GDPR) with the aim of further harmonizing data protection laws across the EU. The GDPR will be directly applicable law in all EU and EEA member states as of May 25, 2018, after a two-year transition period. Within limits, member states can supplement the GDPR with additional national rules.

Non-compliance with applicable data protection and privacy laws, in particular the EU GDPR, by SAP and/or any of the subcontractors engaged by SAP for the processing of personal data could lead, for example, to risks in the following areas:

- Mandatory disclosures of breaches to affected individuals, customers, and data protection supervisory authorities
- Investigations and administrative measures by data protection supervisory authorities, such as the instruction to alter or stop non-compliant data processing activities, including the instruction to stop using non-compliant subcontractors
- Fines of up to 4% of SAP's annual Group turnover
- Damage claims by customers
- Harm to SAP's reputation

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible. For example:

- We launched initiatives across all board areas to assess the compliance of SAP's products and services, as well as SAP's internal data processing operations with the GDPR, and to mitigate identified compliance gaps
- Data protection and privacy is reflected in the mandatory product standards of SAP's product development lifecycle
- We continuously review SAP's existing standards and policies to include changes to applicable laws and regulations
- We continuously enhance our data center operations worldwide, also taking into account local and sector-specific market and legal requirements
- We have a data protection management system in place in the following areas where data protection is critical: Digital Business Services (Product and Cloud Support, Enterprise Support and Premium Engagements, Global Consulting Delivery, CoE), Products & Innovation (Cloud Operations, Maintenance Support, Software Development), Marketing, HR, Global Customer Operations (Region MEE and EMEA).
- We actively monitor legal developments and engage with political stakeholders and government authorities, directly or through industry associations, to clarify questions relevant to SAP and SAP's business

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

## Corporate Governance and Compliance Risks

### **Our controls and efforts to prevent the unauthorized disclosure of confidential information might not be effective.**

Confidential information and internal information related to topics such as our strategy, new technologies, mergers and acquisitions, unpublished financial results, customer data, or personal data, could be disclosed prematurely or inadvertently and subsequently lead to market misperception and volatility.

Such disclosure could lead to risks in the following areas, among others:

- Disclosure of confidential information and intellectual property, defective products, production downtimes, supply shortages, and compromised data (including personal data) through, for example, inappropriate usage of social media by employees
- Requirement to notify multiple regulatory agencies and comply with applicable regulatory requirements and, where appropriate, the data owner

Any one or more of these events could have an adverse effect on our market position and lead to fines and penalties. In addition, this could have an adverse effect on our business, reputation, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Mandatory compliance baseline training for all employees (security awareness, data privacy and data protection, compliance, and communication)
- Social engineering tests
- Standards for safe internal and external communication
- Technical security features in our IT hardware and communication channels, such as mandatory encryption of sensitive data
- All security groups have been combined organizationally into one global security unit to strengthen the security capabilities
- Continuous adoption of internal security measures

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a medium risk.

### **Unethical behavior and non-compliance with our integrity standards due to intentional and fraudulent employee behavior could seriously harm our business, financial position, profit, and reputation.**

SAP's leadership position in the global market is founded on the long-term and sustainable trust of our stakeholders worldwide. Our overarching approach is one of corporate transparency, open communication with financial markets, and adherence to recognized standards of business integrity. The SAP Code of Business Conduct, adopted by the Executive Board on January 29, 2003, and updated as necessary since then, memorialized and supplemented the already existing guidelines and expectations for the business behavior practiced at SAP.

However, we might for instance encounter the following risks associated with:

- Non-compliance with our integrity standards and violation of compliance related rules, regulations, and legal requirements including, but not limited to, anticorruption and bribery legislation in Germany, the U.S. Foreign Corrupt Practices Act, the UK Bribery Act, and other local laws prohibiting corrupt payments by employees, vendors, distributors, or agents
- Unethical and fraudulent behavior of individual employees or partners leading to criminal charges, fines, and claims by injured parties also considering the ongoing investigations for example in South Africa, the Middle East, and North Africa
- Collusion with external third parties, for example providing assistance in securing contracts
- Fraud and corruption together with operational difficulties, especially in countries with a high Corruption Perceptions Index
- Impact on business activities in regulated industries such as public sector, healthcare, banking, or insurance

Any one or more of these events could have an adverse effect on our business, reputation, financial position, share price, profit, and cash flows.

In 2017, SAP encountered situations that required clear messaging and strong action on non-compliance in the context of ethical behavior with the potential to harm our business. In South Africa, SAP is investigating its dealings with the public sector. For more information relating to the alleged anti-bribery law violations noted above, see the Notes to the Consolidated Financial Statements, [Note \(23\)](#).

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Comprehensive compliance management system (CMS) based on the three pillars of prevention, detection, and reaction

- Root cause analysis of all deviations related to unethical or fraudulent behavior to improve associated business processes and prevent further violations
- Discontinued engagement of sales agents as well as the payment of sales commissions on public sector deals in high-risk countries
- Internal monitoring of our CMS approach
- Several educational, counseling, control, and investigative instruments
- Mandatory SAP Code of Business Conduct applicable to every SAP employee, providing legal compliance guidance on how to avoid unethical behavior and solve dilemma situations
- Annual reconfirmation of SAP Code of Business Conduct by SAP's workforce (except where disallowed by local legal regulations)
- Compliance policies aimed at managing third parties and preventing misuse of third-party payments for illegal purposes
- Controls in our travel, entertainment, gift, and expense policies
- Promoting a commitment to business with integrity through our partner and vendor ecosystems
- As a reaction to preliminary findings in the alleged anti-bribery law violations, we are implementing enhancements to our anti-corruption compliance program, including guidance and policy changes as well as additional internal controls related to compliance with international anti-bribery laws and additional compliance staff.

Despite our comprehensive compliance programs and established internal controls, intentional efforts of individuals to circumvent controls or engage in fraud for personal gains cannot always be prevented.

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. We estimate the probability of occurrence of this risk to be likely. We classify this increased risk as a high risk.

**Failure to meet customer, partner, or other stakeholder expectations or generally accepted standards on climate change, energy constraints, and our social investment strategy could negatively impact SAP's business, results of operations, and reputation.**

Energy and emissions management are an integral component of our holistic management of social, environmental, and economic risks and opportunities.

We have identified risks in this context, including, but not limited to, the following:

- Failure to meet customer, partner, or other stakeholder expectations or generally accepted standards on climate

change, energy constraints, and our social investment strategy

- Failure to achieve communicated (2020 and 2025) targets for greenhouse gas emissions
- Failure to maintain rating in sustainable investment indexes (Dow Jones Sustainability Indices and the CDP Climate Performance and Disclosure Leadership Indices)

If we do not meet stakeholder expectations in the areas identified, our rating in sustainable investment indexes might decrease, which could have an adverse effect on our reputation, profit, and share price.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Proactive identification and addressing of social and environmental issues
- Recognition for our sustainability efforts is shared with the market
- Ongoing efforts and activities to maintain our listing in the most prominent and recognized sustainability indexes, such as the Dow Jones Sustainability Indices and the CDP Climate Performance and Disclosure Leadership Indices
- We met our greenhouse gas emissions target of 380 kilotons by 55 kilotons

We cannot exclude the possibility that if the risk were to occur, it could have a moderate impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a low risk.

## Financial Risks

**Our sales and revenue conditions are subject to market fluctuations and our forecasts might not be accurate.**

Our revenue and operating results can vary and have varied in the past, sometimes substantially, from quarter to quarter. Our revenue in general, and our software revenue in particular, is difficult to forecast for a number of reasons, and could lead to risks related to the following, among others:

- Challenges in pipeline development and realization
- Long sales cycles for many of our products
- Timing issues with respect to the introduction of new products and services or product and service enhancements by SAP or our competitors
- Large size, complexity, and extended settlement of individual customer transactions
- Introduction/adaptation of licensing and deployment models such as cloud subscription models
- Adoption of, and conversion to, new business models, leading from upfront payment models to an increase in pay-per-use

or subscription-based payment models, thus the respective service period can typically range from one to three years, and in some cases, up to five years

- Existing customers might cancel or not renew their maintenance contracts, or decide not to buy additional products and services
- Changes in customer budgets or seasonality of technology purchases by customers
- Decreased software sales that could have an adverse effect on related maintenance and services revenue
- Shortfall in anticipated revenue or delay in revenue recognition or deployment models that require revenue to be recognized over an extended period of time
- Inability of acquired companies to accurately predict their sales pipelines
- High operating expenses or insufficient revenue generation to offset the significant research and development costs

In recent years, the trend has been towards an increased number of sales transactions, with the average deal size remaining more or less constant. However, the loss or delay of one or a few large opportunities could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Implementation of methodologies and metrics for continuous forecasting and trend analysis in our business
- Pipeline analyses based on our business planning, budgeting, and forecasting
- Ongoing analysis and monitoring of demands, supplies, and our competitive environment
- Constant monitoring of our revenues, costs, and operational KPIs utilizing system-based, real-time reporting to continuously improve our business performance

We cannot exclude the possibility that if the risk were to occur, it could have a moderate impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a low risk.

**External factors could impact our liquidity and increase the default risk associated with, and the valuation of, our financial assets.**

Macroeconomic factors such as an economic downturn could have an adverse effect on our future liquidity. We use a globally centralized financial management approach to control financial risk, such as liquidity, exchange rate, interest rate, counterparty, and equity price risks. The primary aim is to maintain liquidity in the SAP Group at a level that is adequate to meet our obligations at any time.

However, adverse macroeconomic factors could increase the default risk associated with the investment of our total Group liquidity, and could lead to the following risks, among others:

- Group liquidity shortages
- Inability to repay financial debt
- Increased default risk of financial investments, which might lead to significant impairment charges in the future
- Limitation of operating and/or strategic financial flexibility

Any one or more of these events could have an impact on the value of our financial assets, which could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- We have policies and measures in place to support strong operating cash flow
- SAP's investment policy with regards to total Group liquidity is described in our internal treasury guidelines, which is a collection of uniform rules that apply globally to all companies in the SAP Group. Among other things, it requires that investments, with limited exceptions, are only executed in assets and funds rated BBB flat or better
- The weighted average rating of the investments of our total Group liquidity is in the area of A–
- We pursue a policy of cautious investment characterized by wide portfolio diversification with a variety of counterparties, predominantly short-term investments, and standard investment instruments

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a low risk.

**Management use of estimates could negatively affect our business, financial position, profit, and cash flows.**

To comply with IFRS, management is required to make numerous judgments, estimates, and assumptions that affect the reported financial figures.

These management decisions could lead to risks in the following areas, among others:

- The facts and circumstances, as well as assumptions on which management bases these estimates and judgments and management's judgment regarding the facts and circumstances, might change over time

This could result in significant changes in the estimates and judgments and, consequently, in the reported financials, and



could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Control procedures to make sure that our estimates and judgments are adequate, such as two-person verification to significant estimating

We cannot exclude the possibility that if the risk were to occur, it could have a moderate impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a low risk.

**Current and future accounting pronouncements and other financial reporting standards, might negatively impact our financial results.**

We regularly monitor our compliance with applicable financial reporting standards and review new pronouncements and drafts thereof that are relevant to us. As a result of new standards, changes to existing standards, and changes in their interpretation, we might be required to change our accounting policies.

This could lead to risks in the following areas, among others:

- Not being able to react in a timely manner to new accounting pronouncements and financial reporting standards concerning revenue recognition (including the new IFRS 15 on revenue from contracts with customers that we will need to adopt in 2018)
- Unpredictable changes in interpretation of standards

Any one or more of these events could have an adverse effect on our business, financial position, and profit.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Regular monitoring of our compliance with applicable financial reporting standards in order to perceive changes at an early stage
- Review of new pronouncements and drafts that are relevant to us

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

**As a globally operating company, SAP is subject to various financial risks related to currencies, interest rates, and share**

**price fluctuations, which could negatively impact our business, financial position, profit, and cash flows.**

Because we operate throughout the world, a significant portion of our business is conducted in foreign currencies. In 2017, approximately 72.4% of our revenue was attributable to operations in foreign currencies. This foreign currency business therefore gets translated into our reporting currency, the euro.

This could lead to the following risks, among others:

- Period-over-period fluctuations
- Exchange rate risks with currency appreciation or depreciation
- Interest rate fluctuation
- Share price fluctuation impacting cash outflows for share based compensation payments

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Continuous monitoring of our exposure to all these financial risks
- Group-wide foreign exchange risk management strategy to hedge balance sheet items and expected cash flows in foreign currencies by using derivative financial instruments as appropriate
- Balanced maturity profile and mixture of fixed and floating interest rate arrangements to hedge against interest rate risk
- Use of derivative instruments to reduce the impact of our share-based compensation plans on our income statement and cash flow

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a low risk.

For more information about risks arising from financial instruments, including our currency and interest rate risks and our related hedging activity, see the Notes to the Consolidated Financial Statements section, [Notes \(24\)](#) and [\(25\)](#).

**Our insurance coverage might not be sufficient and uninsured losses may occur.**

We maintain insurance coverage to protect us against a broad range of risks, at levels we believe are appropriate and consistent with current industry practice. Our objective is to exclude or minimize risk of financial loss at reasonable cost.

Nevertheless, we could still be subject to risks in the following areas, among others:

- Losses that might be beyond the limits, or outside the scope, of coverage of our insurance and that may limit or prevent indemnification under our insurance policies
- Inability to maintain adequate insurance coverage on commercially reasonable terms in the future
- Certain categories of risks are currently not insurable at reasonable cost
- No assurance of the financial ability of the insurance companies to meet their claim payment obligations

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Maintaining a scope of insurance coverage that is as broad as possible
- Selection of financially stable and reputable insurers
- Constant review of our insurance programs in relation to our risk profile and breadth of insurance coverage

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a medium risk.

**We could incur significant losses in connection with venture capital investments.**

Through Sapphire Ventures (formerly SAP Ventures), our consolidated venture investment funds, we plan to continue investing in new and promising technology businesses.

This could lead to risks in the following areas, among others:

- Investments could generate net losses and require additional expenditures from their investors
- Changes to planned business operations might affect the performance of companies in which Sapphire Ventures holds investments
- Tax deductibility of capital losses and impairment in connection with equity securities are often restricted, and could therefore have an adverse effect on our effective tax rate

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

Sapphire Ventures has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Diversify the portfolio and actively manage our investments
- Balance the volume and scope of our venture capital activities

We cannot exclude the possibility that if the risk were to occur, it could have a minor impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a low risk.

## Human Capital Risks

**If we are unable to attract, develop, retain, and effectively manage our geographically dispersed workforce, we might not be able to run our business and operations efficiently and successfully, or develop successful new solutions and services.**

Our success is dependent on appropriate alignment of our planning processes for our highly skilled and specialized workforce and leaders, both male and female, adequate resource allocation, and our location strategy with our general strategy. In certain regions and specific technology and solution areas, we continue to set very high growth targets, depending on short-term and long-term skill requirements, taking infrastructure needs as well as local legal or tax regulations in consideration. Successful maintenance and expansion of our highly skilled and specialized workforce in the area of cloud is a key success factor for our transition to be the leading cloud company. The availability of such personnel as well as business experts is limited and, as a result, competition in our industry is intense.

We could face risks in the following areas, among others:

- Failure to apply workforce planning processes, adequate resource allocation, and location strategy in alignment with our general strategy
- Failure to identify, attract, develop, motivate, adequately compensate, and retain well-qualified and engaged personnel to scale to targeted markets
- Failure to successfully maintain, upskill, and expand our highly skilled and specialized workforce
- Poor succession management or failure to find adequate replacements
- Loss of key personnel of acquired business
- Failure to meet short-term and long-term workforce and skill requirements including achievements of internal gender diversity objectives
- Lack of appropriate or inadequately executed benefit and compensation programs
- Lack of availability and scalability of business experts and consultants
- Mismatch of expenses and revenue due to changes in headcount and infrastructure needs, as well as local legal or tax regulations
- Challenges with effectively managing a large distribution network of third-party companies

Any one or more of these events could reduce our ability to attract, develop, retain, and effectively manage our geographically dispersed workforce, which in turn could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible such as:

- Workforce planning (aiming to achieve diversity and the right mix of talent while considering demographic changes) and legally compliant mobility planning, utilizing the integration of our Concur travel solutions to support the challenges of a global workforce
- Career management (including, but not limited to, opportunity offerings for short-term assignments as well as skill, competencies, and qualification advancements)
- Building employee and leadership strengths through a range of targeted professional development, learning, mentoring, coaching, together with a gender diversity program to take the changes in a global workforce into consideration
- Strong focus on succession planning for leadership and key positions to ensure sustainable leadership and safeguard the business from impacts through staff turnover
- Extended benefit and long-term incentive programs, which will enable us to hire and retain talents internationally
- Utilization of outsourcing or external short-term staffing

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

## Operational Business Risks

**Sales and implementation of SAP software and services, including cloud, is subject to a number of significant risks sometimes beyond our direct control.**

A core element of our business is the successful implementation of software and service solutions to enable our customers to master complexity and help our customers' businesses run at their best. The implementation of SAP software and cloud-based service deliveries is led by SAP, by partners, by customers, or by a combination thereof.

However, we might encounter risks in the following areas, among others:

- Implementation risks, if, for example implementations take longer than planned or fail to generate the profit originally expected, scope deviations, solution complexity, individual

integration and migration needs or functional requirement changes, or insufficient milestone management and tracking leading to delays in timeline

- Insufficient customer expectation management, including scope, integration capabilities and aspects as well as lack in purposeful selection, implementation, and utilization of SAP solutions
- Lack of customer commitments and respective engagements, including lack of commitment of resources leading to delays or deviations from recommended best practices
- Challenges to effectively implement acquired technologies
- Protracted installation or significant third-party consulting costs
- Improper calculations or estimates leading to costs exceeding the fees agreed in fixed-price contracts
- Unrenderable services committed during the sales stage
- Delayed customer payments due to differing perception on project outcome/results
- Inadequate contracting and consumption models based on subscription models for services, support, and application management

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Projects include risk management processes as part of SAP's project management methods intended to safeguard implementations with coordinated risk and quality management programs
- Recommended project approaches for customers to optimize their IT solutions in a non-disruptive manner
- Adequate financial planning provisions for the remaining individual risks
- Continuous project monitoring and controlling activities
- Established escalation management process
- Ongoing development of new commercial models to address customer flexibility needs

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

**If we are unable to scale, maintain, and enhance an effective partner ecosystem, revenue might not increase as expected.**

An open and vibrant partner ecosystem is a fundamental pillar of our success and growth strategy. We have entered into partnership agreements that drive co-innovation on our platforms, profitably expand all our routes to market to optimize

market coverage, optimize cloud delivery, and provide high-quality services capacity in all market segments. Partners play a key role in driving market adoption of our entire solutions portfolio, by co-innovating on our platforms, embedding our technology, and reselling and/or implementing our software.

These partnerships could lead to risks in the following areas, among others:

- Failure to establish and enable a network of qualified partners supporting our scalability needs
- Failure to get the full commitment of our partners might reduce speed and impact in market reach
- Products or services model being less strategic and/or attractive compared to our competition
- Partners might not renew agreements with us, or not enter into new agreements on terms acceptable to us or at all, or start competing with SAP
- Failure to enable and train sufficient partner resources to promote, sell, and support to scale to targeted markets
- Partners might not develop a sufficient number of new solutions and content on our platforms or might not provide high-quality products and services to meet customer expectations
- Partners might not embed our solutions sufficiently enough to profitably drive product adoption, especially with innovations such as SAP S/4HANA and SAP Cloud Platform (formerly called SAP HANA Cloud Platform)
- Partners might not adhere to applicable legal and compliance regulations
- Partners might not meet quality requirements expected by our customers.
- Partners might not transform their business model in accordance with the transformation of SAP's business model in a timely manner
- Partners might not be able or might not have capacity to meet customer expectations in terms of service provisioning
- Partners might fail to abide to contract terms in embargoed or high-risk countries

If one or more of these risks materialize, this might have an adverse effect on the demand for our products and services as well as the partner's loyalty and ability to deliver. As a result, we might not be able to scale our business to compete successfully with other software vendors, which could have an adverse effect on our reputation, business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Invest in long-term, mutually-beneficial relationships and agreements with partners

- Continue to develop and enhance a wide range of partner programs to retain existing and attract new partners of all types
- Enable and encourage partners to leverage SAP technology, by providing guidance about business opportunities, architecture, and technology for example, through demo solutions, to enable partners to lead business value discussions on cloud and on-premise solutions with customers
- Offer training opportunities on a wide range of resources for our partners
- Maintain certification process for third-party solutions to ensure consistent high-quality and seamless integration

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

**We may not be able to properly protect and safeguard our critical information and assets, business operations, cloud offerings, and related infrastructure against disruption or poor performance.**

SAP is highly dependent on the availability of our infrastructure, and the software used in our cloud portfolio is inherently complex.

This could lead to risks in the following areas, among others:

- Capacity shortage and SAP's inability to deliver and operate cloud services in a timely and efficient way as expected by or committed to our customers
- Customer concerns about the ability to scale operations for large enterprise customers
- Defects or disruption to data center operations or system stability and availability
- Interruptions in the availability of SAP's cloud applications portfolio
- System outages or downtimes, failure of the SAP network due to human or other errors, security breaches, or variability in user traffic for cloud applications
- Hardware failures or system errors resulting in data loss, corruption, or incompleteness of the collected information
- Loss of the right to use hardware purchased or leased from third parties could result in delays in our ability to provide our cloud applications
- Scalability demands on infrastructure and operation could lead to cost increase and margin impacts
- Non-adherence to our quality standards in the context of partner co-location of data centers
- Increased Total Cost of Ownership (TCO)
- Non-compliance with applicable certification requirements, such as Payment Card Industry Data Security Standard (PCI-DSS)

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the extent possible, such as:

- Consolidation and harmonization of our data centers and our data protection measures, including implementation of security information and event management solutions as well as network access control enforcement
- Significant investment in infrastructure and processes in an effort to ensure secure operations of our cloud solutions
- Continuous enhancement of infrastructure landscape capabilities
- Increased transparency through our Cloud Trust Center, ensuring appropriate level of information, for example with regards to planned patching activities and associated downtimes
- We monitor and invest to continuously enhance our disaster recovery and business continuity capabilities
- We run a homogeneous landscape that supports the complex infrastructure, application and security requirements so that we can deliver the required service level for cloud services
- Physical access control systems at facilities, multilevel access controls, closed-circuit television surveillance, security personnel in all critical areas, and recurring social engineering tests for SAP premises and data centers
- Access to information and information systems is controlled using authorization concepts. Managers and employees are regularly sensitized to the issues and given mandatory security and compliance training
- Adaption of our cloud service delivery to local and/or specific market requirements (such as local or regional data centers) and compliance with all local legal regulations regarding data protection and privacy as well as data security
- Contracts that require third-party data centers are to have appropriate security and data protection and privacy terms in place. We establish contracts and service level agreements with our public cloud partners to ensure that data security and privacy measures meet local regulatory and compliance standards and SAP's own standards for data security and privacy
- Strict internal policies and controls concerning utilization of partner's cloud infrastructure, including people, process and technology standards required to ensure compliance
- Regular risks reviews, disclosure requests, and audits to ensure public cloud providers meet SAP's data privacy and security standards
- PCI validated compliance by successful PCI DSS audits

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate

the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

**Undetected security vulnerabilities shipped and deployed within our products and infrastructure might cause damage to SAP and our customers and partners. Our cloud operations are dependent on a high-performance cyberspace. A cybersecurity breach or economic espionage could have an adverse effect on our customers, our reputation, and our business.**

Customer systems or systems operated by SAP to provide services could potentially be compromised by vulnerabilities or cybersecurity breaches.

These kinds of occurrences could lead to risks in the following areas, among others:

- Undetected security defects and vulnerabilities
- Exposure of our business operations and service delivery by virtual attack, disruption, damage, and/or unauthorized access, theft, destruction, industrial and/or economic espionage, serious and organized crime, and other illegal activities, as well as violent extremism and terrorism
- Abuse of data, social engineering, misuse, trespassers in our facilities, or systems could be rendered unusable
- State-driven economic espionage or competitor-driven industrial espionage, and criminal activities including, but not limited to, cyberattacks and "mega breaches" against cloud services and hosted on-premise software
- Disruptions to back-up, disaster recovery, and business continuity management processes
- Customer concerns with regards to security capabilities and reliability
- Failure to securely and successfully deliver cloud services by any cloud service provider could have a negative impact on customer trust in cloud solutions.
- Increased response time for identified security issues due to complexity and interdependencies could lead to security threats for SAP and customers.
- Customer systems or systems operated by SAP could potentially be compromised by vulnerabilities due to hacker exploitation.
- Recovery costs as well as significant contractual and legal claims by customers, partners, authorities, and third-party service providers for damages

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- Software security development lifecycle as a mandatory, integral part of our software development process
- For the Applications, Technology & Services segment, we systematically align our software security development lifecycle to the recommendations of ISO/IEC 27034, applying methods to develop secure software in all development phases starting early in the design phase
- Customers are provided with security certifications (such as ISO/IEC 27001), security white papers, and reports from independent auditors and certification bodies
- Specific security training curriculums for our developers
- Industry best practices such as security risk identification, threat modeling, a comprehensive security testing strategy, mandatory security training for all developers, and security validation of our products, patches, and services before shipment
- A software security response process is in place to rapidly react to detected vulnerabilities and provide fixes
- Improved roll-out procedures for security-relevant notes, patches, and service packs to ensure easy and fast consumption on the customer side
- Continuous adaptation and modification of our security procedures
- Measures such as technical IT security measures, identity and access management, and mandatory security and compliance training
- An internal security audit group within the Corporate Audit organization to appropriately address potential security threats
- Increase awareness through campaigns and security awareness training courses and projects
- Local and regional crisis management teams to respond and minimize possible losses in case of crisis situations
- Disaster recovery and business continuity plans to protect our key IT infrastructure (especially our data centers) include implementation of data redundancies and daily data backup strategies
- Certification of IT-related organizations to the internationally recognized Business Continuity Management standard with regards to the Applications, Technology & Services segment
- Corporate headquarters, which houses certain critical business functions, is located in the German state of Baden-Württemberg, an area that is historically free of natural disasters

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

**Our technology and/or products may experience undetected defects, coding or configuration errors, may not integrate as expected, or may not meet customer expectations.**

Our product strategy and development investment, including new product launches and enhancements, are subject to risks in the following areas, among others:

- Software products and services might not fully meet market needs or customer expectations
- We might not be as fast as expected in integrating our platforms and solutions, enabling the complete product and cloud service portfolio, harmonizing our user interface design and technology, integrating acquired technologies and products, or bringing packages, services or new solutions based on the SAP HANA platform as well as SAP Cloud Platform to the market
- New products, services and cloud offerings, including third-party technologies, might not comply with local standards and requirements or could contain undetected or detected defects or could not be mature enough from the customer's point of view for business-critical solutions after shipment despite all the due diligence SAP puts into quality
- Inability to define and provide adequate solution packages and scope for all customer segments
- Inability to fulfil expectations of customers regarding time and quality in the defect resolution process
- Lack of customer references for new products and solutions

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible, such as:

- A broad range of techniques, including project management, project monitoring, product standards and governance, and rigid and regular quality assurance measures certified to ISO 9001:2008, applicable to the Applications, Technology & Services segment
- Threat modelling at the beginning of every development project to identify potential risks including but not limited to using centrally provided tools
- A holistic testing strategy to validate the state of quality and security for every product before market introduction
- Direct customer feedback is considered in the market release decision process
- Ensure high level of quality of our products, which is made transparent in the defined quality perception and support index and confirmed by our constantly high customer satisfaction ratings as measured by customer quality perception reporting
- Successfully drive the integration and convergence of our technology platform offerings, SAP S/4HANA, as well as acquired technologies

- Enable our current product portfolio for SAP HANA, develop new solutions based on SAP HANA, and offer comprehensive cloud-based services, extendable with SAP Cloud Platform
- A comprehensive certification program designed to ensure that relevant third-party solutions are of consistently high quality

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

## Strategic Risks

### **Our market share and profit could decline due to increased competition, market consolidation, technological innovation, and new business models in the software industry.**

The market for cloud computing is increasing and shows strong growth relative to the market for on-premise solutions. To maintain or improve our operating results in the cloud business, it is important that our customers renew their agreements with us when the initial contract term expires and purchase additional modules or additional capacity. Additionally, we need to bring new solutions based on the SAP HANA platform as well as SAP Cloud Platform to the market in line with demands and ahead of our competitors, in particular, innovative applications such as SAP S/4HANA or new technologies such as Internet of Things, machine learning, or blockchain.

Factoring in the aforementioned, this could lead to risks in the following areas, among others:

- Potential loss of existing on-premise customers due to competing cloud market trends
- Adverse revenue effects due to increasing cloud business and conversions from on-premise licenses to cloud subscriptions from existing SAP customers, which could have an adverse effect on related maintenance and services revenue
- Insufficient solution and service adoption together with increased complexity could lead to a loss of SAP's position as a leading cloud company and subsequently to reduced customer adoption
- Customers and partners might be reluctant or unwilling to migrate and adapt to the cloud or consider competitive cloud offerings or not extend renewals
- Existing customers might cancel or not renew their maintenance contracts, or decide not to buy additional products and services
- The market for cloud business might not develop further, or it might develop more slowly than anticipated
- Strategic alliances among competitors and/or their growth-related efficiency gains in the cloud area could lead to

- significantly increased competition in the market with regards to pricing and ability to integrate solutions
- Price pressure, cost increases, and loss of market share through traditional, new, and especially cooperating competitors

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows. SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible. For example, we:

- Share our overall long-term cloud strategy and our integration road map with our customers, and continuously implement improvements to enhance our cloud solutions
- Demonstrate the benefits of our solution and services portfolio through end-to-end integration scenarios, homogeneous and compelling user interfaces, customer references, and success stories
- Enable and support our customers in their transition path from on-premise to cloud, for example through the cloud extension policy
- Balance the distribution of our strategic investments by evolving and protecting our core businesses and simultaneously developing new solutions, technologies, and business models for markets, such as those in analytics, applications, and database and technology
- Place strong focus on providing our cloud services efficiently and to customer expectations, including service provisioning, quality, and security as well as data protection and privacy
- Drive the integration and convergence of our technology platform offerings, SAP S/4HANA, and acquired technologies
- Enable our current product portfolio for SAP HANA, develop new solutions based on SAP HANA, and offer comprehensive cloud-based services, extendable with SAP Cloud Platform
- Deliver standard software and product packages that are fast and easy to install, as well as financially attractive financing and subscription models
- Enable and encourage partners to leverage SAP technology, by providing guidance about business opportunities, architecture, and technology, as well as a comprehensive certification program designed to ensure that relevant third-party solutions are of consistently high quality

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be unlikely. We classify this risk as a medium risk.

### **We might not acquire and integrate companies effectively or successfully.**

To expand our business, we acquire businesses, products, and technologies, and we expect to continue to make acquisitions in

the future. Over time, certain of these acquisitions have increased in size and in strategic importance for SAP. Management negotiation of potential acquisitions and alliances and integration of acquired businesses, products, or technologies demands time, focus, and resources of both management and workforce, and exposes us to unpredictable operational difficulties.

Acquiring businesses, products, and technologies may present risks to SAP, including risks related to the following areas, among others:

- Incorrect assumptions during the due diligence process for the acquisition (including assumptions related to business and license models)
- Failure to successfully integrate acquired technologies or solutions into SAP's solution portfolio and strategy
- Failure to successfully integrate acquired operations, cultures, or languages, all within the constraints of applicable local laws
- Unfulfilled needs of the acquired company's customers and partners
- Material unidentified liabilities of acquired companies (legal, tax, accounting, IP)
- Failure in implementing, restoring, or maintaining internal controls, procedures, and policies within acquired companies
- Incompatible practices or policies (compliance requirements)
- Insufficient integration of the acquired company's accounting, HR, and other administrative systems
- Failure to coordinate the acquired company's research and development (R&D), sales, and marketing activities
- Debt incurrence or significant unexpected cash expenditures
- Non-compliance with existing SAP standards
- Impairment of goodwill and other intangible assets acquired in business combinations

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate risks and adverse effects associated with acquisitions to the greatest extent possible, such as:

- Technical, operational, financial, and legal due diligence on the company or assets to be acquired
- A holistic evaluation of material transaction and integration risks
- A standardized methodology for detailed integration planning which is carried out by a dedicated integration team

We cannot exclude the possibility that if the risk were to occur, it could have a major impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this decreased risk as a low risk.

**We might not be able to compete effectively if we strategize our solution portfolio ineffectively or if we are unable to keep up with rapid technological and product innovations, enhancements, new business models, and changing market expectations.**

Our future success depends upon our ability to keep pace with technological and process innovations and new business models, as well as on our ability to develop new products and services, enhance and expand our existing products and services portfolio, and integrate products and services we obtain through acquisitions. To be successful, we are required to adapt our products and our go-to-market approach to a cloud-based delivery and consumption model to satisfy changing customer demand and to ensure an appropriate level of adoption, customer satisfaction, and retention.

Considering preceding dependencies, this could lead to risks in the following areas, among others:

- Not being able to bring new business models, solutions, solution enhancements, integrations and interfaces, and/or services to market before our competitors or at equally favorable conditions
- Not being able to anticipate and develop technological improvements or succeed in adapting SAP products, services, processes, and business models to technological change, changing regulatory requirements, emerging industry standards, and changing requirements of our customers and partners (especially with innovations such as SAP S/4HANA and SAP Cloud Platform)
- Uncertainties regarding new SAP solutions, technologies, and business models as well as delivery and consumption models might lead customers to wait for proofs of concept or holistic integration scenarios through reference customers or more mature versions first
- Lower level of adoption of our new solutions, technologies, business models, and flexible consumption models, or no adoption at all
- New applications and services might not meet customer expectations
- Our product and technology strategy might not be successful, or our customers and partners might not adopt our technology platforms, applications, or cloud services quickly enough or they might consider other competitive solutions in the market, or our strategy might not match customers' expectations, specifically in the context of expanding the product portfolio into additional markets
- Delayed or unsuccessful market launches by us, new market entries, or introduction of new innovations by competitors.
- Increasing competition from open source software initiatives, or comparable models in which competitors might provide software and intellectual property free and/or at terms and conditions unfavorable for SAP



- Inability to drive growth of references through customer use cases and demo systems

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

SAP has established measures to address and mitigate the described risks and adverse effects to the greatest extent possible. For example, we:

- Align our organization, processes, products, delivery and consumption models, and services to changing markets and customer and partner demands
- Develop new technology and new solutions such as the next-generation suite SAP S/4HANA or the next-generation business warehouse SAP BW/4HANA
- Explore future trends as well as the latest technologies, for example through our network of innovation centers under the leadership of our Chief Innovation Officer, and adapt these to the market if there is a clear business opportunity for SAP and if they provide value to our customers
- Conduct wide-ranging market and technology analyses and research projects, often in close cooperation with our customers and partners to remain competitive
- Make strategic acquisitions with the potential to drive innovation and contribute to achieving our growth target

We cannot exclude the possibility that if the risk were to occur, it could have a business-critical impact on our operations, financial position, profit, and cash flows. However, we estimate the probability of occurrence of this risk to be remote. We classify this risk as a medium risk.

## Consolidated Risk Profile

Following SAP's overall strategy towards the cloud powered by SAP HANA, we have revised the structure of our risk report to better reflect the risks of our adapted risk profile.

We consolidate and aggregate relevant risks identified by the different business units and functions following our risk management policy, monitored by a Group-wide risk management governance function.

Based on our aggregation approach, we recognized only minor changes in 2017 in the percentages of all reported risks categorized as "high" or "medium" in our risk level matrix. The number of risks categorized as "high" accounted for 17% (2016: 11%) of all reported risks, while the risks categorized as "medium" accounted for 52% (2016: 67%) of all risks reported in the *Risk Factors* section.

In our view, considering their impact level and likelihood of occurrence, the risks described in our aggregated risk report do not individually or cumulatively threaten our ability to continue as a going concern. Management remains confident that the Group's earnings strength forms a solid basis for our future

business development and provides the necessary resource to pursue the opportunities available to the Group. Because of our strong position in the market, our technological leadership, our highly-motivated employees, and our structured processes for early risk identification, we are confident that we can continue to successfully counter the challenges arising from the risks in our risk profile in 2018.

# Expected Developments and Opportunities

## Future Trends in the Global Economy

In 2018, economic activity will remain broadly stable at the global level, but developments across countries and regions could vary notably. That is what the European Central Bank (ECB) projects in its December 2017 Economic Bulletin.<sup>1</sup> The ECB largely expects the growth potential to stabilize at below pre-crisis levels this year. Specifically, the outlook among advanced economies might entail robust expansion, which will most likely slow down gradually as the upturn matures. On the other side, the ECB awaits increased dynamism in emerging market economies, supported by strengthening activity in commodity exporters.

Regarding the Europe, Middle East, and Africa (EMEA) region, the ECB concludes that the euro area economic expansion in 2018 will continue to be solid and broad-based across countries and sectors. This will, on the one side, be due to private expenditure and consumption growth, supported by lower deleveraging needs and improved labor market conditions, says the ECB. On the other side, it attributes its projections to improvements in corporate profitability and the favorable financing conditions, while euro area exporters could benefit from the ongoing global economic expansion. In central and eastern European countries, the ECB expects economic activity to accelerate in the near term, driven by a rebound in investment and strong private consumption, on the back of improving labor markets and higher absorption of EU funds. Russia, according to the ECB, may lose some of its only recently recovered dynamism in the short term, but growth is expected to resume afterwards, supported by higher oil prices, a stronger ruble, and declining inflation.

As to the North America and Latin America (Americas) region, the ECB anticipates a robust expansion in the United States, which will slow down over the next few years as the recovery matures and output gaps gradually close. U.S. activity will benefit primarily from solid domestic demand with growth in investment and consumption, as tight labor market conditions gradually feed into higher wage growth and favorable financial conditions boost wealth, says the ECB. Moreover, the strengthening of external demand and the recent depreciation of the U.S. dollar might support the U.S. outlook. As to Brazil, the ECB projects that although recurring political uncertainties will continuously weigh on business investment and consumer

spending, loosening financial conditions alongside increasing monetary accommodation and improving terms of trade will support the Brazilian economy over the medium term.

In the Asia Pacific Japan (APJ) region, the ECB expects economic activity in Japan in 2018 to be supported by firming foreign demand, private investment gains associated with high profits and increasing labor and capacity shortages, and favorable financing conditions. However, according to the ECB, Japan will face another slow down already after 2018. The ECB's near-term outlook for solid development in China is dominated by the authorities' focus on stable growth, given the ongoing political transition. However, the ECB's assumption over the medium term is that continued structural reforms in China will gradually be implemented, leading to an orderly slowdown of economic growth. Finally, as to the ECB, growth in India will also remain solid in 2018.

### Economic Trends – Year-Over-Year GDP Growth

%	2016	2017p	2018p
<b>World</b>	<b>3.2</b>	<b>3.6</b>	<b>3.7</b>
Advanced economies	1.7	2.2	2.0
Developing and emerging economies	4.3	4.6	4.9
<b>Europe, Middle East, and Africa (EMEA)</b>			
Euro area	1.8	2.1	1.9
Germany	1.9	2.0	1.8
Emerging and Developing Europe	3.1	4.5	3.5
Middle East, North Africa, Afghanistan, and Pakistan	5.0	2.6	3.5
Sub-Saharan Africa	1.4	2.6	3.4
<b>Americas</b>			
United States	1.5	2.2	2.3
Canada	1.5	3.0	2.1
Latin America and the Caribbean	-0.9	1.2	1.9
<b>Asia Pacific Japan (APJ)</b>			
Japan	1.0	1.5	0.7
Emerging and Developing Asia	6.4	6.5	6.5
China	6.7	6.8	6.5

p = projection

Source: International Monetary Fund (IMF), World Economic Outlook October 2017, Seeking Sustainable Growth, Short-Term Recovery, Long-Term Challenges (<http://www.imf.org/~/media/Files/Publications/WEO/2017/October/pdf/main-chapter/text.ashx?la=en>), p. 32.)

## The IT Market: Outlook for 2018 and Beyond

In 2018, digital transformation will still be the top driver of IT spending and will remain so for the coming years,<sup>4</sup> says IDC (International Data Corporation), a U.S.-based market research firm. IDC predicts worldwide spending on digital transformation technologies to expand at a compound annual growth rate of 17.9% through 2021 to more than \$2.1 trillion<sup>5</sup> (\$1.7 trillion in 2019).<sup>6</sup> According to IDC, virtually all digital transformation initiatives will be dependent on the cloud services delivery model for scale, access to key technologies, and access to digital supply networks and distribution networks.<sup>4</sup>

Therefore, IDC expects still growing percentages of IT operations budgets to go to public cloud in the coming years,<sup>5</sup> assuming that cloud services spending will continue to grow at double-digit rates for the next few years.<sup>3</sup> Most likely for IDC, the most notable growth area at a compound annual growth rate of 27.3% through 2021 will be managed public cloud services offerings.<sup>4</sup> But even the entire software and services markets will grow significantly, forecasts IDC, with \$357.9 billion being invested in software in 2018 and \$430.0 billion in 2019, while services will be at \$601.7 billion in 2018 and \$703.2 billion in 2019.<sup>2</sup>

IDC expects the pace of IT innovation launches on public clouds to continue or even accelerate the migrations of applications and data from enterprise datacenters to shared/public cloud datacenters.<sup>4</sup> This will be driven by new tooling and investments to manage and monitor public cloud-based resources and by the learning curve of getting familiar with new operational workflows,<sup>5</sup> says IDC. It will most likely in the long term have a positive overall impact on industry growth as more users adopt more advanced computing solutions at a faster rate.<sup>3</sup>

By 2019, IDC expects that approximately \$0.4 trillion will be invested in technologies like the cloud and Big Data while \$1.3 trillion could be invested in innovation accelerators like the Internet of Things (IoT), next-generation security, and machine learning.<sup>2</sup> They all, according to IDC, then combine to continually sense and collectively learn from the data environment of the enterprise.<sup>2</sup> Many future commerce business models even necessarily require technologies such as the IoT, Big Data and analytics, security, enterprise mobility, cloud, and artificial intelligence,<sup>2</sup> says IDC, and predicts that, for example, by 2020, 25% of global transaction banks, nearly 30% of manufacturers and retailers, and 20% of healthcare organizations will use blockchain networks in production,<sup>6</sup> calling this development the "blockchain-fueled rise of digital trust."<sup>6</sup>

However, according to IDC, cognitive computing, artificial intelligence, and machine learning will soon become the fastest-growing segments of software development.<sup>6</sup> 40% of digital transformation initiatives could use artificial intelligence

services by 2019 and 75% of commercial enterprise apps by 2021.<sup>6</sup> This means a compound annual growth rate of 54.4% through 2020 for cognitive and artificial intelligence solutions with a total revenue of more than \$46 billion by then,<sup>5</sup> says IDC.

Sources:

<sup>1</sup> European Central Bank, Economic Bulletin, Issue 8/2017, Publication Date: December 28, 2017 (<http://www.ecb.europa.eu/pub/pdf/ebu/eb201708.en.pdf>)

<sup>2</sup> IDC FutureScape: Worldwide Digital Transformation 2018 Predictions, Doc #US43154617, October 2017

<sup>3</sup> IDC Market Forecast: Software License, Maintenance & Subscription Forecast, 2017-2021, Doc #US42825517, July 2017

<sup>4</sup> IDC Worldwide Whole Cloud Forecast, 2017-2021, Doc #US43215817, December 2017

<sup>5</sup> IDC FutureScape: Worldwide Cloud 2018 Predictions, Doc # US42014717, October 2017

<sup>6</sup> IDC FutureScape: Worldwide IT Industry 2018 Predictions, #US43171317, October 2017

As to regional rates of growth, Gartner, another U.S.-based IT market research firm, projects the following accelerations in IT spending for the mid-term horizon until end of 2018:

### Trends in the IT Market – Accelerated IT Spending Year Over Year

Growth in % at constant currencies	2016e	2017p	2018p
<b>World</b>			
Total IT	2.0	3.4	3.2
Software	6.5	8.6	8.3
Services	4.1	4.3	4.4
<b>Europe, the Middle East, and Africa (EMEA)</b>			
Total IT	1.7	2.2	2.1
Software	6.3	8.1	7.9
Services	2.8	3.3	3.7
<b>Americas</b>			
Total IT	2.0	3.6	2.9
Software	6.9	8.5	8.2
Services	5.5	5.2	5.1
<b>Asia-Pacific-Japan (APJ)</b>			
Total IT	2.3	4.5	4.7
Software	5.8	9.6	9.8
Services	3.0	3.7	3.7

e = estimate, p = projection

Table created by SAP based on: Gartner Market Databook, 4Q17 Update, December 28, 2017, Table 2-1 "Regional End-User Spending on IT Products and Services in Constant U.S. Dollars, 2015-2021 (Millions of Dollars)".

The Gartner Reports described herein, (the "Gartner Reports") represent research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, Inc. ("Gartner"), and are not representations of fact. Each Gartner Report speaks as of its original publication date (and not as of the date of this Annual Report) and the opinions expressed in the Gartner Reports are subject to change without notice.

## Impact on SAP

Our 2017 results again showed that our strategy of innovation and growth is the right way forward. SAP once again showed impressive resilience and global breadth to successfully navigate the evolving economic and political environment. We will continue to invest in strategic growth areas such as the cloud, the IoT, artificial intelligence, and blockchain, which are

expected to become significant investment priorities of our customers in the upcoming years.

SAP is positioned at the business core processes of a large number of global corporations. The growing hyperconnectivity with the physical world, the capabilities of supercomputing architectures as well as the continuous adoption of cloud solutions makes us confident to significantly benefit from the mega trends predicted by industry analysts.

## Operational Targets for 2018 (Non-IFRS)

### Revenue and Operating Profit Outlook

The Company is providing the following 2018 outlook:

- Based on the continued strong momentum in SAP's cloud business, the Company expects full-year 2018 non-IFRS cloud subscriptions and support revenue to be in a range of €4.8 billion to €5.0 billion at constant currencies (2017: €3.77 billion). This range represents a growth rate of 27% to 33% at constant currencies.
- The Company expects full-year 2018 non-IFRS cloud and software revenue to be in a range of €20.7 billion to €21.1 billion (2017: €19.55 billion). This range represents a growth rate of 6% to 8% at constant currencies.
- The Company expects full-year 2018 non-IFRS total revenue to be in a range of €24.6 billion to €25.1 billion at constant currencies (2017: €23.46 billion). This range represents a growth rate of 5% to 7% at constant currencies.
- The Company expects full-year 2018 non-IFRS operating profit to be in a range of €7.3 billion to €7.5 billion at constant currencies (2017: €6.77 billion). This range represents a growth rate of 8% to 11% at constant currencies.

We expect that non-IFRS total revenue will continue to depend largely on the revenue from both cloud and software. However, we expect cloud revenue to overtake software license revenue in 2018 and beyond. As of Q2 2018, we expect an increase in operating margin again.

In 2018, we expect our headcount to increase at a similar pace as in 2017.

While the Company's full-year 2018 business outlook is at constant currencies, actual-currency reported figures are expected to be impacted by currency exchange rate fluctuations as we progress through the year. If exchange rates remain at the early January level for the rest of the year, we expect non-IFRS cloud and software revenue to experience a currency headwind in a range of –7pp to –9pp in Q1 2018 and –3pp to –5pp for the full year 2018, and non-IFRS operating profit to experience a

currency headwind in a range of –6pp to –8pp in Q1 2018 and –4pp to –6pp for the full year 2018.

We continuously strive for profit expansion in both of our reportable segments.

The following table shows the estimates of the items that represent the differences between our non-IFRS financial measures and our IFRS financial measures.

#### Non-IFRS Measures

€ millions	Estimated Amounts for 2018	Actual Amounts for 2017
Revenue adjustments	<20	3
Share-based payment expenses	800 to 1,100	1,120
Acquisition-related charges	500 to 540	587
Restructuring	30 to 50	182

The Company expects a full-year 2018 effective tax rate (IFRS and non-IFRS) of 27.0% to 28.0% (2017: 19.3% (IFRS) and 22.6% (non-IFRS)).

### Impact of the New Accounting Standard IFRS 15 'Revenue from Contracts with Customers'

As of January 1, 2018, SAP changed several of its accounting policies to adopt IFRS 15 'Revenue from Contracts with Customers'. Under the IFRS 15 adoption method chosen by SAP, prior years are not restated to conform to the new policies. Consequently, the year-over-year growth of revenue and profit in 2018 will be impacted by the new policies.

The Company expects the impact of the policy change on revenue, operating expenses, and profit to be as follows:

- Revenues are expected to experience a benefit of substantially less than €0.1 billion, with most of the difference resulting from exercises of customer software purchase options granted in prior years that result in software revenue.
- Operating expenses are expected to benefit, in cost of sales and marketing, in the amount of approximately €0.2 billion from higher capitalization of sales commissions. Other policy changes will weigh on operating expenses with an additional cost of revenue of substantially less than €0.1 billion.
- The abovementioned effects will result in a net positive impact on operating profit of approximately €0.2 billion.

For more information about the adoption of IFRS 15, see the Notes to the Consolidated Financial Statements, [Note \(3e\)](#).

## Goals for Liquidity and Finance

On December 31, 2017, we had a negative net liquidity. We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs also in 2018 and, together with expected cash flows from operations, will support debt repayments and our currently planned capital expenditure requirements over the near and medium term.

In 2018, we anticipate operating cash flow to reach around €5.0 billion.

We intend to repay US\$150 million in U.S. private placements in June 2018 as well as €400 million and €750 million in Eurobonds in August and November 2018, respectively.

## Investment Goals

Our planned capital expenditures for 2018 and 2019, other than from business combinations, consist primarily of the construction activities described in the *Assets (IFRS)* section of this report. We expect investments from these activities of approximately €473 million in 2018 (an increase of approximately 45% compared to the previous year). The expansion of our data centers is an important aspect of our planned investments again for 2018. In addition, we aim to extend our office space to cover currently anticipated future growth. In 2019, we expect investments of approximately €400 million.

On January 30, 2018, SAP announced that SAP America, Inc. has entered into an agreement to acquire Callidus Software Inc. SAP safeguards funding of the transaction with existing cash balances and an acquisition term loan and intends to refinance substantial portions of the purchase price with capital market transactions. The transaction is expected to close in the second quarter of 2018, subject to approval from Callidus Software Inc. stockholders, clearances by the relevant regulatory authorities, and other customary closing conditions. For more information about the acquisition of Callidus Software Inc., see the Notes to the Consolidated Financial Statements section, *Note (33)*.

Other than that we do not expect major acquisitions in 2018 and 2019 but will rather focus on organic growth, complemented by minor tuck-in acquisitions.

## Proposed Dividend

In 2018, we intend to pay a dividend totaling more than 40% of the prior year's profit after tax, subject to shareholder approval at the Annual General Shareholders meeting in May 2018. For further information, see the *Financial Performance: Review and Analysis* section of this report.

## Premises on Which Our Outlook Is Based

In preparing our outlook, we have taken into account all events known to us at the time we prepared this report that could influence SAP's business going forward. However, our outlook as well as the estimates for our non-IFRS adjustments do not include any contributions from the acquisition of CallidusCloud. SAP will provide an update on its outlook subsequent to the closing of the contemplated acquisition.

## Outlook for SAP SE

The primary source of revenue for SAP SE is the license fees it charges subsidiaries for the right to market and maintain SAP software solutions. Consequently, the performance of SAP SE in operating terms is closely tied to the cloud and software revenue of the SAP Group.

We expect product revenue for SAP SE to increase at constant currencies generally in line with the 6% to 8% constant-currency rise in non-IFRS cloud and software revenue anticipated for the SAP Group in 2018.

Assuming there are no special effects relating to acquisitions or internal corporate restructuring measures in 2018, we also expect the operating profit of SAP SE to increase slightly.

Provided the SAP Group continues to hit its revenue and profit targets, we expect SAP SE to sustain revenue and operating income growth into the medium term.

We believe SAP SE, the parent company of the SAP Group, will receive investment income in the form of profit transfers and dividends again in the future. The growth we expect from the SAP Group should have a positive effect on SAP SE investment income.

The outlook projections for the SAP Group in respect of liquidity, finance, investment, and dividend are equally applicable to SAP SE.

Among the assumptions underlying this outlook are those presented above concerning the economy and our expectations for the performance of the SAP Group.

## Medium-Term Prospects

In this section, all numbers are based exclusively on non-IFRS measures.

We expect to grow our more predictable revenue while steadily increasing operating profit. Our strategic objectives are focused primarily on our main financial and non-financial objectives: growth, profitability, customer loyalty, and employee engagement.

We reiterate our 2020 ambition for cloud subscription and support revenue, total revenue, operating profit, and more predictable revenue share last provided at the beginning of 2017. This ambition reflects SAP's consistent fast growth in the cloud, solid software momentum, and operating profit expansion. Despite the currency headwinds in 2017 SAP continues to strive to reach the following in 2020:

- €8.0 billion to €8.5 billion in Non-IFRS cloud subscriptions and support revenue (2017: €3.77 billion)
- €28 billion to €29 billion in Non-IFRS total revenue (2017: €23.46 billion)
- €8.5 billion to €9.0 billion in Non-IFRS operating profit (2017: €6.77 billion)

We continue to expect the share of more predictable revenue (defined as the total of Non-IFRS cloud subscriptions and support revenue and Non-IFRS software support revenue) to reach 70% to 75% in 2020 (2017: 63%).

By 2020, we expect our public cloud offerings to contribute approximately half of Non-IFRS cloud subscription and support revenue, closely followed by our business network offerings. Both of these offerings are expected to each generate, in 2020, cloud subscriptions and support revenues that are significantly higher than the cloud subscriptions and support revenue generated from our private cloud offerings.

Our revenue growth trajectory through 2020 is expected to be driven by continued strong growth in the cloud and continued growth in our software support revenue. We continue to expect low to mid-single-digit declines in software revenue. This is all expected to result in high single-digit growth in cloud and software revenue through 2020.

We also strive to significantly improve, over the next few years, the profitability of our cloud business. Starting in 2018, we expect to see the benefits from previous efficiency-based investments, and thus an increasing cloud gross margin. We expect these profitability improvements to accelerate in the following years.

We expect that the individual gross margins of our different cloud operating models will increase at different rates over the next years to reach the following mid-term targets.

Previously, we expected our business network gross margin to reach 80% by 2020 (2017: 77%). We now expect that, in 2020, this gross margin will be higher than 80%.

We continue to expect the gross margin from our public cloud offerings to reach approximately 80% (2017: 57%), but this is now expected to take one to two years longer than 2020 as previously targeted.

We continue to expect the gross margin for our private cloud offerings to reach about 40% by 2020 (2017: 6%).

The changes in our gross margin ambitions for the individual cloud operating models also impact our ambition for the overall cloud gross margin. Previously, we expected the cloud gross margin to reach approximately 73% in 2020. The cloud gross margin is now expected to be approximately 71% by 2020. This change primarily results from our revised public cloud gross margin ambition as outlined above. However, this is expected to be partially outweighed by revenue mix-shift effects, as our private cloud offerings are now expected to have a lower share of our overall cloud subscriptions and support revenue.

We also aim at further improving the profitability of our on-premise software business. The gross margin for our software licenses and support is expected to be at approximately 87.5% by 2020 (2017: 87.0%) in 2020.

In addition, we expect our services gross margin to remain stable (2017: 23.5%) in 2020. The change in this target compared to our previously communicated target of 20% is driven by the continued efficiency gains from our SAP ONE Service initiative.

As we look to increase our profitability through 2020, our cost ratios (cost as a % of total revenue) are expected to develop as follows through 2020: Research and development is expected to remain at the current level. Sales and marketing as well as General and administration are expected to decline slightly.

## Non-Financial Goals 2018 and Ambitions for 2020

In addition to our financial goals, we also focus on two non-financial targets: customer loyalty and employee engagement.

For 2018 through to 2020, we aim to reach an Employee Engagement Index of between 84% and 86% (2017: 85%).

We measure customer loyalty using the Customer Net Promoter Score (NPS). In 2018, we foresee a combined Customer NPS of 21% to 23%, with our medium-term goal of reaching a combined Customer NPS of 35% to 40% by 2020 (2017: 17.8%).

## Opportunities

Our customers rely on SAP as the trusted partner in their digital business transformation, not only for providing in-memory technology, standardized on-premise and cloud solutions, and access to business networks, but also for helping them drive new business outcomes and enabling business model innovations. To meet these expectations, we must grow consistently and accelerate the pace of our own business transformation by exploiting new opportunities.

We have established a framework for opportunity management by evaluating and analyzing four key areas: current markets, competitive landscapes, external scenarios, and technological

trends. Additionally, we have delved into customer and product segmentation, growth drivers, and industry-specific success factors. Based on these combined insights, our Executive Board defines our market strategies. Our shareholder value relies heavily upon a fine balance of risk mitigation and value-driven opportunities. Therefore, our strong governance model ensures that decisions are based on return, investment required, and risk mitigation. We rely on the talent and resources within SAP and our entire ecosystem.

As far as opportunities are likely to occur, we have incorporated them into our business plans, our outlook for 2018, and our medium-term prospects outlined in this report. Therefore, the following section focuses on future trends or events that might result in an uplift of our outlook and medium-term prospects, if they develop better than we have anticipated in our forecasts.

SAP SE is the parent company of the SAP Group and earns most of its revenue from software license fees, subscriptions fees, and dividends paid by affiliates. Consequently, the opportunities described below also apply – directly or indirectly – to SAP SE.

## Opportunities from Economic Conditions

Economic conditions have a clear influence on our business, financial position, profit, and cash flows. Should the global economy experience a more sustained growth than is reflected in our plans today, our revenue and profit may exceed our current outlook and medium-term prospects.

Our midterm planning is based on unchanged market conditions in emerging markets. Should their stability increase again, this would be an upside to our midterm planning.

For more information about future trends in the global economy and the IT market outlook, as well as their potential influence on SAP, see the [Expected Developments and Opportunities](#) section.

## Opportunities from Research and Development Traction

Our continued growth through innovation is based on our ability to leverage research and development (R&D) resources effectively. We continue to improve our development processes through design thinking and lean methodologies. We are accelerating innovation cycles, especially in the area of cloud solutions, and engaging more closely with our customers to ensure accuracy and success. In addition, we have generated a new structure that enables innovations in a startup-like environment and ecosystem.

While speed is a key strength, we also focus on ease of adoption and providing compelling returns. This allows our customers to easily consume technologies and software applications with

immediate benefits for their businesses. If we make innovations available faster than currently anticipated, or if customers adopt the innovations faster than currently expected, for example, by shifting faster to managed clouds for enterprise resource planning, or by shifting faster to our new SAP S/4HANA solutions, whether cloud or on premise, this could positively impact our revenue, profit, and cash flows, and result in their exceeding our stated outlook and medium-term prospects.

For more information about future opportunities in research and development for SAP, see the [Products, Research & Development, and Services](#) section as well as the [Expected Developments and Opportunities](#) section.

## Opportunities from Our Strategy for Profitable Growth

SAP strives to generate profitable growth across its portfolio of products, solutions, and services to keep or improve its market position. Our aim is to continue to expand our addressable market to €320 billion in 2020, based on new assets in our SAP Business Network Segment, our new technologies and innovations, and the extension of our cloud portfolio.

We see opportunities in growing product and market areas, such as in-memory computing, cloud, mobile, business networks, social media, Big Data, the Internet of Things, machine learning, artificial intelligence, predictive analytics, and especially all business developments that are targeted at the digital business transformation, which is key to our strategy. In addition to organic developments and tuck-in acquisitions, large strategic acquisitions in particular may boost our revenue and profits significantly. Furthermore, SAP seeks to establish new business models and leverage its expanding ecosystem of partners to achieve scale and maximize opportunities.

Our strong assets in applications and analytics, as well as database and technology, continue to offer solid multiyear growth opportunities as we bring innovative technologies with simplified consumption to our installed base and continue to add net-new customers. Unexpected portfolio growth may positively impact our revenue, profit, and cash flows, and result in their exceeding our stated outlook and medium-term prospects. Specifically, SAP HANA, cloud offerings, and SAP S/4HANA solutions could create even more demand than is reflected in our stated outlook and medium-term prospects. New opportunities are generated by SAP Leonardo, SAP's platform to drive digital innovation. It is a comprehensive offering driving innovation based on digital business services, technical services, and a broad portfolio of applications focused on the Internet of Things for the extended supply chain.

Further upside potential is possible by higher-than-expected renewal rates of our cloud solutions.

For more information about future opportunities for SAP, see the [Strategy and Business Model](#) section as well as the [Expected Developments and Opportunities](#) section.

## Opportunities from Our Partner Ecosystem

SAP continues to grow and develop a global partner ecosystem. To increase market coverage, we want to enhance our portfolio and spur innovation with the specified objective of increasing the partner revenue contribution to SAP's overall revenue target. In addition to strengthening our core, we leverage our entire ecosystem to drive adoption of SAP HANA, cloud solutions, SAP S/4HANA, and SAP Cloud Platform (formerly called SAP HANA Cloud Platform). This includes strategic partnerships across all areas: third-party software vendors, systems integrators, service providers, and infrastructure providers. As a result, we are creating an ever-stronger setup in which SAP, customers, and partners co-innovate and develop new innovative solutions on and with SAP HANA. In 2017, SAP announced new strategic partnerships to co-innovate, which open new opportunities (for more information, see the [Customers](#) section). Should the business of our partners develop better than currently expected, our indirect sales (partner revenue) could grow stronger than reflected in our outlook and medium-term prospects. This may positively impact our revenue, profit, and cash flows, and result in their exceeding our stated medium-term prospects.

## Opportunities from Our Employees

Our employees drive our innovation, provide the value to our customers, and consistently promote our growth and profitability. In 2017, we continued to increase the number of full-time employees in key strategic areas to support our growth ambitions. We anticipate improvements in employee productivity as a result of our continued endeavors in design-thinking principles. As described in the [Employees and Social Investments](#) section, we continuously invest in our talents to sustain their high level of engagement, collaboration, social innovation, and health.

Our outlook and medium-term prospects are based on certain assumptions regarding employee turnover and our Business Health Culture Index (as defined in the [Employees and Social Investments](#) section). Should these develop better than expected, there might be a gain in employee productivity and engagement. A stronger than expected increase in the employee engagement index can therefore be seen as an opportunity which could positively impact our revenue, profit, and cash flows, and result in their exceeding our stated medium-term prospects.

For more information about future opportunities from our employees, see the [Employees and Social Investments](#) section.

## Opportunities from Our Customer Engagement

SAP goes to market by region, customer segments, line of business, and industry. We evolve and invest in our go-to-market coverage model to effectively sell industry-specific solutions while increasing our engagement with customers. We focus on the dynamic and fast-changing landscape each industry faces as technology evolves.

We offer unique services that support a significant return on investment, and continue to actively look at new opportunities to increase the value we deliver to our customers.

In general, our outlook and medium-term prospects are based on certain assumptions regarding the success of our go-to-market approaches. If the actual go-to-market success exceeds these assumptions, this could positively impact our revenue, profit, and cash flows, and result in their exceeding our stated medium-term prospects.



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# Consolidated Financial Statements IFRS

## Consolidated Income Statements of SAP Group for the Years Ended December 31

€ millions, unless otherwise stated	Notes	2017	2016	2015
Cloud subscriptions and support		3,769	2,993	2,286
Software licenses		4,872	4,860	4,835
Software support		10,908	10,571	10,093
Software licenses and support		15,780	15,431	14,928
<b>Cloud and software</b>		<b>19,549</b>	<b>18,424</b>	<b>17,214</b>
<b>Services</b>		<b>3,911</b>	<b>3,638</b>	<b>3,579</b>
<b>Total revenue</b>	(5)	<b>23,461</b>	<b>22,062</b>	<b>20,793</b>
Cost of cloud subscriptions and support		-1,660	-1,313	-1,022
Cost of software licenses and support		-2,234	-2,182	-2,291
Cost of cloud and software		-3,893	-3,495	-3,313
Cost of services		-3,158	-3,089	-2,932
<b>Total cost of revenue</b>		<b>-7,051</b>	<b>-6,583</b>	<b>-6,245</b>
<b>Gross profit</b>		<b>16,410</b>	<b>15,479</b>	<b>14,548</b>
Research and development		-3,352	-3,044	-2,845
Sales and marketing		-6,924	-6,265	-5,782
General and administration		-1,075	-1,005	-1,048
Restructuring	(6)	-182	-28	-621
Other operating income/expense, net		1	-3	1
<b>Total operating expenses</b>		<b>-18,584</b>	<b>-16,928</b>	<b>-16,541</b>
<b>Operating profit</b>		<b>4,877</b>	<b>5,135</b>	<b>4,252</b>
<b>Other non-operating income/expense, net</b>	(8)	<b>-36</b>	<b>-234</b>	<b>-256</b>
Finance income		463	230	241
Finance costs		-278	-268	-246
<b>Financial income, net</b>	(9)	<b>185</b>	<b>-38</b>	<b>-5</b>
<b>Profit before tax</b>		<b>5,026</b>	<b>4,863</b>	<b>3,991</b>
Income tax expense	(10)	-970	-1,229	-935
<b>Profit after tax</b>		<b>4,056</b>	<b>3,634</b>	<b>3,056</b>
Attributable to owners of parent		4,018	3,646	3,064
Attributable to non-controlling interests		38	-13	-8
<b>Earnings per share, basic (in €)</b>	(11)	<b>3.36</b>	<b>3.04</b>	<b>2.56</b>
<b>Earnings per share, diluted (in €)</b>	(11)	<b>3.35</b>	<b>3.04</b>	<b>2.56</b>

The accompanying Notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Comprehensive Income of SAP Group for the Years Ended December 31

€ millions	Notes	2017	2016	2015
<b>Profit after tax</b>		<b>4,056</b>	<b>3,634</b>	<b>3,056</b>
Items that will not be reclassified to profit or loss				
Remeasurements on defined benefit pension plans, before tax		29	-10	-19
Income taxes relating to remeasurements on defined benefit pension plans	(10)	-7	2	2
Remeasurements on defined benefit pension plans, net of tax		22	-8	-17
<b>Other comprehensive income for items that will not be reclassified to profit or loss, net of tax</b>		<b>22</b>	<b>-8</b>	<b>-17</b>
Items that will be reclassified subsequently to profit or loss				
Gains (losses) on exchange differences on translation, before tax		-2,730	865	1,845
Reclassification adjustments on exchange differences on translation, before tax		0	-1	0
Exchange differences, before tax		-2,730	864	1,845
Income taxes relating to exchange differences on translation	(10)	-2	-25	16
Exchange differences, net of tax	(20)	-2,732	839	1,861
Gains (losses) on remeasuring available-for-sale financial assets, before tax		114	-18	181
Reclassification adjustments on available-for-sale financial assets, before tax		-250	-26	-53
Available-for-sale financial assets, before tax	(26)	-136	-44	128
Income taxes relating to available-for-sale financial assets	(10)	1	1	-2
Available-for-sale financial assets, net of tax	(20)	-135	-43	125
Gains (losses) on cash flow hedges, before tax		81	-24	-59
Reclassification adjustments on cash flow hedges, before tax		-41	8	74
Cash flow hedges, before tax	(25)	39	-15	15
Income taxes relating to cash flow hedges	(10)	-10	4	-4
Cash flow hedges, net of tax	(20)	29	-11	11
<b>Other comprehensive income for items that will be reclassified to profit or loss, net of tax</b>		<b>-2,838</b>	<b>785</b>	<b>1,997</b>
<b>Other comprehensive income, net of tax</b>		<b>-2,816</b>	<b>777</b>	<b>1,980</b>
<b>Total comprehensive income</b>		<b>1,240</b>	<b>4,410</b>	<b>5,036</b>
Attributable to owners of parent		1,202	4,423	5,044
Attributable to non-controlling interests		38	-13	-8

The accompanying Notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Financial Position of SAP Group as at December 31

€ millions	Notes	2017	2016
Cash and cash equivalents		4,011	3,702
Other financial assets	(12)	990	1,124
Trade and other receivables	(13)	5,899	5,924
Other non-financial assets	(14)	725	581
Tax assets		306	233
<b>Total current assets</b>		<b>11,930</b>	<b>11,564</b>
Goodwill	(15)	21,274	23,311
Intangible assets	(15)	2,967	3,786
Property, plant, and equipment	(16)	2,967	2,580
Other financial assets	(12)	1,155	1,358
Trade and other receivables	(13)	118	126
Other non-financial assets	(14)	621	532
Tax assets		443	450
Deferred tax assets	(10)	1,022	571
<b>Total non-current assets</b>		<b>30,567</b>	<b>32,713</b>
<b>Total assets</b>		<b>42,497</b>	<b>44,277</b>
Trade and other payables	(17)	1,151	1,281
Tax liabilities		597	316
Financial liabilities	(17)	1,561	1,813
Other non-financial liabilities	(17)	3,946	3,699
Provisions	(18)	184	183
Deferred income	(19)	2,771	2,383
<b>Total current liabilities</b>		<b>10,210</b>	<b>9,674</b>
Trade and other payables	(17)	119	127
Tax liabilities		470	365
Financial liabilities	(17)	5,034	6,481
Other non-financial liabilities	(17)	503	461
Provisions	(18)	303	217
Deferred tax liabilities	(10)	240	411
Deferred income	(19)	79	143
<b>Total non-current liabilities</b>		<b>6,747</b>	<b>8,205</b>
<b>Total liabilities</b>		<b>16,958</b>	<b>17,880</b>
Issued capital		1,229	1,229
Share premium		570	599
Retained earnings		24,794	22,302
Other components of equity		508	3,346
Treasury shares		-1,591	-1,099
<b>Equity attributable to owners of parent</b>		<b>25,509</b>	<b>26,376</b>
<b>Non-controlling interests</b>		<b>31</b>	<b>21</b>
<b>Total equity</b>	(20)	<b>25,540</b>	<b>26,397</b>
<b>Total equity and liabilities</b>		<b>42,497</b>	<b>44,277</b>

The accompanying Notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Changes in Equity of SAP Group for the Years Ended December 31

€ millions	Equity Attributable to Owners of Parent						Non-Controlling Interests	Total Equity
	Issued Capital	Share Premium	Retained Earnings	Other Components of Equity	Treasury Shares	Total		
Notes	(20)	(20)	(20)		(20)			
<b>January 1, 2015</b>	<b>1,229</b>	<b>614</b>	<b>18,317</b>	<b>564</b>	<b>-1,224</b>	<b>19,499</b>	<b>34</b>	<b>19,534</b>
Profit after tax			3,064			3,064	-8	3,056
Other comprehensive income			-17	1,997		1,980		1,980
<b>Comprehensive income</b>			<b>3,047</b>	<b>1,997</b>		<b>5,044</b>	<b>-8</b>	<b>5,036</b>
Share-based payments		-136				-136		-136
Dividends			-1,316			-1,316		-1,316
Reissuance of treasury shares under share-based payments		80			100	180		180
Other changes			-4			-4	2	-2
<b>December 31, 2015</b>	<b>1,229</b>	<b>558</b>	<b>20,043</b>	<b>2,561</b>	<b>-1,124</b>	<b>23,267</b>	<b>28</b>	<b>23,295</b>
Profit after tax			3,646			3,646	-13	3,634
Other comprehensive income			-8	785		777		777
<b>Comprehensive income</b>			<b>3,638</b>	<b>785</b>		<b>4,423</b>	<b>-13</b>	<b>4,410</b>
Share-based payments		16				16		16
Dividends			-1,378			-1,378		-1,378
Reissuance of treasury shares under share-based payments		25			25	50		50
Other changes			-2			-2	6	4
<b>December 31, 2016</b>	<b>1,229</b>	<b>599</b>	<b>22,302</b>	<b>3,346</b>	<b>-1,099</b>	<b>26,376</b>	<b>21</b>	<b>26,397</b>
Hyperinflation			-17			-17		-17
<b>January 1, 2017</b>	<b>1,229</b>	<b>599</b>	<b>22,285</b>	<b>3,346</b>	<b>-1,099</b>	<b>26,359</b>	<b>21</b>	<b>26,380</b>
Profit after tax			4,018			4,018	38	4,056
Other comprehensive income			22	-2,838		-2,816		-2,816
<b>Comprehensive income</b>			<b>4,040</b>	<b>-2,838</b>		<b>1,202</b>	<b>38</b>	<b>1,240</b>
Share-based payments		-43				-43		-43
Dividends			-1,499			-1,499	-66	-1,565
Purchase of treasury shares					-500	-500		-500
Reissuance of treasury shares under share-based payments		13			8	22		22
Changes in non-controlling interests			-33			-33	35	2
Other changes			2			2	2	4
<b>December 31, 2017</b>	<b>1,229</b>	<b>570</b>	<b>24,794</b>	<b>508</b>	<b>-1,591</b>	<b>25,509</b>	<b>31</b>	<b>25,540</b>

The accompanying Notes are an integral part of these Consolidated Financial Statements.

## Consolidated Statements of Cash Flows of SAP Group for the Years Ended December 31

€ millions	Notes	2017	2016	2015
<b>Profit after tax</b>		<b>4,056</b>	<b>3,634</b>	<b>3,056</b>
Adjustments to reconcile profit after tax to net cash flow from operating activities:				
Depreciation and amortization	(15)	1,272	1,268	1,289
Income tax expense	(10)	970	1,229	935
Financial income, net	(9)	-185	38	5
Decrease/increase in sales and bad debt allowances on trade receivables		-32	51	45
Other adjustments for non-cash items		-34	39	-2
Decrease/increase in trade and other receivables		-309	-675	-844
Decrease/increase in other assets		-355	-248	-313
Decrease/increase in trade payables, provisions, and other liabilities		389	513	757
Decrease/increase in deferred income		718	368	218
Interest paid		-200	-190	-172
Interest received		88	79	82
Income taxes paid, net of refunds		-1,332	-1,477	-1,420
<b>Net cash flows from operating activities</b>		<b>5,045</b>	<b>4,628</b>	<b>3,638</b>
Business combinations, net of cash and cash equivalents acquired		-291	-106	-39
Cash receipts from derivative financial instruments related to business combinations		0	0	266
Total cash flows for business combinations, net of cash and cash equivalents acquired		-291	-106	226
Purchase of intangible assets and property, plant, and equipment		-1,275	-1,001	-636
Proceeds from sales of intangible assets or property, plant, and equipment		97	63	68
Purchase of equity or debt instruments of other entities		-2,914	-1,549	-1,871
Proceeds from sales of equity or debt instruments of other entities		3,272	793	1,880
<b>Net cash flows from investing activities</b>		<b>-1,112</b>	<b>-1,799</b>	<b>-334</b>
Dividends paid	(21)	-1,499	-1,378	-1,316
Dividends paid on non-controlling interests		-45	0	0
Purchase of treasury shares	(20)	-500	0	0
Proceeds from reissuance of treasury shares		0	27	64
Proceeds from borrowings		27	400	1,748
Cash receipts from swap contracts		0	43	0
Total cash flows from proceeds from borrowings		27	443	1,748
Repayments of borrowings		-1,391	-1,800	-3,852
Transactions with non-controlling interests		2	3	0
<b>Net cash flows from financing activities</b>		<b>-3,406</b>	<b>-2,705</b>	<b>-3,356</b>
<b>Effect of foreign currency rates on cash and cash equivalents</b>		<b>-218</b>	<b>167</b>	<b>135</b>
<b>Net decrease/increase in cash and cash equivalents</b>		<b>309</b>	<b>291</b>	<b>83</b>
<b>Cash and cash equivalents at the beginning of the period</b>	(21)	<b>3,702</b>	<b>3,411</b>	<b>3,328</b>
<b>Cash and cash equivalents at the end of the period</b>	(21)	<b>4,011</b>	<b>3,702</b>	<b>3,411</b>

The accompanying Notes are an integral part of these Consolidated Financial Statements.

# Notes

## (1) General Information About Consolidated Financial Statements

The registered seat of SAP SE is in Walldorf, Germany (Commercial Register of the Lower Court of Mannheim HRB 719915). The accompanying Consolidated Financial Statements for 2017 of SAP SE and its subsidiaries (collectively, "we," "us," "our," "SAP," "Group," and "Company") have been prepared in accordance with International Financial Reporting Standards (IFRS).

We have applied all standards and interpretations that were effective on and endorsed by the European Union (EU) as at December 31, 2017. There were no standards or interpretations as at December 31, 2017, impacting our Consolidated Financial Statements for the years ended December 31, 2017, 2016, and 2015, that were effective but not yet endorsed. Therefore, our Consolidated Financial Statements comply with both IFRS as issued by the International Accounting Standards Board (IASB) and with IFRS as endorsed by the EU.

Our Executive Board approved the Consolidated Financial Statements on February 21, 2018, for submission to our Supervisory Board.

All amounts included in the Consolidated Financial Statements are reported in millions of euros (€ millions) except where otherwise stated. As figures were rounded, numbers presented throughout this document may not add up precisely to the totals we provide and percentages may not precisely reflect the absolute figures.

## (2) Scope of Consolidation

### Entities Consolidated in the Financial Statements

	Total
<b>December 31, 2015</b>	<b>255</b>
Additions	8
Disposals	-18
<b>December 31, 2016</b>	<b>245</b>
Additions	10
Disposals	-28
<b>December 31, 2017</b>	<b>227</b>

The additions relate to legal entities added in connection with acquisitions and foundations. The disposals are mainly due to mergers and liquidations of legal entities.

## (3) Summary of Significant Accounting Policies

### (3a) Bases of Measurement

The Consolidated Financial Statements have been prepared on the historical cost basis except for the following:

- Derivative financial instruments, available-for-sale financial assets, and liabilities for cash-settled share-based payments are measured at fair value.
- Post-employment benefits are measured at present value of the defined benefit obligations less fair value of plan assets.
- Monetary assets and liabilities denominated in foreign currencies are translated at period-end exchange rates.

Where applicable, information about the methods and assumptions used in determining the respective measurement bases is disclosed in the Notes specific to that asset or liability.

### (3b) Relevant Accounting Policies

#### Business Combinations and Goodwill

We decide on a transaction-by-transaction basis whether to measure the non-controlling interest in the acquiree at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are accounted as expense in the periods in which the costs are incurred and the services are

received, with the expense being classified as general and administration expense.

## Foreign Currencies

Income and expenses and operating cash flows of our foreign subsidiaries that use a functional currency other than the euro

are translated at average rates of foreign exchange (FX) computed on a monthly basis. Exchange differences resulting from foreign currency transactions are recognized in other non-operating income/expense, net.

The exchange rates of key currencies affecting the Company were as follows:

### Exchange Rates

Equivalent to €1		Middle Rate as at December 31		Annual Average Exchange Rate		
		2017	2016	2017	2016	2015
U.S. dollar	USD	1.1993	1.0541	1.1315	1.1045	1.1071
Pound sterling	GBP	0.8872	0.8562	0.8770	0.8206	0.7255
Japanese yen	JPY	135.01	123.40	126.85	119.77	134.12
Swiss franc	CHF	1.1702	1.0739	1.1159	1.0886	1.0688
Canadian dollar	CAD	1.5039	1.4188	1.4705	1.4606	1.4227
Australian dollar	AUD	1.5346	1.4596	1.4794	1.4850	1.4753

With effect from January 1, 2017, we have applied hyperinflationary accounting in accordance with IAS 29 for our subsidiary in Venezuela, the impact of which has not been material to us.

## Revenue Recognition

### Classes of Revenue

We derive our revenue from fees charged to our customers for (a) the use of our hosted cloud offerings, (b) licenses to our on-premise software products, and (c) standardized and premium support services, consulting, customer-specific on-premise software development agreements, training, and other services.

Cloud and software revenue, as presented in our Consolidated Income Statements, is the sum of our cloud subscriptions and support revenue, our software licenses revenue, and our software support revenue.

- Revenue from cloud subscriptions and support represents fees earned from providing customers with the following:
  - Software-as-a-Service (SaaS), that is, a right to use software functionality in a cloud-based-infrastructure (hosting) provided by SAP, where the customer does not have the right to terminate the hosting contract and take possession of the software to run it on the customer's own IT infrastructure or by a third-party hosting provider, or
  - Platform-as-a-Service (PaaS), that is, access to a cloud-based infrastructure to develop, run, and manage applications, or
  - Infrastructure-as-a-Service (IaaS), that is, hosting and related application management services for software hosted by SAP, where the customer has the right to take possession of the software, or

- Additional premium cloud subscription support beyond the regular support that is embedded in the basic cloud subscription fees, or
- Business Network Services, that is, connecting companies in a cloud-based-environment to perform business processes between the connected companies.
- Software licenses revenue represents fees earned from the sale or license of software to customers for use on the customer's premises, in other words, where the customer has the right to take possession of the software for installation on the customer's premises (on-premise software). Software licenses revenue includes revenue from both the sale of our standard software products and customer-specific on-premise software development agreements.
- Software support revenue represents fees earned from providing customers with standardized support services which comprise unspecified future software updates, upgrades, and enhancements as well as technical product support services for on-premise software products. We do not sell separately technical product support or unspecified software upgrades, updates, and enhancements. Additionally, control for these components transfers simultaneously over time. Accordingly, we do not distinguish within software support revenue or within cost of software support the amounts attributable to technical support services and unspecified software upgrades, updates, and enhancements.

Services revenue as presented in our Consolidated Income Statements represents fees earned from providing customers with the following:



- Professional services, that is, consulting services that primarily relate to the installation and configuration of our cloud subscriptions and on-premise software products
- Premium support services, that is, high-end support services tailored to customer requirements
- Training services
- Messaging services (primarily transmission of electronic text messages from one mobile phone provider to another)
- Payment services in connection with our travel and expense management offerings.

We account for out-of-pocket expenses invoiced by SAP and reimbursed by customers as cloud subscriptions and support, software support, or services revenue, depending on the nature of the service for which the out-of-pocket expenses were incurred.

### Timing of Revenue Recognition

We do not start recognizing revenue from customer arrangements before evidence of an arrangement exists, the amount of revenue and associated costs can be measured reliably, collection of the related receivable is probable, and the delivery has occurred or the services have been rendered. If, for any of our product or service offerings, we determine at the outset of an arrangement that the amount of revenue cannot be measured reliably, we conclude that the inflow of economic benefits associated with the transaction is not probable, and we defer revenue recognition until the arrangement fee becomes due and payable by the customer. If, at the outset of an arrangement, we determine that collectability is not probable, we conclude that the inflow of economic benefits associated with the transaction is not probable, and we defer revenue recognition until the earlier of when collectability becomes probable or payment is received. If a customer is specifically identified as a bad debtor at a later point in time, we stop recognizing revenue from the customer except to the extent of the fees that have already been collected.

In general, we invoice fees for standard software upon contract closure and delivery. Periodic fixed fees for cloud subscription services and software support services are mostly invoiced yearly or quarterly in advance. Fees based on actual transaction volumes for cloud subscriptions and fees charged for non-periodical services are invoiced as the services are delivered.

Cloud subscriptions and support revenue is recognized as the services are performed. Where a periodic fixed fee is agreed for the right to continuously access and use a cloud offering for a certain term, the fee is recognized ratably over the term covered by the fixed fee. Fees that are based on actual transaction volumes are recognized as the transactions occur. In general, our cloud subscriptions and support contracts include certain set-up activities. If these set-up activities have stand-alone value, they are accounted for as distinct deliverables, with the respective revenue being classified as service revenue and

recognized as the set-up activity is performed. If we conclude that such set-up activities are not distinct deliverables, we do not account for them separately.

Revenue from the sale of perpetual licenses of our standard on-premise software products is recognized upon delivery of the software, that is, when the customer has access to the software. Occasionally, we license on-premise software for a specified period of time, revenue from such time-based licenses is also recognized upon delivery of the software.

In general, our on-premise software license agreements include neither acceptance-testing provisions nor rights to return the software. If an arrangement allows for customer acceptance-testing of the software, we defer revenue until the earlier of customer acceptance or when the acceptance right lapses. If an arrangement allows for returning the software, we defer recognition of software revenue until the right to return expires.

We usually recognize revenue from on-premise software arrangements involving resellers on evidence of sell-through by the reseller to the end customer, because the inflow of the economic benefits associated with the arrangements to us is not probable before sell-through has occurred.

Software licenses revenue from customer-specific on-premise software development agreements that qualify for revenue recognition by reference to the stage of completion of the contract activity is recognized using the percentage-of-completion method based on contract costs incurred to date as a percentage of total estimated contract costs required to complete the development work.

Under our standardized support services, our performance obligation is to stand ready to provide technical product support and unspecified updates, upgrades, and enhancements on a when-and-if-available basis. Consequently, we recognize support revenue ratably over the term of the support arrangement.

We recognize services revenue as the services are rendered. Usually, our professional services contracts and premium support services contracts do not involve significant production, modification, or customization of software, and the related revenue is recognized as the services are provided using the percentage-of-completion method of accounting. For messaging services, we measure the progress of service rendering based on the number of messages successfully processed and delivered except for fixed-price messaging arrangements, for which revenue is recognized ratably over the contractual term of the arrangement. Revenue from our training services is recognized when the customer consumes the respective classroom training. For on-demand training services, whereby our performance obligation is to stand ready and provide the customer with access to the training courses and

learning content services, revenue is recognized ratably over the contractual term of the arrangement.

## Measurement of Revenue

Revenue is recognized net of returns and allowances, trade discounts, and volume rebates.

Our contributions to resellers that allow our resellers to execute qualified and approved marketing activities are recognized as an offset to revenue, unless we obtain a separate identifiable benefit for the contribution and the fair value of that benefit is reasonably estimable.

## Multiple-Element Arrangements

We combine two or more customer contracts with the same customer and account for the contracts as a single arrangement if the contracts are negotiated as a package or otherwise linked.

We account for the different goods and services promised under our customer contracts as separate units of account (distinct deliverables) unless:

- The contract involves significant production, modification, or customization of the cloud subscription or on-premise software; and
- The services are not available from third-party vendors and are therefore deemed essential to the cloud subscription or on-premise software.

Goods and services that do not qualify as distinct deliverables are combined into one unit of account (combined deliverables).

The portion of the transaction fee allocated to one distinct deliverable is recognized in revenue separately under the policies applicable to the respective deliverable. For combined deliverables consisting of cloud offerings or on-premise software and other services, the allocated portion of the transaction fee is recognized using the percentage-of-completion method, as outlined above, or over the cloud subscription term, if applicable, depending on which service term is longer.

We allocate the total transaction fee of a customer contract to the distinct deliverables under the contract based on their fair values. The allocation is done relative to the distinct deliverables' individual fair values unless the residual method is applied as outlined below. Fair value is determined by company-specific objective evidence of fair value, which is the price charged consistently when that element is sold separately or, for elements not yet sold separately, the price established by our management if it is probable that the price will not change before the element is sold separately. Where company-specific objective evidence of fair value and third-party evidence of selling price cannot be established due to lacking stand-alone sales or lacking pricing consistency, we determine the fair value of a distinct deliverable by estimating its stand-alone selling price. Company-specific objective evidence of fair value and

estimated stand-alone selling prices (ESP) for our major products and services are determined as follows:

- We derive the company-specific objective evidence of fair value for our renewable support services from the rates charged to renew the support services annually after an initial period. Such renewal rates generally represent a fixed percentage of the discounted software license fee charged to the customer. The majority of our customers renew their annual support service contracts at these rates.
- Company-specific objective evidence of fair value for our service offerings is derived from our consistently priced historic sales.
- Company-specific objective evidence of fair value can generally not be established for our cloud subscriptions. ESP for these offerings is determined based on the rates agreed for the individual contract to apply if and when the subscription arrangement renews. We determine ESP by considering multiple factors which include, but are not limited to, the following:
  - Substantive renewal rates stipulated in the cloud arrangement; and
  - Gross margin expectations and expected internal costs of the respective cloud business model.
- For our on-premise software offerings, company-specific objective evidence of fair value can generally not be established and representative stand-alone selling prices are not discernible from past transactions. We therefore apply the residual method to multiple-element arrangements that include on-premise software. Under this method, the transaction fee is allocated to all undelivered elements in the amount of their respective fair values and the remaining amount of the arrangement fee is allocated to the delivered element. With this policy, we have considered the guidance provided by Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Subtopic 985-605 (Software Revenue Recognition), where applicable, as authorized by IAS 8 (Accounting Policies, Changes in Accounting Estimates and Errors).

We also consider FASB ASC 985-605 in our accounting for options that entitle the customer to purchase, in the future, additional on-premise software or services. We allocate revenue to future incremental discounts whenever customers are granted a material right, that is, the right to license additional on-premise software at a higher discount than the one given within the initial software license arrangement, or to purchase or renew services at rates below the fair values established for these services. We also consider whether future purchase options included in arrangements for cloud subscription deliverables constitute a material right.

## Cost of Cloud and Software

Cost of cloud and software includes the costs incurred in producing the goods and providing the services that generate

cloud and software revenue. Consequently, this line item primarily includes employee expenses relating to these services, amortization of acquired intangibles, fees for third-party licenses, shipping, ramp-up costs, and depreciation of our property, plant, and equipment (for example, of our data centers in which we host our cloud solutions).

## Cost of Services

Cost of services includes the costs incurred in providing the services that generate service revenue, such as consulting and training activities, messaging, as well as certain application management services for our customers and our partners.

## Research and Development

Research and development includes the costs incurred by activities related to the development of software solutions (new products, updates, and enhancements) including resource and hardware costs for the development systems.

Research and development costs are expensed as incurred as not all criteria stipulated by the IFRS have been cumulatively met to allow for capitalization of material development expenses.

## Sales and Marketing

Sales and marketing includes costs incurred for the selling and marketing activities related to our software and cloud solutions as well as our service portfolio.

## General and Administration

General and administration includes costs related to finance and administrative functions, human resources, and general management as long as they are not directly attributable to one of the other operating expense line items.

## Accounting for Uncertainties in Income Taxes

We measure current and deferred tax liabilities and assets for uncertainties in income taxes based on our best estimate of the most likely amount payable to or recoverable from the tax authorities, assuming that the tax authorities will examine the amounts reported to them and have full knowledge of all relevant information.

## Share-Based Payments

Share-based payments cover cash-settled and equity-settled awards issued to our employees. The respective expenses are recognized as employee benefits expenses and classified in our Consolidated Income Statements according to the activities that the employees owning the awards perform.

Under certain programs, we grant our employees discounts on purchases of SAP shares. Since those discounts are not dependent on future services to be provided by our employees,

the discount is recognized as an expense when the discounts are granted.

Where we economically hedge our exposure to cash-settled awards, changes in the fair value of the respective hedging instruments are also recognized as employee benefits expenses in profit or loss. The fair values of hedging instruments are based on market data reflecting current market expectations.

For more information about our share-based payments, see [Note \(27\)](#).

## Financial Assets

Our financial assets comprise cash and cash equivalents (highly liquid investments with original maturities of three months or less), loans and receivables, acquired equity and debt investments, and derivative financial instruments (derivatives) with positive fair values. Financial assets are only classified as financial assets at fair value through profit or loss if they are held for trading, as we do not designate financial assets at fair value through profit or loss. All other financial assets are classified as loans and receivables if we do not designate them as available-for-sale financial assets.

Regular-way purchases and sales of financial assets are recorded as at the trade date.

Among the other impairment indicators in IAS 39 (Financial Instruments: Recognition and Measurement), for an investment in an equity security, objective evidence of impairment includes a significant (more than 20%) or prolonged (a period of more than nine months) decline in its fair value. Impairment losses on financial assets are recognized in financial income, net. For available-for-sale financial assets, which are non-derivative financial assets that are not assigned to loans and receivables or financial assets at fair value through profit or loss, impairment losses directly reduce an asset's carrying amount, while impairments on loans and receivables are recorded using allowance accounts. Such allowance accounts are always presented together with the accounts containing the asset's cost in other financial assets. Account balances are written off against the respective allowance after all collection efforts have been exhausted and the likelihood of recovery is considered remote.

## Derivatives

### Derivatives Not Designated as Hedging Instruments

Many transactions constitute economic hedges, and therefore contribute effectively to the securing of financial risks but do not qualify for hedge accounting under IAS 39. To hedge currency risks inherent in foreign-currency denominated and recognized monetary assets and liabilities, we do not designate our held-for-trading derivative financial instruments as accounting hedges, because the profits and losses from the underlying transactions

are recognized in profit or loss in the same periods as the profits or losses from the derivatives.

In addition, we occasionally have contracts that contain foreign currency embedded derivatives that are required to be accounted for separately.

### Derivatives Designated as Hedging Instruments

We use derivatives to hedge foreign currency risk or interest rate risk and designate them as cash flow or fair value hedges if they qualify for hedge accounting under IAS 39. For more information about our hedges, see [Note \(25\)](#).

#### Cash Flow Hedge

In general, we apply cash flow hedge accounting to the foreign currency risk of highly probable forecasted transactions and interest rate risk on variable rate financial liabilities.

With regard to foreign currency risk, hedge accounting relates to the spot price and the intrinsic values of the derivatives designated and qualifying as cash flow hedges, while gains and losses on the interest element and on those time values excluded from the hedging relationship as well as the ineffective portion of gains or losses are recognized in profit or loss as they occur.

#### Fair Value Hedge

We apply fair value hedge accounting for certain of our fixed rate financial liabilities.

### Valuation and Testing of Effectiveness

The effectiveness of the hedging relationship is tested prospectively and retrospectively. Prospectively, we apply the critical terms match for our foreign currency hedges, as currencies, maturities, and the amounts are identical for the forecasted transactions and the spot element of the forward exchange rate contract or intrinsic value of the currency options, respectively. For interest rate swaps, we also apply the critical terms match, as the notional amounts, currencies, maturities, basis of the variable legs or fixed legs, respectively, reset dates, and the dates of the interest and principal payments are identical for the debt instrument and the corresponding interest rate swaps. Therefore, over the life of the hedging instrument, the changes in the designated components of the hedging instrument will offset the impact of fluctuations of the underlying hedged items.

The method of testing effectiveness retrospectively depends on the type of the hedge as described further below:

#### Cash Flow Hedge

Retrospectively, effectiveness is tested on a cumulative basis applying the dollar offset method by using the hypothetical derivative method. Under this approach, the change in fair value of a constructed hypothetical derivative with terms reflecting the relevant terms of the hedged item is compared to the

change in the fair value of the hedging instrument employing its relevant terms. The hedge is deemed highly effective if the results are within the range 80% to 125%.

#### Fair Value Hedge

Retrospectively, effectiveness is tested using statistical methods in the form of a regression analysis, by which the validity and extent of the relationship between the change in value of the hedged items as the independent variable and the fair value change of the derivatives as the dependent variable is determined. The hedge is deemed highly effective if the determination coefficient between the hedged items and the hedging instruments exceeds 0.8 and the slope coefficient lies within a range of  $-0.8$  to  $-1.25$ .

### Trade and Other Receivables

Trade receivables are recorded at invoiced amounts less sales allowances and allowances for doubtful accounts. We record these allowances based on a specific review of all significant outstanding invoices. When analyzing the recoverability of our trade receivables, we consider the following factors:

- First, we consider the financial solvency of specific customers and record an allowance for specific customer balances when we believe it is probable that we will not collect the amount due according to the contractual terms of the arrangement.
- Second, we evaluate homogenous portfolios of trade receivables according to their default risk, primarily based on the age of the receivable and historical loss experience, but also taking into consideration general market factors that might impact our trade receivable portfolio. We record a general bad debt allowance to record impairment losses for a portfolio of trade receivables when we believe that the age of the receivables indicates that it is probable that a loss has occurred and we will not collect some or all of the amounts due.

Account balances are written off, that is, charged off against the allowance after all collection efforts have been exhausted and the likelihood of recovery is considered remote.

In our Consolidated Income Statements, expenses from recording bad debt allowances for a portfolio of trade receivables as well as bad debt allowances for specific customer balances are classified as other operating income/expense, net. Sales allowances are recorded as an offset to the respective revenue item in our Consolidated Income Statements.

Included in trade receivables are unbilled receivables related to fixed-fee and time-and-material consulting arrangements for contract work performed to date.

### Other Non-Financial Assets

Other non-financial assets are recorded at amortized cost. The capitalized contract cost mainly results from the capitalization of direct and incremental cost incurred when obtaining a

customer cloud subscription contract. We amortize these assets on a straight-line basis over the period of providing the cloud subscriptions to which the assets relate.

## Goodwill and Intangible Assets

We classify intangible assets according to their nature and use in our operations. Software and database licenses consist primarily of technology for internal use, whereas acquired technology consists primarily of purchased software to be incorporated into our product offerings and in-process research and development (IPRD). Customer relationship and other intangibles consist primarily of customer contracts and acquired trademark licenses.

All our purchased intangible assets other than goodwill have finite useful lives. They are initially measured at acquisition cost and subsequently amortized either based on expected consumption of economic benefits or on a straight-line basis over their estimated useful lives ranging from two to 20 years.

Amortization for acquired in-process research and development project assets starts when the projects are complete and the developed software is taken to the market. We typically amortize these intangibles over five to seven years.

Amortization expenses of intangible assets are classified as cost of cloud and software, cost of services, research and development, sales and marketing, and general and administration, depending on the use of the respective intangible assets.

The annual goodwill impairment test is performed at the level of our operating segments since there are no lower levels in SAP at which goodwill is monitored for internal management purposes. The test is performed at the same time for all operating segments.

## Property, Plant, and Equipment

Property, plant, and equipment are carried at acquisition cost plus the fair value of related asset retirement costs if any and if reasonably estimable, less accumulated depreciation.

Property, plant, and equipment are depreciated over their expected useful lives, generally using the straight-line method.

## Useful Lives of Property, Plant, and Equipment

Buildings	Predominantly 25 to 50 years
Leasehold improvements	Based on the term of the lease contract
Information technology equipment	2 to 6 years
Office furniture	4 to 20 years
Automobiles	4 to 5 years

## Impairment of Goodwill and Non-Current Assets

Impairment losses, if any, are presented in other operating income/expense, net in profit or loss.

## Liabilities

### Financial Liabilities

Financial liabilities include trade and other payables, bank loans, issued bonds, private placements, and other financial liabilities that comprise derivative and non-derivative financial liabilities. They are classified as financial liabilities at amortized cost and at fair value through profit or loss. The latter include only those financial liabilities that are held for trading, as we do not designate financial liabilities at fair value through profit or loss.

Customer funding liabilities are funds we draw from and make payments on behalf of our customers for customers' employee expense reimbursements, related credit card payments, and vendor payments. We present these funds in cash and cash equivalents and record our obligation to make these expense reimbursements and payments on behalf of our customers as customer funding liabilities.

Expenses and gains/losses on financial liabilities mainly consist of interest expense, which is recognized based on the effective interest method.

## Provisions

Provisions are recorded when:

- We have a present obligation (legal or constructive) as a result of a past event;
- It is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- A reliable estimate can be made of the amount of the obligation.

We regularly adjust provisions as further information becomes available or as circumstances change. Non-current provisions are reported at the present value of their expected settlement amounts as at the reporting date. Discount rates are regularly adjusted to current market interest rates.

The employee-related provisions include, amongst others, long-term employee benefits. They are secured by pledged reinsurance coverage and are offset against the settlement amount of the secured commitment.

A provision for restructuring is recognized when a detailed and formal restructuring plan has been approved and the restructuring has been announced or has commenced.

## Post-Employment Benefits

The discount rates used in measuring our post-employment benefit assets and liabilities are derived from rates available on high-quality corporate bonds and government bonds for which the timing and amounts of payments match the timing and the amounts of our projected pension payments. The assumptions used to calculate pension liabilities and costs are disclosed in *Note (18a)*. Net interest expense and other expenses related to defined benefit plans are recognized as employee benefits expenses and classified in our Consolidated Income Statements according to the activities that the employees owning the awards perform.

Since our domestic defined benefit pension plans primarily consist of an employee-financed post-retirement plan that is fully financed with qualifying insurance policies, current service cost may become a credit as a result of adjusting the defined benefit liability's carrying amount to the fair value of the qualifying plan assets. Such adjustments are recorded in service cost.

## Deferred Income

Deferred income is recognized as cloud subscriptions and support revenue, software licenses revenue, software support revenue, or services revenue, depending on the reason for the deferral, once the basic applicable revenue recognition criteria have been met. These criteria are met, for example, when the services are performed or when the discounts that relate to a material right granted in a purchase option are applied.

## (3c) Management Judgments and Sources of Estimation Uncertainty

The preparation of the Consolidated Financial Statements requires management to make judgments, estimates, and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, revenues, and expenses, as well as disclosure of contingent assets and liabilities.

We base our judgments, estimates, and assumptions on historical and forecast information, as well as on regional and industry economic conditions in which we or our customers operate, changes to which could adversely affect our estimates. Although we believe we have made reasonable estimates about the ultimate resolution of the underlying uncertainties, no assurance can be given that the final outcome of these matters will be consistent with what is reflected in our assets, liabilities, revenues, and expenses. Actual results could differ from original estimates.

The accounting policies that most frequently require us to make judgments, estimates, and assumptions, and therefore are critical to understanding our results of operations, include the following:

- Revenue recognition
- Valuation of trade receivables
- Accounting for share-based payments
- Accounting for income taxes
- Accounting for business combinations
- Subsequent accounting for goodwill and intangible assets
- Accounting for legal contingencies
- Recognition of internally generated intangible assets from development

Our management periodically discusses these critical accounting policies with the Audit Committee of the Supervisory Board.

## Revenue Recognition

As described in the Revenue Recognition section of *Note (3b)*, we do not recognize revenue before the amount of revenue can be measured reliably, collection of the related receivable is probable, and the delivery has occurred or the services have been rendered. The determination of whether the amount of revenue can be measured reliably or whether the fees are collectible is inherently judgmental, as it requires estimates as to whether and to what extent subsequent concessions may be granted to customers and whether the customer is expected to pay the contractual fees. The timing and amount of revenue recognition can vary depending on what assessments have been made.

The application of the percentage-of-completion method requires us to make estimates about total revenue, total cost to complete the project, and the stage of completion. The assumptions, estimates, and uncertainties inherent in determining the stage of completion affect the timing and amounts of revenue recognized.

In the accounting for our multiple-element arrangements, we have to determine the following:

- Which contracts with the same customer are to be accounted for as one single arrangement
- Which deliverables under one contract are distinct and thus to be accounted for separately
- How to allocate the total arrangement fee to the distinct deliverables

The determination of whether different contracts with the same customer are to be accounted for as one arrangement involves the use of judgment, as it requires us to evaluate whether the contracts are negotiated together or linked in any other way. The timing and amount of revenue recognition can vary depending on whether two contracts are accounted for separately or as one single arrangement.

Under a multiple-element arrangement including a cloud subscription or on-premise software, and other deliverables, we do not account for the cloud subscription or on-premise

software, and the other deliverables separately if one of the other deliverables (such as consulting services) is deemed to be essential to the functionality of the cloud subscription or on-premise software. The determination of whether an undelivered element is essential to the functionality of the delivered element requires the use of judgment. The timing and amount of revenue recognition can vary depending on how that judgment is exercised, because revenue may be recognized over a longer service term.

In the area of allocating the transaction fee to the different deliverables under the respective customer contract, judgment is required in the determination of an appropriate fair value and estimated stand-alone selling prices (ESP) measurement, which may impact the timing and amount of revenue recognized depending on the following:

- Whether an appropriate measurement of fair value or ESP can be demonstrated for undelivered elements
- The approaches used to establish fair value or ESP

Additionally, our revenue for on-premise software contracts would be significantly different if we applied a revenue allocation policy other than the residual method.

## Valuation of Trade Receivables

Detailed information related to the accounting of Trade and Other Receivables can be found in [Note \(3b\)](#). As described within this section, we account for impairments of trade receivables by recording sales allowances and allowances for doubtful accounts on an individual receivable basis and on a portfolio basis. The assessment of whether a receivable is collectible involves the use of judgment and requires the use of assumptions about customer defaults that could change significantly. Judgment is required when we evaluate available information about a particular customer's financial situation to determine whether it is probable that a credit loss will occur and the amount of such loss is reasonably estimable and thus an allowance for that specific account is necessary. Basing the general allowance for the remaining receivables on our historical loss experience likewise requires the use of judgment, as history may not be indicative of future development. Changes in our estimates about the allowance for doubtful accounts could materially impact reported assets and expenses, and our profit could be adversely affected if actual credit losses exceed our estimates.

## Accounting for Share-Based Payments

We use certain assumptions in estimating the fair values for our share-based payments, including expected share price volatility and expected option life (which represents our estimate of the average amount of time remaining until the options are exercised or expire unexercised). In addition, the final payout for plans also depends on the achievement of performance indicators and on our share price on the respective exercise

dates. Changes to these assumptions and outcomes that differ from these assumptions could require material adjustments to the carrying amount of the liabilities we have recognized for these share-based payments. The fair value of the share units granted under the Long-Term Incentive 2016 Plan are dependent on our performance against a group of peer companies (Peer Group Index), the volatility, and the expected correlation between the price of the index and our share price.

For the purpose of determining the estimated fair value of our share options, we believe expected volatility is the most sensitive assumption. Regarding future payout under our cash-settled plans, the SAP share price is the most relevant factor. With respect to our Long-Term Incentive 2016 Plan, we believe that future payout will be significantly impacted not only by our share price but also by the relative performance against the Peer Group Index. Changes in these factors could significantly affect the estimated fair values as calculated by the valuation model, and the future payout. For more information, see

[Note \(27\)](#).

## Accounting for Income Taxes

We are subject to changing tax laws in multiple jurisdictions within the countries in which we operate. Our ordinary business activities also include transactions where the ultimate tax outcome is uncertain due to different interpretation of tax laws, such as those involving revenue sharing and cost reimbursement arrangements between SAP Group entities. In addition, the amount of income taxes we pay is generally subject to ongoing audits by domestic and foreign tax authorities. As a result, judgment is necessary in determining our worldwide income tax provisions. We make our estimates about the ultimate resolution of our tax uncertainties based on current tax laws and our interpretation thereof. Changes to the assumptions underlying these estimates and outcomes that differ from these assumptions could require material adjustments to the carrying amount of our income tax provisions.

The assessment whether a deferred tax asset is impaired requires management judgment, as we need to estimate future taxable profits to determine whether the utilization of the deferred tax asset is probable. In evaluating our ability to utilize our deferred tax assets, we consider all available positive and negative evidence, including the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are recoverable. Our judgment regarding future taxable income is based on assumptions about future market conditions and future profits of SAP. Changes to these assumptions and outcomes that differ from these assumptions could require material adjustments to the carrying amount of our deferred tax assets.

For more information about income taxes, see [Note \(10\)](#).

## Accounting for Business Combinations

In our accounting for business combinations, judgment is required in determining whether an intangible asset is identifiable, and should be recorded separately from goodwill. Additionally, estimating the acquisition date fair values of the identifiable assets acquired and liabilities assumed involves considerable management judgment. The necessary measurements are based on information available on the acquisition date and are based on expectations and assumptions that have been deemed reasonable by management. These judgments, estimates, and assumptions can materially affect our financial position and profit for several reasons, including the following:

- Fair values assigned to assets subject to depreciation and amortization affect the amounts of depreciation and amortization to be recorded in operating profit in the periods following the acquisition.
- Subsequent negative changes in the estimated fair values of assets may result in additional expense from impairment charges.
- Subsequent changes in the estimated fair values of liabilities and provisions may result in additional expense (if increasing the estimated fair value) or additional income (if decreasing the estimated fair value).

## Subsequent Accounting for Goodwill and Intangible Assets

Judgment is required in determining the following:

- The useful life of an intangible asset, as this is based on our estimates regarding the period over which the intangible asset is expected to produce economic benefits to us
- The amortization method, as IFRS requires the straight-line method to be used unless we can reliably determine the pattern in which the asset's future economic benefits are expected to be consumed by us

Both the amortization period and the amortization method have an impact on the amortization expense that is recorded in each period.

In making impairment assessments for our goodwill and intangible assets, the outcome of these tests is highly dependent on management's assumptions regarding future cash flow projections and economic risks, which require significant judgment and assumptions about future developments. They can be affected by a variety of factors, including:

- Changes in business strategy
- Internal forecasts
- Estimation of weighted-average cost of capital

Changes to the assumptions underlying our goodwill and intangible assets impairment assessments could require material adjustments to the carrying amount of our recognized

goodwill and intangible assets as well as the amounts of impairment charges recognized in profit or loss.

The outcome of goodwill impairment tests may also depend on the allocation of goodwill to our operating segments. This allocation involves judgment as it is based on our estimates regarding which operating segments are expected to benefit from the synergies of business combinations.

For more information about goodwill and intangible assets, see [Note \(15\)](#).

## Accounting for Legal Contingencies

As described in [Note \(23\)](#), we are currently involved in various claims and legal proceedings. We review the status of each significant matter at least quarterly and assess our potential financial and business exposures related to such matters. Significant judgment is required in the determination of whether a provision is to be recorded and what the appropriate amount for such provision should be. Notably, judgment is required in the following:

- Determining whether an obligation exists
- Determining the probability of outflow of economic benefits
- Determining whether the amount of an obligation is reliably estimable
- Estimating the amount of the expenditure required to settle the present obligation

Due to uncertainties relating to these matters, provisions are based on the best information available at the time.

At the end of each reporting period, we reassess the potential obligations related to our pending claims and litigation and adjust our respective provisions to reflect the current best estimate. In addition, we monitor and evaluate new information that we receive after the end of the respective reporting period but before the Consolidated Financial Statements are authorized for issue to determine whether this provides additional information regarding conditions that existed at the end of the reporting period. Changes to the estimates and assumptions underlying our accounting for legal contingencies and outcomes that differ from these estimates and assumptions could require material adjustments to the carrying amounts of the respective provisions recorded as well as additional provisions. For more information about legal contingencies, see [Notes \(18b\)](#) and [\(23\)](#).

## Recognition of Internally Generated Intangible Assets from Development

We believe that determining whether internally generated intangible assets from development are to be recognized as intangible assets requires significant judgment, particularly in the following areas:

- Determining whether activities should be considered research activities or development activities



- Determining whether the conditions for recognizing an intangible asset are met requires assumptions about future market conditions, customer demand, and other developments.
- The term “technical feasibility” is not defined in IFRS, and therefore determining whether the completion of an asset is technically feasible requires judgment and a company-specific approach.
- Determining the future ability to use or sell the intangible asset arising from the development and the determination of the probability of future benefits from sale or use
- Determining whether a cost is directly or indirectly attributable to an intangible asset and whether a cost is necessary for completing a development

These judgments impact the total amount of intangible assets that we present in our balance sheet as well as the timing of recognizing development expenses in profit or loss.

### **(3d) New Accounting Standards Adopted in the Current Period**

No new accounting standards adopted in 2017 had a material impact on our Consolidated Financial Statements.

### **(3e) New Accounting Standards Not Yet Adopted**

The standards and interpretations (relevant to the Group) that are issued, but not yet effective, up to the date of issuance of the Group’s financial statements are disclosed below. The Group intends to adopt these standards, if applicable, when they become effective:

#### **IFRS 15 (Revenue from Contracts with Customers)**

On May 28, 2014, the IASB issued IFRS 15. The new revenue recognition standard is effective for us starting January 1, 2018. In preparing for the adoption of IFRS 15, we produced, over the last years, new IFRS 15-based revenue recognition policies and adjusted relevant business processes to these new policies. These efforts were part of a project established across SAP’s finance and business functions. This project also covered the implementation of a new SAP-based revenue accounting and reporting solution and a global roll-out and training approach for all of the relevant stakeholder groups in SAP. Additionally, we started to implement internal controls over the application of the new policies and processes.

IFRS 15 permits two possible transition methods for the adoption of the new guidance: (1) retrospectively to each prior reporting period presented in accordance with IAS 8 (Accounting Policies, Changes in Accounting Estimates and Errors), or (2) retrospectively with the cumulative effect of initially applying the standard recognized as an adjustment to

the opening balance of retained earnings on the date of the initial application (cumulative catch-up approach). Additionally, IFRS 15 allows, for its initial application, the use of certain practical expedients. Effective January 1, 2018, we started to apply the new standard retrospectively, using the cumulative catch-up approach and the practical expedient to apply the new standard only to contracts that were not completed as of January 1, 2018. This practical expedient affects both the transition adjustment amount recognized in retained earnings and our future revenues and expenses as outlined further below.

There are several differences between our new IFRS 15-based policies and our respective previous accounting policies as they are described in *Note (3b)*. The most significant differences are as follows:

#### **Customer Options for Additional Software License Copies**

The most notable revenue impact relates to the accounting for options for the purchase of additional copies of already licensed on-premise software where those options provide a material right to the customer (Material Right Additional Copy Options). Under our previous policies, we adhered to the guidance under previous U.S. GAAP to not account for these options. In contrast, IFRS 15 provides that such options are accounted for as a separate performance obligation. The transaction price portion allocated to a Material Right Additional Copy Option is recognized in software revenue upon exercise or forfeiture of the option, which will usually be later than the timing under our previous policies.

For those contracts from years before 2018 that include Material Right Additional Copy Options and that were not completed (as this term is defined in IFRS 15) before January 1, 2018, we will recognize, in the opening statement of financial position for 2018, contract liabilities reflecting the amounts allocated, under our new IFRS 15 policies, to those Material Right Additional Copy Options that were not executed before January 1, 2018. We expect these contract liabilities to approximately amount to €0.1 billion, of which substantially less than €0.1 billion are estimated to be recognized in revenue in 2018 with such revenue being classified as software revenue.

The amounts of contract liabilities recognized, in the opening statement of financial position for 2018, for Material Right Additional Copy Options will be impacted by our use of the practical expedient outlined above, as we will only recognize such contract liabilities for Material Right Additional Copy Options that were granted in contracts that were not completed before January 1, 2018.

We currently estimate that our business practices will change in the light of this new accounting policy in a way that Material Right Additional Copy Options are only provided rarely. Thus, we do not expect a material impact on our 2018 and future years’

revenue and profit from future grants of Material Right Additional Copy Options.

### **Assets for Cost of Obtaining Customer Contracts**

The most noticeable expense impact relates to the accounting for cost of obtaining customer contracts. Under our previous accounting policies, we only recognized as an asset those costs of obtaining a customer contract that were both incremental and directly related to the individual contract (that is, paid to sales personnel directly involved in obtaining the customer contract). This resulted in capitalizing certain amounts of sales commissions paid to our sales staff for obtaining cloud subscription contracts, and not capitalizing sales commissions paid for obtaining on-premise software and support contracts, because the terms of our on-premise software sales commissions refer directly only to the software licenses sold and not to the support contracts sold therewith. In contrast, under our IFRS 15 policies, we capitalize all incremental costs of obtaining a customer contract that are expected to be recovered, regardless of whether they are direct or not. Due to this change in policy, we will capitalize, after adoption of IFRS 15, higher amounts of cost of obtaining cloud subscription and service contracts than we did under our previous policies. In addition, we will start capitalizing incremental costs of obtaining on-premise support contracts with the resulting assets to be amortized over the expected life (including anticipated renewals) of the support contract obtained.

For the incremental sales commissions paid for obtaining customer contracts from years before 2018 that were not completed before January 1, 2018, we will recognize, in the opening statement of financial position for 2018, assets reflecting the amounts of sales commissions that qualify for capitalization under IFRS 15 but which did not qualify for capitalization under our previous policies as far as these amounts are to be amortized in periods starting on or after January 1, 2018. We expect these assets to amount to €0.1 billion. The amount of sales commission capitalized in the opening statement of financial position for 2018 will be impacted by our use of the practical expedient outlined above, as we will only apply the new IFRS 15 capitalization policies assets to sales commissions paid for obtaining contracts that were not completed before January 1, 2018. The changes to our policies for capitalization of sales commissions will result, in 2018, in a reduction of our total cost of sales and marketing. We estimate this reduction to amount to €0.2 billion, which reflects the amounts capitalized in 2018, net of expenses from amortization of the amounts capitalized either in the opening statement of financial position for 2018 or during 2018. The actual cost reduction amount will depend on our 2018 on-premise order entry, our sales compensation plans and changes thereto, as well as our future business and go-to-market practices. It may thus differ significantly from our current estimate.

### **Other IFRS 15-Based Policy Changes Impacting Profit or Loss**

Further differences between our new IFRS 15-based policies and our respective previous accounting policies include the following:

- In contrast to our previous policies, we will no longer identify onerous contracts on the level of the individual performance obligation but rather, consider the economic benefits and respective cost of all performance obligations under the same contract and include, as economic benefits, anticipated highly probable renewals of renewable performance obligations. Consequently, we expect to recognize provisions for onerous contracts more rarely and at lower amounts than under our previous policies. In our opening statement of financial position for 2018, we will adjust the provisions for onerous contracts recognized on December 31, 2017, to the amounts appropriate under our new IFRS 15-based policies.
- For certain of our customer-specific on-premise software development agreements, we will recognize revenue and the related cost at the point in time when the software is ultimately delivered to the customer whereas, under our previous policies, we recognized the revenues and costs from such contracts over time as the software was developed. For those contracts from years before 2018 affected by this policy change that were not completed before January 1, 2018, we will recognize, in the opening statement of financial position for 2018, contract liabilities reflecting the amount allocated, under our new IFRS 15 policies, to the obligation to deliver the software. We will also recognize, for these contracts, assets from the direct and recoverable costs incurred in satisfying the obligation to deliver the software.

We expect these changes to have an immaterial impact on our opening statement of financial position for 2018 and estimate that these changes will lead, in total, to additional revenue and operating expenses in 2018, each by substantially less than €0.1 billion.

All other differences between our new IFRS 15-based policies and our respective previous accounting policies are expected to be insignificant to our revenues and profits in 2018.

### **Presentation**

Under our new IFRS 15-based policies, we no longer present, in our statements of financial position, items for deferred revenues. Instead, we present a customer contract as either a contract liability or a contract asset once either party to the contract has started to perform. Rights to consideration from customers are only presented as accounts receivable if the rights are unconditional.

We do not expect to recognize, neither in the opening statement of financial position for 2018 nor in 2018, material contract assets.

Under our previous policies, we recognized claims for prepayments from customers as trade receivables once the amounts were invoiced and the respective service had started. Simultaneously, we recognized respective deferred revenue items to be reversed into revenue as the prepaid goods or services were delivered. Under our new IFRS 15-based policies, we recognize trade receivables only as far as goods or services are delivered or prepayments from customers are due. Consequently, compared to the recognition of trade receivables and deferred revenue under our previous policies, the following applies:

- Trade receivables and contract liabilities are recognized later, and contract liability amounts recognized are initially smaller where claims for prepayments are due after the respective service has started,
- Trade receivables and contract liabilities are recognized earlier where claims for prepayments are due before the respective service has started.

This change is of a presentation nature only and thus does not affect revenues and profits.

We currently expect this change in policy to increase the 2018 opening balance of both our trade receivables and our contract liabilities by approximately €0.6 billion to €0.7 billion as compared to our 2017 closing balances of trade receivables and deferred revenues.

The other IFRS 15-induced policy changes will additionally impact contract positions as outlined above.

## Disclosures

It is not practicable to estimate whether any of the additional disclosures we will provide under IFRS 15 could be material to readers of our financial statements.

## IFRS 9 (Financial Instruments)

On July 24, 2014, the IASB issued the fourth and final version of IFRS 9. We will adopt IFRS 9 on January 1, 2018. We will use the exceptions from full retrospective application and thus recognize the effect of the initial application as an adjustment to the opening balance of retained earnings.

We have reviewed our financial assets and liabilities and expect the following impacts:

### Classification of financial assets

The majority of our debt investments, and all loans, trade and other financial receivables will satisfy the conditions for a classification at amortized cost. Thus, we will see a change in classification for those debt investments which we currently classify as available-for-sale financial assets. Under our new policies, investments in money market and similar funds will be classified as fair value through profit or loss (FVTPL). However,

we do not expect these changes to have a material impact on our Consolidated Financial Statements.

Under our new policies, we classify the majority of our equity investments on January 1, 2018 as FVTPL. This change will most likely lead to an increase of volatility in profit and loss, as we have classified those investments as available-for-sale with unrealized gains and losses recorded in OCI in the past. Under our new policies, the equity investments not classified as FVTPL will be classified as fair value through other comprehensive income (FVOCI), so that gains or losses realized on the sale (which were not material in the past) will no longer be transferred to profit or loss. Amounts attributable to available-for-sale financial assets accumulated in OCI so far will be reclassified to 2018 opening retained earnings. From 2018 onwards, the decision whether to classify new equity investments as FVTPL or FVOCI will be made on an investment-by-investment basis.

### Financial liabilities

We have never designated any financial liabilities at FVTPL and have no current intention to do so. Also, none of our financial liabilities has been modified in the past. Thus, we do not expect a material impact on our financial liabilities, considering that the only significant changes that IFRS 9 will bring to the accounting for financial liabilities are that for liabilities designated as at FVTPL, changes in the fair value attributable to changes in the credit risk of the liability must be presented in other comprehensive income (OCI) and that modified financial liabilities are accounted for using the original effective interest rate instead with the one resulting from the modification.

### Impairment

We will apply the simplified impairment approach of IFRS 9 and thus record lifetime expected credit losses on all trade receivables and contract assets. The default risk of our trade receivables is managed based on assessing the creditworthiness of customers through external ratings and our past experience with the customers concerned. Outstanding receivables are continuously monitored locally.

For bank balances, debt investments, and loans and other financial receivables not classified as FVTPL, we will apply the general IFRS 9 impairment approach under our new policies.

It is our policy to only invest in high-quality assets of issuers with a minimum rating of at least investment grade to minimize the risk of credit losses. As the premium for credit default swaps mainly depends on market participants' assessments of the creditworthiness of a debtor, we also closely observe the development of credit default swap spreads in the market to evaluate probable significant increases in credit risk to timely react to changes if these should manifest. Loans and other financial receivables are monitored based on borrower-specific information.

Despite the change from an incurred loss to an expected credit loss model, we do not expect our impairment allowances for trade receivables and other financial assets to be materially different from what they would be if we continued our current accounting policies.

### **Hedge accounting**

We will apply the new hedge accounting requirements prospectively. The types of hedge accounting relationships that we currently designate meet the requirements of IFRS 9 and are aligned with our risk management strategy. Thus, all existing hedge relationships that we have designated in effective hedging relationships in the past will still qualify for hedge accounting under our new policies. In contrast to our current policies where fair value changes related to the forward element and foreign currency basis spreads have been recognized in profit or loss immediately, the respective costs for forward contracts designated in an effective hedging relationship are recorded in other comprehensive income under our new policies. Thus, the forward element and foreign currency basis spreads are recorded as cost of hedging in other comprehensive income. However, this is not expected to have a material impact on our Consolidated Financial Statements.

### **Disclosures**

IFRS 9 will require extensive new disclosures. Our assessment included an analysis to identify data gaps against current processes, and we are in the process of implementing the system and controls that we believe will be necessary to gather the necessary data to be able to provide the required disclosures where they are material.

### **IFRS 16 (Leases)**

On January 13, 2016, the IASB issued IFRS 16. We will adopt IFRS 16 as per its effective date of January 1, 2019, using the modified retrospective approach. The new standard will significantly impact especially the lease accounting by lessees as, in general, all leases need to be recognized on a company's balance sheet (represented by right-of-use assets and lease liabilities). We plan to use practical expedients offered by the standard (such as short-term leases, low-value leases, and no separation of non-lease components of a contract). Due to the adoption of IFRS 16, we expect the total assets and total liabilities to increase, as right-of-use assets / lease liabilities will have to be recorded for those items that were previously "off balance sheet"; operating profit is also expected to increase, as costs that were treated as rental expenses in the past will have to be presented as interest expense going forward. As the effects of applying IFRS 16 will depend on the lease agreements in effect at the time of adoption, the IFRS 16 impact on our Consolidated Financial Statements cannot be estimated reliably.

## (4) Business Combinations

On September 24, 2017, SAP announced that it had entered into an agreement to acquire U.S.-based Gigya, Inc., a market leader for customer identity and access management solutions. The transaction closed on November 1, 2017, following receipt of regulatory approvals.

The majority of the purchase price for our acquisitions was allocated to goodwill and intangible assets. For more information, see [Note \(15\)](#).

There were no significant acquisitions in 2016.

## (5) Revenue

For detailed information about our revenue recognition policies, see [Note \(3\)](#).

For revenue information by geographic region, see [Note \(28\)](#).

Revenue from construction contracts (contract revenue) is mainly included in software revenue and services revenue depending on the type of contract. In 2017, revenue of €317 million was recognized for all our construction contracts (2016: €280 million, 2015: €292 million). The status of our construction contracts in progress at the end of the reporting period accounted for under IAS 11 (Construction Contracts) was as follows:

### Construction Contracts in Progress

€ millions	2017	2016	2015
Aggregate cost recognized (multi-year)	435	527	294
Recognized result (+ profit/- loss; multi-year)	-104	-174	20
Gross amounts due to customers	30	78	41

Recognized losses stated for 2017 and 2016 predominantly resulted from strategic customer co-innovation projects.

## (6) Restructuring

### Restructuring Expenses

€ millions	2017	2016	2015
Employee-related restructuring expenses	180	33	610
Onerous contract-related restructuring expenses	2	-5	11
<b>Restructuring expenses</b>	<b>182</b>	<b>28</b>	<b>621</b>

The increase in restructuring expenses was mainly caused by a restructuring program executed in the Digital Business Services (DBS) board area in 2017 which went hand-in-hand with the DBS transformation. The transformation was prompted by changing service requirements, as an increasing amount of software deployments are moving to the cloud.

Restructuring provisions primarily include employee benefits that result from severance payments for employee terminations and onerous contract costs. Prior-year restructuring provisions relate to restructuring activities incurred in connection with organizational changes and the integration of employees of our acquisitions in previous years.

If not presented separately in our income statement, restructuring expenses would break down by functional area as follows:

### Restructuring Expenses by Functional Area

€ millions	2017	2016	2015
Cost of cloud and software	55	3	80
Cost of services	118	7	218
Research and development	9	7	156
Sales and marketing	2	10	147
General and administration	-2	1	20
<b>Restructuring expenses</b>	<b>182</b>	<b>28</b>	<b>621</b>

## (7) Employee Benefits Expense and Number of Employees

### Employee Benefits Expense

€ millions	2017	2016	2015
Salaries	8,693	7,969	7,483
Social security expense	1,281	1,135	1,067
Share-based payment expense	1,120	785	724
Pension expense	312	270	258
Employee-related restructuring expense	180	33	610
Termination benefits outside of restructuring plans	57	37	28
<b>Employee benefits expense</b>	<b>11,643</b>	<b>10,229</b>	<b>10,170</b>

Pension expense includes the amounts recorded for our defined benefit and defined contribution plans as described in [Note \(18a\)](#). Expenses for local state pension plans are included in social security expense.

The number of employees in the following table is broken down by function and by the regions EMEA (Europe, Middle East, and Africa), Americas (North America and Latin America), and APJ (Asia Pacific Japan).

## Number of Employees

Full-time equivalents	December 31, 2017				December 31, 2016				December 31, 2015			
	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total
Cloud and software	5,869	3,895	4,719	14,482	6,406	4,184	5,412	16,002	6,095	3,920	4,976	14,991
Services	7,536	4,878	4,965	17,379	6,535	4,119	3,967	14,621	6,482	3,812	3,574	13,868
Research and development	11,349	5,250	8,273	24,872	10,525	4,860	7,977	23,363	9,676	4,233	7,029	20,938
Sales and marketing	9,196	9,169	4,854	23,219	8,542	8,999	4,435	21,977	7,683	7,766	3,974	19,422
General and administration	2,676	1,781	1,047	5,504	2,629	1,746	1,018	5,393	2,434	1,653	937	5,024
Infrastructure	1,732	855	501	3,087	1,584	788	454	2,827	1,535	783	425	2,743
<b>SAP Group (December 31)</b>	<b>38,357</b>	<b>25,827</b>	<b>24,359</b>	<b>88,543</b>	<b>36,222</b>	<b>24,696</b>	<b>23,265</b>	<b>84,183</b>	<b>33,906</b>	<b>22,166</b>	<b>20,914</b>	<b>76,986</b>
Thereof acquisitions	149	133	7	289	37	172	0	209	73	0	0	73
<b>SAP Group (months' end average)</b>	<b>37,512</b>	<b>25,459</b>	<b>24,029</b>	<b>86,999</b>	<b>34,932</b>	<b>23,532</b>	<b>22,145</b>	<b>80,609</b>	<b>33,561</b>	<b>21,832</b>	<b>19,788</b>	<b>75,180</b>

Due to reorganizations within our Digital Business Services in 2017, employees were partially reallocated from cloud and software to services. Information for the current year is therefore not fully comparable to prior years.

share price and additional grants in 2017 under Move SAP. For more information about our share-based payments, see [Note \(27\)](#).

## Allocation of Share-Based Payment Expense

The operating cost line items in our income statement include the following share-based payment expenses:

### Share-Based Payments

€ millions	2017	2016	2015
Cost of cloud and software	115	89	74
Cost of services	158	101	113
Research and development	269	190	166
Sales and marketing	442	292	260
General and administration	135	113	111
<b>Share-based payments</b>	<b>1,120</b>	<b>785</b>	<b>724</b>
Thereof cash-settled share-based payments	963	678	637
Thereof equity-settled share-based payments	157	107	87

The increase in share-based payment expenses in 2017 compared to the prior year is mainly due to an increase in SAP's

## (8) Other Non-Operating Income/Expense, Net

### Other Non-Operating Income/Expense, Net

€ millions	2017	2016	2015
Foreign currency exchange gain/loss, net	-12	-210	-230
Thereof from financial assets/liabilities at fair value through profit or loss	180	-38	-12
Thereof from loans and receivables	96	26	-213
Thereof from financial liabilities at amortized cost	-317	-174	-2
Miscellaneous income/expense, net	-24	-23	-26
<b>Other non-operating income/expense, net</b>	<b>-36</b>	<b>-234</b>	<b>-256</b>

## (9) Financial Income, Net

### Financial Income, Net

€ millions	2017	2016	2015
<b>Finance income</b>	<b>463</b>	<b>230</b>	<b>241</b>
Thereof available-for-sale financial assets (equity)	382	164	176
<b>Finance costs</b>	<b>-278</b>	<b>-268</b>	<b>-246</b>
Thereof interest expense from financial liabilities at amortized cost	-89	-108	-135
Thereof interest expense from derivatives	-116	-114	-72
<b>Financial income, net</b>	<b>185</b>	<b>-38</b>	<b>-5</b>

The increase in financial income in 2017 is mainly due to higher gains from the disposal of equity instruments by our Sapphire investment funds.

## (10) Income Taxes

On December 22, 2017, a comprehensive U.S. tax reform, the Tax Cuts and Jobs Act, was enacted. As a result, deferred tax assets and liabilities as at December 31, 2017, were remeasured using the reduced U.S. federal corporate income tax rate of 21% (previously 35%). Besides that, the one-time transition tax for the mandatory income inclusion on accumulated foreign earnings was taken into account.

## Tax Expense According to Region

€ millions	2017	2016	2015
<b>Current tax expense</b>			
Germany	922	853	859
Foreign	716	537	408
<b>Total current tax expense</b>	<b>1,638</b>	<b>1,390</b>	<b>1,267</b>
<b>Deferred tax income</b>			
Germany	-584	-38	-74
Foreign	-84	-123	-258
<b>Total deferred tax income</b>	<b>-668</b>	<b>-161</b>	<b>-332</b>
<b>Total income tax expense</b>	<b>970</b>	<b>1,229</b>	<b>935</b>

## Major Components of Tax Expense

€ millions	2017	2016	2015
<b>Current tax expense/income</b>			
Tax expense for current year	1,623	1,412	1,278
Taxes for prior years	15	-22	-11
<b>Total current tax expense</b>	<b>1,638</b>	<b>1,390</b>	<b>1,267</b>
<b>Deferred tax expense/income</b>			
Origination and reversal of temporary differences	-891	-403	-428
Unused tax losses, research and development tax credits, and foreign tax credits	223	242	96
<b>Total deferred tax income</b>	<b>-668</b>	<b>-161</b>	<b>-332</b>
<b>Total income tax expense</b>	<b>970</b>	<b>1,229</b>	<b>935</b>

The increase in current tax expense and deferred tax income mainly results from an intra-group transfer of intellectual property rights to SAP SE.

Total deferred tax income includes a benefit of €227 million (2016: expense of €3 million; 2015: expense of €12 million) related to changes in tax laws and tax rates, mainly due to the U.S. tax reform.

Total deferred tax income also includes an expense of €120 million (2016: benefit of €8 million; 2015: benefit of €11 million) related to the write-down of previously recognized deferred tax assets which are partly offset by the reversal of a previous write-down of deferred tax assets.

## Profit Before Tax

€ millions	2017	2016	2015
Germany	2,785	3,109	3,161
Foreign	2,241	1,754	830
<b>Total</b>	<b>5,026</b>	<b>4,863</b>	<b>3,991</b>

The following table reconciles the expected income tax expense, computed by applying our combined German tax rate of 26.4% (2016: 26.4%; 2015: 26.4%), to the actual income tax expense. Our 2017 combined German tax rate includes a corporate income tax rate of 15.0% (2016: 15.0%; 2015: 15.0%), plus a solidarity surcharge of 5.5% (2016: 5.5%; 2015: 5.5%) thereon, and trade taxes of 10.6% (2016: 10.6%; 2015: 10.6%).

## Relationship Between Tax Expense and Profit Before Tax

€ millions, unless otherwise stated	2017	2016	2015
<b>Profit before tax</b>	<b>5,026</b>	<b>4,863</b>	<b>3,991</b>
Tax expense at applicable tax rate of 26.4% (2016: 26.4%; 2015: 26.4%)	1,326	1,284	1,055
Tax effect of:			
Foreign tax rates	-402	-105	-126
Changes in tax laws and tax rates	-212	3	12
Non-deductible expenses	82	78	61
Tax exempt income	-95	-106	-103
Withholding taxes	131	112	115
Research and development and foreign tax credits	-26	-36	-31
Prior-year taxes	-39	-43	-55
Reassessment of deferred tax assets, research and development tax credits, and foreign tax credits	185	43	43
Other	20	-1	-36
<b>Total income tax expense</b>	<b>970</b>	<b>1,229</b>	<b>935</b>
<b>Effective tax rate (in %)</b>	<b>19.3</b>	<b>25.3</b>	<b>23.4</b>

## Recognized Deferred Tax Assets and Liabilities

€ millions	2017	2016
<b>Deferred tax assets</b>		
Intangible assets	563	81
Property, plant, and equipment	10	32
Other financial assets	12	18
Trade and other receivables	57	72
Pension provisions	112	108
Share-based payments	164	207
Other provisions and obligations	408	517
Deferred income	77	118
Carryforwards of unused tax losses	187	378
Research and development and foreign tax credits	166	235
Other	75	102
<b>Total deferred tax assets</b>	<b>1,831</b>	<b>1,868</b>
<b>Deferred tax liabilities</b>		
Intangible assets	617	1,162
Property, plant, and equipment	92	66
Other financial assets	104	158
Trade and other receivables	125	125
Pension provisions	9	7
Share-based payments	1	3
Other provisions and obligations	29	122
Deferred income	22	39
Other	50	26
<b>Total deferred tax liabilities</b>	<b>1,049</b>	<b>1,708</b>
<b>Total deferred tax assets, net</b>	<b>782</b>	<b>160</b>

The increase in deferred tax assets for intangible assets mainly results from an intra-group transfer of intellectual property rights to SAP SE.

The decrease in deferred tax liabilities for intangible assets mainly results from the remeasurement due to the U.S. tax reform.



## Items Not Resulting in a Deferred Tax Asset

€ millions	2017	2016	2015
<b>Unused tax losses</b>			
Not expiring	375	338	279
Expiring in the following year	9	32	95
Expiring after the following year	535	649	704
<b>Total unused tax losses</b>	<b>919</b>	<b>1,019</b>	<b>1,078</b>
<b>Deductible temporary differences</b>	<b>524</b>	<b>33</b>	<b>122</b>
<b>Unused research and development and foreign tax credits</b>			
Not expiring	38	33	34
Expiring in the following year	2	1	0
Expiring after the following year	34	30	20
<b>Total unused tax credits</b>	<b>74</b>	<b>64</b>	<b>54</b>

€263 million (2016: €309 million; 2015: €429 million) of the unused tax losses relate to U.S. state tax loss carryforwards.

In 2017, subsidiaries that suffered a tax loss in either the current or the preceding period recognized deferred tax assets in excess of deferred tax liabilities amounting to €79 million (2016: €189 million; 2015: €129 million), because it is probable that sufficient future taxable profit will be available to allow the benefit of the deferred tax assets to be utilized.

We have not recognized a deferred tax liability on approximately €13.21 billion (2016: €10.81 billion) for undistributed profits of our subsidiaries, because we are in a position to control the timing of the reversal of the temporary difference and it is probable that such differences will not reverse in the foreseeable future.

## Total Income Taxes

€ millions	2017	2016	2015
Income taxes recorded in profit	970	1,229	935
Income taxes recorded in share premium	-4	-5	-14
Income taxes recorded in other comprehensive income that will not be reclassified to profit and loss			
Remeasurements on defined benefit pension plans	7	-2	-2
Income taxes recorded in other comprehensive income that will be reclassified to profit and loss			
Available-for-sale financial assets	-1	-1	2
Cash flow hedges	10	-4	4
Exchange differences	2	25	-16
<b>Total</b>	<b>984</b>	<b>1,242</b>	<b>909</b>

We are subject to ongoing tax audits by domestic and foreign tax authorities. Currently, we are in dispute mainly with the German and only a few foreign tax authorities. The German dispute is in respect of intercompany financing matters and certain secured capital investments, while the few foreign disputes are in respect of intercompany financing matters and the deductibility of intercompany royalty payments and intercompany services. In all cases, we expect that a favorable outcome can only be achieved through litigation. For all of these matters, we have not recorded a provision as we believe that the tax authorities' claims have no merit and that no adjustment is warranted. If, contrary to our view, the tax authorities were to prevail in their arguments before the court, we would expect to have an additional tax expense (including related interest expenses and penalties) of approximately €1,884 million (2016: €1,749 million) in total.

## (11) Earnings per Share

### Earnings per Share

€ millions, unless otherwise stated	2017	2016	2015
Profit attributable to equity holders of SAP SE	4,018	3,646	3,064
Issued ordinary shares <sup>1)</sup>	1,229	1,229	1,229
Effect of treasury shares <sup>1)</sup>	-31	-30	-32
Weighted average shares outstanding, basic <sup>1)</sup>	1,197	1,198	1,197
Dilutive effect of share-based payments <sup>1)</sup>	1	1	2
Weighted average shares outstanding, diluted <sup>1)</sup>	1,198	1,199	1,198
<b>Earnings per share, basic, attributable to equity holders of SAP SE (in €)</b>	<b>3.36</b>	<b>3.04</b>	<b>2.56</b>
<b>Earnings per share, diluted, attributable to equity holders of SAP SE (in €)</b>	<b>3.35</b>	<b>3.04</b>	<b>2.56</b>

<sup>1)</sup> Number of shares in millions

## (12) Other Financial Assets

### Other Financial Assets

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Loans and other financial receivables	793	260	1,054	834	266	1,100
Debt investments	39	0	39	195	0	195
Equity investments	0	827	827	1	952	953
Available-for-sale financial assets	39	827	865	196	952	1,148
Derivatives	158	36	194	94	102	196
Investments in associates	0	32	32	0	38	38
<b>Total</b>	<b>990</b>	<b>1,155</b>	<b>2,145</b>	<b>1,124</b>	<b>1,358</b>	<b>2,482</b>

### Loans and Other Financial Receivables

Loans and other financial receivables mainly consist of time deposits, investments in pension assets for which the corresponding liability is included in employee-related obligations (see [Note \(17c\)](#)), other receivables, and loans to employees and third parties. The major part of our loans and other financial receivables is concentrated in Germany.

As at December 31, 2017, there were no loans and other financial receivables past due but not impaired. We have no indications of impairments of loans and other financial receivables that are not past due and not impaired as at the reporting date. For general information about financial risk and the nature of risk, see [Note \(24\)](#).

### Available-for-Sale Financial Assets

Our available-for-sale financial assets consist of debt investments in bonds of mainly financial and non-financial corporations and municipalities, and equity investments in listed and unlisted securities, mainly held in the United States.

For more information about fair value measurement with regard to our equity investments, see [Note \(26\)](#).

### Derivatives

Detailed information about our derivative financial instruments is presented in [Note \(25\)](#).

## (13) Trade and Other Receivables

### Trade and Other Receivables

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Trade receivables, net	5,809	1	5,810	5,823	2	5,825
Other receivables	90	116	207	101	124	225
<b>Total</b>	<b>5,899</b>	<b>118</b>	<b>6,017</b>	<b>5,924</b>	<b>126</b>	<b>6,050</b>

### Carrying Amounts of Trade Receivables

€ millions	2017	2016
Gross carrying amount	6,047	6,114
Sales allowances charged to revenue	-163	-200
Allowance for doubtful accounts charged to expense	-74	-89
<b>Carrying amount trade receivables, net</b>	<b>5,810</b>	<b>5,825</b>

The changes in the allowances for doubtful accounts charged to expense were immaterial in all periods presented.

### Aging of Trade Receivables

€ millions	2017	2016
Not past due and not individually impaired	4,185	4,313
<b>Past due but not individually impaired</b>		
Past due 1 to 30 days	695	541
Past due 31 to 120 days	459	493
Past due 121 to 365 days	266	305
Past due over 365 days	95	84
<b>Total past due but not individually impaired</b>	<b>1,515</b>	<b>1,422</b>
Individually impaired, net of allowances	110	90
<b>Carrying amount of trade receivables, net</b>	<b>5,810</b>	<b>5,825</b>

For more information about financial risk and how we manage it, see [Notes \(24\)](#) and [\(25\)](#).

## (14) Other Non-Financial Assets

### Other Non-Financial Assets

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Prepaid expenses	264	123	387	257	107	364
Other tax assets	209	0	209	123	0	123
Capitalized contract cost	199	497	696	139	424	563
Miscellaneous other assets	54	0	54	62	0	62
<b>Total</b>	<b>725</b>	<b>621</b>	<b>1,346</b>	<b>581</b>	<b>532</b>	<b>1,113</b>

Prepaid expenses primarily consist of prepayments for operating leases, support services, and software royalties.

## (15) Goodwill and Intangible Assets

### Goodwill and Intangible Assets

€ millions	Goodwill	Software and Database Licenses	Acquired Technology/ IPRD	Customer Relationship and Other Intangibles	Total
<b>Historical cost</b>					
January 1, 2016	22,792	727	2,796	5,033	31,348
Foreign currency exchange differences	566	7	71	135	779
Additions from business combinations	57	0	41	22	120
Other additions	0	74	0	21	95
Retirements/disposals	0	-17	-1	-92	-110
<b>December 31, 2016</b>	<b>23,415</b>	<b>791</b>	<b>2,907</b>	<b>5,119</b>	<b>32,232</b>
Foreign currency exchange differences	-2,249	-22	-278	-523	-3,072
Additions from business combinations	208	0	51	73	332
Other additions	0	93	0	10	103
Retirements/disposals	0	-53	-688	-62	-803
<b>December 31, 2017</b>	<b>21,374</b>	<b>809</b>	<b>1,992</b>	<b>4,617</b>	<b>28,792</b>
<b>Accumulated amortization</b>					
January 1, 2016	103	526	1,812	1,938	4,379
Foreign currency exchange differences	1	5	54	59	119
Additions amortization	0	74	321	351	746
Retirements/disposals	0	-16	-1	-92	-109
<b>December 31, 2016</b>	<b>104</b>	<b>589</b>	<b>2,186</b>	<b>2,256</b>	<b>5,135</b>
Foreign currency exchange differences	-4	-16	-208	-219	-447
Additions amortization	0	79	254	327	660
Retirements/disposals	0	-51	-688	-58	-797
<b>December 31, 2017</b>	<b>100</b>	<b>601</b>	<b>1,544</b>	<b>2,306</b>	<b>4,551</b>
<b>Carrying amount</b>					
<b>December 31, 2016</b>	<b>23,311</b>	<b>202</b>	<b>721</b>	<b>2,863</b>	<b>27,097</b>
<b>December 31, 2017</b>	<b>21,274</b>	<b>208</b>	<b>448</b>	<b>2,311</b>	<b>24,241</b>

Other additions to software and database licenses in 2017 and 2016 were individually acquired from third parties and include cross-license agreements and patents.

## Significant Intangible Assets

€ millions, unless otherwise stated	Carrying Amount		Remaining Useful Life (in years)
	2017	2016	
Sybase – Customer relationships	226	325	4 to 6
SuccessFactors – Customer relationships	261	353	8
Ariba – Customer relationships	366	483	1 to 10
hybris – Customer relationships	83	106	10
Concur – Acquired technologies	261	296	4
Concur – Customer relationships	1,073	1,281	13 to 17
<b>Total significant intangible assets</b>	<b>2,270</b>	<b>2,844</b>	

## Goodwill Impairment Testing

SAP had two operating segments at the end of 2017. For more information about our segments, see [Note \(28\)](#).

The carrying amount of goodwill has been allocated for impairment testing purposes to those operating segments expected to benefit from goodwill.

### Goodwill by Operating Segment

€ millions	Applications, Technology & Services	SAP Business Network	Other	Total
December 31, 2016	15,839	7,439	34	<b>23,311</b>
<b>December 31, 2017</b>	<b>14,657</b>	<b>6,617</b>	<b>0</b>	<b>21,274</b>

The key assumptions on which management based its cash flow projections for the period covered by the underlying business plans are as follows:

Key Assumption	Basis for Determining Values Assigned to Key Assumption
Budgeted revenue growth	Revenue growth rate achieved in the current fiscal year, adjusted for an expected increase in SAP's addressable cloud and database markets; expected growth in the established software applications and analytics markets. Values assigned reflect our past experience and our expectations regarding an increase in the addressable markets.
Budgeted operating margin	Operating margin budgeted for a given budget period equals the operating margin achieved in the current fiscal year, increased by expected efficiency gains. Values assigned reflect past experience, except for efficiency gains.
Pre-tax discount rates	Our estimated cash flow projections are discounted to present value using pre-tax discount rates. Pre-tax discount rates are based on the weighted average cost of capital (WACC) approach.
Terminal growth rate	Our estimated cash flow projections for periods beyond the business plan were extrapolated using segment-specific terminal growth rates. These growth rates do not exceed the long-term average growth rates for the markets in which our segments operate.

## Key Assumptions and Detailed Planning Period

Percent, unless otherwise stated	Applications, Technology & Services		SAP Business Network	
	2017	2016	2017	2016
Budgeted revenue growth (average of the budgeted period)	4.8	6.7	14.9	15.0
Pre-tax discount rate	10.6	10.4	11.9	11.7
Terminal growth rate	2.9	2.0	3.0	3.0
Detailed planning period (in years)	3	4	9	9

### Applications, Technology & Services

The recoverable amount of the segment has been determined based on a value-in-use calculation. The calculation uses cash flow projections based on actual operating results and a group-wide business plan approved by management.

We believe that no reasonably possible change in any of the above key assumptions would cause the carrying amount of our Applications, Technology & Services segment to exceed the recoverable amount.

### SAP Business Network

The recoverable amount of the segment has been determined based on fair value less costs of disposal calculation. The fair value measurement was categorized as a level 3 fair value based on the inputs used in the valuation technique. The cash flow projections are based on actual operating results and specific

estimates covering a detailed planning period and the terminal growth rate thereafter. The projected results were determined based on management's estimates and are consistent with the assumptions a market participant would make. The segment operates in a relatively immature area with significant growth rates projected for the near future. We therefore have a longer and more detailed planning period than one would apply in a more mature segment.

We are using a target operating margin of 33% (2016: 34%) for the segment at the end of the budgeted period as a key assumption, which is within the range of expectations of market participants (for example, industry analysts).

The recoverable amount exceeds the carrying amount by €8,143 million (2016: €6,404 million).

The following table shows amounts by which the key assumptions would need to change individually for the recoverable amount to be equal to the carrying amount:

### Sensitivity to Change in Assumptions

	SAP Business Network	
	2017	2016
Budgeted revenue growth (change in percentage points)	-8.6	-6.9
Pre-tax discount rate (change in percentage points)	5.6	4.4
Target operating margin at the end of the budgeted period (change in percentage points)	-17	-15

## (16) Property, Plant, and Equipment

### Property, Plant, and Equipment

€ millions	Land and Buildings	Other Property, Plant, and Equipment	Advance Payments and Construction in Progress	Total
<b>Net Value</b>				
December 31, 2016	1,137	1,297	146	2,580
December 31, 2017	1,162	1,592	213	<b>2,967</b>

Total additions (other than from business combinations) amounted to €1,196 million (2016: €933 million) and relate primarily to the replacement and purchase of IT infrastructure (data centers, and so on).

## (17) Trade and Other Payables, Financial Liabilities, and Other Non-Financial Liabilities

### (17a) Trade and Other Payables

#### Trade and Other Payables

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Trade payables	952	0	952	1,015	0	1,015
Advance payments received	58	0	58	145	0	145
Miscellaneous other liabilities	141	119	260	120	127	247
<b>Trade and other payables</b>	<b>1,151</b>	<b>119</b>	<b>1,270</b>	<b>1,280</b>	<b>127</b>	<b>1,407</b>

Miscellaneous other liabilities mainly include deferral amounts for free rent periods and liabilities related to government grants.



## (17b) Financial Liabilities

### Financial Liabilities

€ millions	2017					2016				
	Nominal Volume		Carrying Amount			Nominal Volume		Carrying Amount		
	Current	Non-Current	Current	Non-Current	Total	Current	Non-Current	Current	Non-Current	Total
Bonds	1,150	4,000	1,149	3,997	5,147	1,000	5,150	996	5,151	6,147
Private placement transactions	125	965	125	1,005	1,130	420	1,240	418	1,298	1,717
Bank loans	24	0	24	0	24	16	0	16	0	16
<b>Financial debt</b>	<b>1,299</b>	<b>4,965</b>	<b>1,298</b>	<b>5,002</b>	<b>6,301</b>	<b>1,435</b>	<b>6,390</b>	<b>1,430</b>	<b>6,450</b>	<b>7,880</b>
Derivatives	NA	NA	57	29	86	NA	NA	152	43	194
Other financial liabilities	NA	NA	205	2	208	NA	NA	231	-12	219
<b>Financial liabilities</b>			<b>1,561</b>	<b>5,034</b>	<b>6,595</b>			<b>1,813</b>	<b>6,481</b>	<b>8,294</b>

Financial liabilities are unsecured, except for the retention of title and similar rights customary in our industry. Effective interest rates on our financial debt (including the effects from interest rate swaps) were 1.29% in 2017, 1.25% in 2016, and 1.30% in 2015.

For an analysis of the contractual cash flows of our financial liabilities based on maturity, see [Note \(24\)](#). For information about the risk associated with our financial liabilities, see [Note \(25\)](#). For information about fair values, see [Note \(26\)](#).

### Bonds

	Maturity	Issue Price	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	2017	2016
						Carrying Amount (in € millions)	Carrying Amount (in € millions)
Eurobond 2 – 2010	2017	99.780%	3.50% (fix)	3.59%	€500	0	496
Eurobond 6 – 2012	2019	99.307%	2.125% (fix)	2.29%	€750	768	776
Eurobond 7 – 2014	2018	100.000%	0.000% (var.)	0.08%	€750	750	749
Eurobond 8 – 2014	2023	99.478%	1.125% (fix)	1.24%	€1,000	995	994
Eurobond 9 – 2014	2027	99.284%	1.75% (fix)	1.86%	€1,000	991	990
Eurobond 10 – 2015	2017	100.000%	0.000% (var.)	0.11%	€500	0	500
Eurobond 11 – 2015	2020	100.000%	0.000% (var.)	0.07%	€650	649	648
Eurobond 12 – 2015	2025	99.264%	1.00% (fix)	1.13%	€600	594	594
Eurobond 13 – 2016	2018	100.000%	0.000% (var.)	0.03%	€400	400	400
<b>Eurobonds</b>						<b>5,147</b>	<b>6,147</b>

All of our Eurobonds are listed for trading on the Luxembourg Stock Exchange.

## Private Placement Transactions

	Maturity	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	2017	2016
					Carrying Amount (in € millions)	Carrying Amount (in € millions)
U.S. private placements						
Tranche 2 – 2010	2017	2.95% (fix)	3.03%	US\$200	0	189
Tranche 4 – 2011	2018	3.43% (fix)	3.50%	US\$150	125	141
Tranche 5 – 2012	2017	2.13% (fix)	2.16%	US\$242.5	0	229
Tranche 6 – 2012	2020	2.82% (fix)	2.86%	US\$290	241	278
Tranche 7 – 2012	2022	3.18% (fix)	3.22%	US\$444.5	382	439
Tranche 8 – 2012	2024	3.33% (fix)	3.37%	US\$323	289	334
Tranche 9 – 2012	2027	3.53% (fix)	3.57%	US\$100	93	107
<b>Private placements</b>					<b>1,130</b>	<b>1,717</b>

The U.S. private placement notes were issued by one of our subsidiaries that has the U.S. dollar as its functional currency.

## (17c) Other Non-Financial Liabilities

### Other Non-Financial Liabilities

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Share-based payment liabilities	815	340	1,154	602	309	911
Other employee-related liabilities	2,565	163	2,728	2,545	152	2,697
Other taxes	568	0	568	552	0	552
<b>Other non-financial liabilities</b>	<b>3,947</b>	<b>503</b>	<b>4,450</b>	<b>3,699</b>	<b>461</b>	<b>4,160</b>

For more information about our share-based payments, see [Note \(27\)](#).

Other employee-related liabilities mainly relate to vacation obligations, bonus and sales commission obligations, as well as employee-related social security obligations.

Other taxes mainly comprise payroll tax liabilities and value-added tax liabilities.

## (18) Provisions

### Provisions

€ millions	2017			2016		
	Current	Non-Current	Total	Current	Non-Current	Total
Pension plans and similar obligations (see <i>Note (18a)</i> )	0	136	136	0	140	140
Other provisions (see <i>Note (18b)</i> )	184	167	351	183	77	260
<b>Total</b>	<b>184</b>	<b>303</b>	<b>487</b>	<b>183</b>	<b>217</b>	<b>400</b>

## (18a) Pension Plans and Similar Obligations

### Defined Benefit Plans

The measurement dates for our domestic and foreign benefit plans are December 31.

### Present Value of the Defined Benefit Obligations (DBO) and the Fair Value of the Plan Assets

€ millions	Domestic Plans		Foreign Plans		Other Post-Employment Plans		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
<b>Present value of the DBO</b>	<b>857</b>	<b>854</b>	<b>382</b>	<b>369</b>	<b>118</b>	<b>98</b>	<b>1,357</b>	<b>1,321</b>
Thereof fully or partially funded plans	857	854	336	324	78	74	1,271	1,252
Thereof unfunded plans	0	0	46	45	40	24	86	69
<b>Fair value of the plan assets</b>	<b>848</b>	<b>843</b>	<b>319</b>	<b>290</b>	<b>56</b>	<b>48</b>	<b>1,223</b>	<b>1,181</b>
<b>Net defined benefit liability (asset)</b>	<b>9</b>	<b>11</b>	<b>63</b>	<b>79</b>	<b>62</b>	<b>50</b>	<b>134</b>	<b>140</b>
Amounts recognized in the Consolidated Statement of Financial Position:								
Non-current other financial assets	0	0	1	0	1	0	2	0
Non-current provisions	-9	-11	-64	-79	-63	-50	-136	-140

€794 million (2016: €789 million) of the present value of the DBO of our domestic plans relate to plans that provide for lump-sum payments not based on final salary, and €329 million (2016: €316 million) of the present value of the defined benefit obligations of our foreign plans relate to plans that provide for annuity payments not based on final salary.

The following weighted average assumptions were used for the actuarial valuation of our domestic and foreign pension liabilities as well as other post-employment benefit obligations as at the respective measurement date:

## Actuarial Assumptions

Percent	Domestic Plans			Foreign Plans			Other Post-Employment Plans		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Discount rate	2.3	2.1	2.7	0.8	0.6	0.7	3.9	4.0	4.0
Future salary increases	2.5	2.5	2.5	1.7	1.7	1.7	5.0	6.0	6.3
Future pension increases	2.0	2.0	2.0	0.1	0	0	0	0.0	0.0
Employee turnover	2.0	2.0	2.0	16.2	10.3	10.3	8.2	8.6	8.7
Inflation	2.0	2.0	2.0	1.4	1.4	1.4	1.0	1.1	1.0

The sensitivity analysis table shows how the present value of all defined benefit obligations would have been influenced by reasonably possible changes to above actuarial assumptions. The sensitivity analysis table presented below considers change

in discount rate assumption, holding all other actuarial assumptions constant. A reasonably possible change in all other actuarial assumptions would not materially influence the present value of all defined benefit obligations.

## Sensitivity Analysis

€ millions	Domestic Plans			Foreign Plans			Other Post-Employment Plans			Total		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
<b>Present value of all defined benefit obligations if:</b>												
Discount rate was 50 basis points higher	806	800	678	357	344	311	114	93	79	1,277	1,237	1,068
Discount rate was 50 basis points lower	912	913	775	411	398	359	123	101	87	1,446	1,412	1,221

## Total Expense of Defined Benefit Pension Plans

€ millions	Domestic Plans			Foreign Plans			Other Post-Employment Plans			Total		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Current service cost	11	7	10	22	21	21	15	10	9	48	38	40
Interest expense	18	19	17	2	3	3	4	3	3	24	25	23
Interest income	-18	-20	-17	-2	-2	-3	-2	-1	-2	-22	-23	-22
Past service cost	0	0	0	0	0	0	2	0	0	2	0	0
<b>Total expense</b>	<b>11</b>	<b>6</b>	<b>10</b>	<b>22</b>	<b>22</b>	<b>21</b>	<b>19</b>	<b>12</b>	<b>10</b>	<b>52</b>	<b>40</b>	<b>41</b>
Actual return on plan assets	-17	97	-76	19	1	0	3	2	2	5	100	-74

Our investment strategy on domestic benefit plans is to invest all contributions in stable insurance policies.

Our investment strategies for foreign benefit plans vary according to the conditions in the country in which the respective benefit plans are situated. Generally, a long-term investment horizon has been adopted for all major foreign

benefit plans. Although our policy is to invest in a risk-diversified portfolio consisting of a mix of assets, both the defined benefit obligation and plan assets can fluctuate over time, which exposes the Group to actuarial and market (investment) risks. Depending on the statutory requirements in each country, it might be necessary to reduce any underfunding by addition of liquid assets.

## Plan Asset Allocation

€ millions	2017		2016	
	Quoted in an Active Market	Not Quoted in an Active Market	Quoted in an Active Market	Not Quoted in an Active Market
<b>Asset category</b>				
Equity investments	105	0	118	0
Corporate bonds	122	0	90	0
Government bonds	10	0	5	0
Real estate	54	0	49	0
Insurance policies	5	873	0	864
Cash and cash equivalents	9	0	11	0
Others	45	0	44	0
<b>Total</b>	<b>350</b>	<b>873</b>	<b>317</b>	<b>864</b>

Our expected contribution in 2018 to our domestic and foreign defined benefit pension plans is immaterial. The weighted duration of our defined benefit plans amounted to 13 years as at December 31, 2017, and 14 years as at December 31, 2016.

Total future benefit payments from our defined benefit plans as at December 31, 2017, are expected to be €1,670 million (2016: €1,583 million). Of this amount, 80% has maturities of over five years, and 68% relates to domestic plans.

### Defined Contribution Plans/State Plans

We also maintain domestic and foreign defined contribution plans. Amounts contributed by us under such plans are based

on a percentage of the employees' salaries or on the amount of contributions made by employees. Furthermore, in Germany and some other countries, we make contributions to public pension plans that are operated by national or local government or a similar institution.

### Total Expense of Defined Contribution Plans and State Plans

€ millions	2017	2016	2015
Defined contribution plans	260	234	218
State plans	527	484	429
<b>Total expense</b>	<b>787</b>	<b>718</b>	<b>647</b>

## (18b) Other Provisions

### Other Provisions

€ millions	1/1/2017	Addition	Accretion	Utilization	Release	Currency Impact	12/31/2017
Employee-related provisions	74	160	0	-42	-1	-3	188
Customer-related provisions	96	48	0	-77	-5	-5	57
Restructuring provisions	49	182	0	-163	0	0	68
Miscellaneous other provisions	41	0	1	-2	0	-2	38
<b>Total other provisions</b>	<b>260</b>	<b>390</b>	<b>1</b>	<b>-284</b>	<b>-6</b>	<b>-10</b>	<b>351</b>

Employee-related provisions primarily comprise obligations for time credits, severance payments, jubilee expenses, and semiretirement. The increase in the employee-related provisions mainly results from restructuring-related termination benefits which were transformed into time credits. While most of these employee-related provisions could be claimed within the next 12 months, we do not expect the related cash outflows within this time period.

Customer-related provisions mainly include expected contract losses. The associated cash outflows are substantially short-term in nature. Furthermore, obligations resulting from customer-related litigation and claims are included. The related cash outflows are uncertain.

For more information about our restructuring plans, see [Note \(6\)](#). Restructuring provisions comprise contract

termination costs, including those relating to the termination of lease contracts. The cash outflows associated with employee-related restructuring costs are substantially short-term in nature. Utilization of the portion of the facility-related restructuring provisions depends on the remaining term of the associated lease.

Miscellaneous other provisions comprise intellectual property-related provisions which relate to litigation matters further described in *Note (23)*, as well as facility-related onerous contract provisions and renovation and restoration obligations. The timing of the associated cash outflows is dependent on the remaining term of the underlying contract.

## (19) Deferred Income

Deferred income consists mainly of prepayments made by our customers for cloud subscriptions and support; software support and services; fees from multiple-element arrangements allocated to undelivered elements; and amounts recorded in purchase accounting at fair value for obligations to perform under acquired customer contracts in connection with acquisitions.

## (20) Total Equity

### Issued Capital

SAP SE has issued no-par value bearer shares with a calculated nominal value of €1 per share. All of the shares issued are fully paid.

### Number of Shares

millions	Issued Capital	Treasury Shares
<b>January 1, 2015</b>	<b>1,229</b>	<b>-33</b>
Reissuance of treasury shares under share-based payments	0	2
<b>December 31, 2015</b>	<b>1,229</b>	<b>-31</b>
Reissuance of treasury shares under share-based payments	0	1
<b>December 31, 2016</b>	<b>1,229</b>	<b>-30</b>
Purchase of treasury shares	0	-5
Reissuance of treasury shares under share-based payments	0	0
<b>December 31, 2017</b>	<b>1,229</b>	<b>-35</b>

### Authorized Shares

The Articles of Incorporation authorize the Executive Board to increase the issued capital as follows:

- By up to a total amount of €250 million by issuing new no-par value bearer shares against contributions in cash until May 19, 2020 (Authorized Capital I). The issuance is subject to the statutory subscription rights of existing shareholders.
- By up to a total amount of €250 million by issuing new no-par value bearer shares against contributions in cash or in kind until May 19, 2020 (Authorized Capital II). Subject to the consent of the Supervisory Board, the Executive Board is authorized to exclude the shareholders' statutory subscription rights in certain cases.

### Contingent Shares

SAP SE's share capital is subject to a contingent capital increase which may be effected only to the extent that the holders or creditors of convertible bonds or stock options issued or guaranteed by SAP SE or any of its directly or indirectly controlled subsidiaries under certain share-based payments exercise their conversion or subscription rights, and no other methods for servicing these rights are used. As at December 31, 2017, €100 million, representing 100 million shares, was still available for issuance (2016: €100 million).

## Other Components of Equity

€ millions	Exchange Differences	Available-for-Sale Financial Assets	Cash Flow Hedges	Total
<b>January 1, 2015</b>	<b>362</b>	<b>211</b>	<b>-8</b>	<b>564</b>
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	1,861	125	11	1,997
<b>December 31, 2015</b>	<b>2,222</b>	<b>336</b>	<b>3</b>	<b>2,561</b>
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	839	-43	-11	785
<b>December 31, 2016</b>	<b>3,062</b>	<b>292</b>	<b>-8</b>	<b>3,345</b>
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	-2,732	-135	29	-2,838
<b>December 31, 2017</b>	<b>330</b>	<b>157</b>	<b>21</b>	<b>508</b>

## Treasury Shares

By resolution of SAP SE's General Meeting of Shareholders held on June 4, 2013, the authorization granted by the General Meeting of Shareholders on June 8, 2010, regarding the acquisition of treasury shares was revoked to the extent it had not been exercised at that time, and replaced by a new authorization of the Executive Board of SAP SE to acquire, on or before June 3, 2018, shares of SAP SE representing a pro rata amount of capital stock of up to €120 million in aggregate, provided that the shares purchased under the authorization, together with any other shares in the Company previously acquired and held by, or attributable to, SAP SE do not account for more than 10% of SAP SE's issued share capital. Based on this authorization, we bought back five million of our shares in the total amount of €500 million in 2017. Although treasury shares are legally considered outstanding, there are no dividend or voting rights associated with shares held in treasury. We may redeem or resell shares held in treasury, or we may use treasury shares for the purpose of servicing option or conversion rights under the Company's share-based payment plans. Also, we may use shares held in treasury as consideration in connection with mergers with, or acquisitions of, other companies.

## Dividends

The total dividend available for distribution to SAP SE shareholders is based on the profits of SAP SE as reported in its

statutory financial statements prepared under the accounting rules in the German Commercial Code (*Handelsgesetzbuch*). For the year ended December 31, 2017, the Executive Board intends to propose that a dividend of €1.40 per share (that is, an estimated total dividend of €1,671 million), be paid from the profits of SAP SE.

Dividends per share for 2016 and 2015 were €1.25 and €1.15 respectively and were paid in the succeeding year.

## (21) Additional Capital Disclosures

### Capital Structure Management

The primary objective of our capital structure management is to maintain a strong financial profile for investor, creditor, and customer confidence, and to support the growth of our business. We seek to maintain a capital structure that will allow us to cover our funding requirements through the capital markets at reasonable conditions, and in so doing, ensure a high level of independence, confidence, and financial flexibility.

SAP SE's long-term credit rating is "A2" by Moody's with stable outlook, and "A" by Standard & Poor's with positive outlook.

## Capital Structure

	12/31/2017		12/31/2016		Δ in %
	€ millions	% of Total Equity and Liabilities	€ millions	% of Total Equity and Liabilities	
Equity	25,540	60	26,397	60	-3
Current liabilities	10,210	24	9,674	22	6
Non-current liabilities	6,747	16	8,205	19	-18
Liabilities	16,958	40	17,880	40	-5
<b>Total equity and liabilities</b>	<b>42,497</b>	<b>100</b>	<b>44,277</b>	<b>100</b>	<b>-4</b>

In 2017, we repaid €1,000 million in Eurobonds and US\$442.5 million in U.S. private placements at maturity. Thus, the ratio of total financial debt to total equity and liabilities decreased by three percentage points to 15% at the end of 2017 (18% as at December 31, 2016).

Total financial debt consists of current and non-current bank loans, bonds, and private placements. The changes in our financial debts are reconciled to the cash flows from liabilities arising from financing activities below. For more information about our financial debt, see [Note \(17\)](#).

### Reconciliation of Liabilities Arising from Financing Activities

€ millions	12/31/2016	Cash Flows	Business Combinations	Foreign Currency	Fair Value Changes	Other	12/31/2017
Current financial debt	-1,435	1,372	1	54	0	-1,290	-1,299
Non-current financial debt	-6,390	-8	0	144	0	1,289	-4,965
<b>Financial debt (nominal volume)</b>	<b>-7,826</b>	<b>1,364</b>	<b>1</b>	<b>197</b>	<b>0</b>	<b>-1</b>	<b>-6,264</b>
Basis adjustment	-86	0	0	-7	31	0	-62
Transaction costs	32	0	0	0	0	-7	26
<b>Financial debt (carrying amount)</b>	<b>-7,880</b>	<b>1,364</b>	<b>1</b>	<b>191</b>	<b>31</b>	<b>-7</b>	<b>-6,301</b>
Accrued interest	-45	0	0	2	0	9	-34
Assets held to hedge financial debt	47	0	0	1	-24	0	24
<b>Total liabilities from financing activities</b>	<b>-7,878</b>	<b>1,364</b>	<b>1</b>	<b>194</b>	<b>7</b>	<b>2</b>	<b>-6,311</b>

### Reconciliation of Liabilities Arising from Financing Activities

€ millions	12/31/2015	Cash Flows	Business Combinations	Foreign Currency	Fair Value Changes	Other	12/31/2016
Current financial debt	-567	547	-6	4	0	-1,413	-1,435
Non-current financial debt	-8,607	852	-2	-46	0	1,413	-6,390
<b>Financial debt (nominal volume)</b>	<b>-9,175</b>	<b>1,400</b>	<b>-8</b>	<b>-42</b>	<b>0</b>	<b>0</b>	<b>-7,826</b>
Basis adjustment	-64	0	0	5	-27	0	-86
Transaction costs	44	0	0	0	0	-11	32
<b>Financial debt (carrying amount)</b>	<b>-9,195</b>	<b>1,400</b>	<b>-8</b>	<b>-37</b>	<b>-27</b>	<b>-11</b>	<b>-7,880</b>
Accrued interest	-45	0	0	1	0	-1	-45
Assets held to hedge financial debt	100	-43	0	-3	-6	0	47
<b>Total liabilities from financing activities</b>	<b>-9,141</b>	<b>1,357</b>	<b>-8</b>	<b>-40</b>	<b>-33</b>	<b>-12</b>	<b>-7,878</b>



While we continuously monitor the ratios presented in and below the capital structure table above, we actively manage our liquidity and structure of our financial indebtedness based on the ratios group liquidity and net liquidity.

### Group Liquidity

€ millions	2017	2016	Δ
Cash and cash equivalents	4,011	3,702	309
Current investments	774	971	-196
<b>Group liquidity</b>	<b>4,785</b>	<b>4,673</b>	<b>112</b>
Current financial debt	-1,299	-1,435	136
<b>Net liquidity 1</b>	<b>3,486</b>	<b>3,238</b>	<b>248</b>
Non-current financial debt	-4,965	-6,390	1,425
<b>Net liquidity 2</b>	<b>-1,479</b>	<b>-3,153</b>	<b>1,673</b>

### Distribution Policy

Our general intention is to remain in a position to return liquidity to our shareholders by distributing annual dividends totaling more than 40% (2016: 35%) of our profit after tax and by potentially repurchasing treasury shares in future.

In 2017, we distributed €1,499 million (€1.25 per share) in dividends for 2016 compared to €1,378 million paid in 2016 for 2015 and €1,316 million paid in 2015 for 2014. Aside from the distributed dividend, in 2017, we also returned €500 million to our shareholders by repurchasing treasury shares.

As a result of our equity-settled share-based payments transactions (as described in *Note (27)*), we have commitments to grant SAP shares to employees. We intend to meet these commitments by reissuing treasury shares or to fulfill these obligations through an agent who administers the equity-settled programs and therefor purchases shares on the open market.

### Maturities of Other Financial Commitments

€ millions	December 31, 2017		
	Operating Leases	Purchase Obligations	Investments in Venture Capital Funds
Due 2018	322	662	182
Due 2019 to 2022	778	386	0
Due thereafter	358	93	0
<b>Total</b>	<b>1,459</b>	<b>1,141</b>	<b>182</b>

## (22) Other Financial Commitments

### Other Financial Commitments

€ millions	2017	2016
<b>Operating leases</b>	<b>1,459</b>	<b>1,578</b>
Contractual obligations for acquisition of property, plant, and equipment and intangible assets	207	227
Other purchase obligations	934	650
<b>Purchase obligations</b>	<b>1,141</b>	<b>877</b>
<b>Investments in venture capital funds</b>	<b>182</b>	<b>167</b>
<b>Total</b>	<b>2,782</b>	<b>2,623</b>

Our operating leases relate primarily to the lease of office space, hardware, and vehicles, with remaining non-cancelable lease terms between less than one year and 31 years. On a limited scale, the operating lease contracts include escalation clauses (based, for example, on the consumer price index) and renewal options. The contractual obligations for acquisition of property, plant, and equipment and intangible assets relate primarily to the construction of new and existing facilities and to the purchase of hardware, software, patents, office equipment, and vehicles. The remaining obligations relate mainly to marketing, consulting, maintenance, license agreements, cloud services and other third-party agreements. Historically, the majority of such purchase obligations have been realized.

SAP invests and holds interests in other entities that manage investments in venture capital funds. On December 31, 2017, total commitments to make such investments amounted to €342 million (2016: €308 million), of which €161 million had been drawn (2016: €141 million). By investing in such venture capital funds, we are exposed to the risks inherent in the business areas in which the entities operate. Our maximum exposure to loss is the amount invested plus unavoidable future capital contributions.

Our rental and operating lease expenses were €532 million, €458 million, and €386 million for the years 2017, 2016, and 2015, respectively.

## (23) Litigation, Claims, and Legal Contingencies

We are subject to a variety of claims and lawsuits that arise from time to time in the ordinary course of our business, including proceedings and claims that relate to companies we have acquired, claims that relate to customers demanding indemnification for proceedings initiated against them based on their use of SAP software, and claims that relate to customers being dissatisfied with the products and services that we have delivered to them. We will continue to vigorously defend against all claims and lawsuits against us. We currently believe that resolving the claims and lawsuits pending as at December 31, 2017, will neither individually nor in the aggregate have a material adverse effect on our business, financial position, profit, or cash flows. The provisions recorded for these claims and lawsuits as at December 31, 2017, are neither individually nor in the aggregate material to SAP.

However, the outcome of litigation and claims is intrinsically subject to considerable uncertainty. Management's view of these matters may also change in the future. Actual outcomes of litigation and claims may differ from the assessments made by management in prior periods, which could result in a material impact on our business, financial position, profit, cash flows, or reputation. Most of the lawsuits and claims are of a very individual nature and claims are either not quantified by the claimants or the claim amounts quantified are, based on historical evidence, not expected to be a good proxy for the expenditure that would be required to settle the case concerned. The specifics of the jurisdictions where most of the claims are located further impair the predictability of the outcome of the cases. Therefore, it is not practicable to reliably estimate the financial effect that these lawsuits and claims would have if SAP were to incur expenditure for these cases.

Among the claims and lawsuits are the following classes:

### Intellectual Property-Related Litigation and Claims

Intellectual property-related litigation and claims are cases in which third parties have threatened or initiated litigation claiming that SAP violates one or more intellectual property rights that they possess. Such intellectual property rights may include patents, copyrights, and other similar rights.

The carrying amount of the provisions recognized for intellectual property-related litigation and claims and the change in the carrying amount in the reporting period are disclosed in

*Note (18b)*. The expected timing of any resulting outflows of economic benefits from these lawsuits and claims is uncertain and not estimable, as it depends generally on the duration of the legal proceedings and settlement negotiations required to resolve them. Uncertainties about the amounts result primarily from the unpredictability of the outcomes of legal disputes in several jurisdictions. For more information, see *Note (3c)*.

Contingent liabilities exist from intellectual property-related litigation and claims for which no provision has been recognized. Generally, it is not practicable to estimate the financial impact of these contingent liabilities due to the uncertainties around the litigation and claims, as outlined above. The total amounts claimed by plaintiffs in those intellectual property-related lawsuits or claims in which a claim has been quantified were not material to us as at December 31, 2017 and 2016. Based on our past experience, most of the intellectual property-related litigation and claims tend to be either dismissed in court or settled out of court for amounts significantly below the originally claimed amounts and not material to our consolidated financial statements.

Individual cases of intellectual property-related litigation and claims include the following:

In February 2010, United States-based TecSec, Inc. (TecSec) instituted legal proceedings in the United States against SAP (including its subsidiary Sybase) and many other defendants. TecSec alleged that SAP's and Sybase's products infringe one or more of the claims in five patents held by TecSec. In its complaint, TecSec seeks unspecified monetary damages and permanent injunctive relief. The lawsuit is proceeding but only with respect to one defendant. The trial for SAP (including its subsidiary Sybase) has not yet been scheduled – the lawsuit for SAP (including its subsidiary Sybase) remains stayed.

In 2008, Wellogix, Inc. asserted trade secret misappropriation claims against SAP in U.S. federal court. Those claims were dismissed based on improper venue. In April 2010, SAP instituted legal proceedings (a declaratory judgment action) in the United States against Wellogix, Inc. and Wellogix Technology Licensing, LLC. The lawsuit sought a declaratory judgment that six patents owned by Wellogix were invalid or not infringed by SAP. The legal proceedings were stayed pending the outcome of six reexaminations filed by SAP with the United States Patent and Trademark Office (USPTO). All six reexaminations were decided in SAP's favor, the decisions were upheld on appeal, and the case has been dismissed. Wellogix re-asserted trade secret misappropriation claims against SAP. The court granted SAP's motion to dismiss based on improper venue for litigating the trade secret claims in the U.S. and Wellogix appealed that decision. The appeal was decided in SAP's favor and the claim was dismissed. In February 2015, SAP filed a declaratory judgment action in Frankfurt/Main, Germany, asking the German court to rule that SAP did not misappropriate any

Wellogix trade secrets. That court likewise ruled in SAP's favor and Wellogix has appealed that decision. The appeal is expected to conclude in 2018.

## Customer-Related Litigation and Claims

Customer-related litigation and claims include cases in which we indemnify our customers against liabilities arising from a claim that our products infringe a third party's patent, copyright, trade secret, or other proprietary rights. Occasionally, consulting or software implementation projects result in disputes with customers. Where customers are dissatisfied with the products and services that we have delivered to them in routine consulting contracts or development arrangements, we may grant functions or performance guarantees.

The carrying amount of the provisions recorded for customer-related litigation and claims and the development of the carrying amount in the reporting period are disclosed in *Note (18b)*. The expected timing or amounts of any resulting outflows of economic benefits from these lawsuits and claims is uncertain and not estimable, as they generally depend on the duration of the legal proceedings and settlement negotiations required to resolve the litigation and claims and the unpredictability of the outcomes of legal disputes in several jurisdictions. For more information, see *Note (3c)*.

Contingent liabilities exist from customer-related litigation and claims for which no provision has been recognized. Generally, it is not practicable to estimate the financial impact of these contingent liabilities due to the uncertainties around these lawsuits and claims outlined above.

## Tax-Related Litigation and Claims

We are subject to ongoing audits by domestic and foreign tax authorities. In respect of non-income taxes, we, like many other companies operating in Brazil, are involved in various proceedings with Brazilian tax authorities regarding assessments and litigation matters on intercompany royalty payments and intercompany services. The total potential amount in dispute related to these matters for all applicable years is approximately €102 million (2016: €106 million). We have not recorded a provision for these matters, as we believe that we will prevail.

For information about income tax-related litigation, see *Note (10)*.

## Legal Contingencies

SAP received communications alleging conduct that may violate anti-bribery laws (including the U.S. Foreign Corrupt Practices Act (FCPA)). The Legal Compliance and Integrity Office of SAP is conducting investigations with the assistance of an external law firm and voluntarily advised local authorities as well as the U.S.

Securities and Exchange Commission (U.S. SEC) and the U.S. Department of Justice (U.S. DOJ). The investigations and dialogue with the local authorities and the U.S. SEC and U.S. DOJ are ongoing. SAP is cooperating with both the external law firm engaged for the investigation and the authorities.

The alleged conduct may result in monetary penalties or other sanctions under the FCPA and/or other anti-bribery laws. In addition, SAP's ability to conduct business in certain jurisdictions could be negatively impacted. Given the early stage of the comprehensive and exhaustive investigations and the corresponding remediation activities, and considering the complexity of individual factors and the large number of open questions, it is impossible at this point in time to assess the risks.

We are implementing enhancements to our anti-corruption compliance program, including guidance and policy changes as well as additional internal controls related to compliance with international anti-bribery laws, and additional compliance staff. We continue to be fully committed to FCPA and other anti-bribery law compliance.

Furthermore, we are investigating allegations regarding conduct that certain independent SAP partners violated SAP contractual terms and sold SAP products and services in embargoed countries. These SAP partners presumably did not adhere to SAP's strict procedures for indirect business activities. To the extent any company independent from SAP chooses not to follow SAP's licensing procedures, SAP is ultimately limited in its ability to stop their activities. SAP devotes considerable resources to prevent and mitigate such activities should they occur. We are also investigating allegations regarding direct sales between SAP and certain customers, who may have engaged in unauthorized activities in embargoed countries. The investigations are being conducted by SAP's Legal Compliance and Integrity Office with the assistance of an external law firm.

In this context, SAP voluntarily self-disclosed potential export controls and economic sanctions violations to the U.S. Department of Justice and the U.S. Department of Treasury's Office of Foreign Assets Control (OFAC) in September 2017. At the same time, SAP provided notification to the U.S. Securities and Exchange Commission (U.S. SEC) and responded to an SEC comment letter on export restriction matters in October 2017. SAP has also provided disclosure to the U.S. Department of Commerce's Bureau of Industry and Security (BIS) based on the same alleged facts. Finally, pursuant to Section 219 of the U.S. Iran Threat Reduction and Syria Human Rights Act of 2012 and Section 13(r) of the U.S. Securities Exchange Act of 1934, SAP has filed the required Iran Notice with the SEC.

As a reaction to preliminary findings, SAP has taken remedial actions to terminate access to SAP products and services for certain end users and block additional business activities with these end users through SAP or SAP partners. We are

implementing enhancements to our export control compliance program, including adding further capacity to the Export Control Compliance team with a particular focus on high-risk countries.

Given the early stage of the comprehensive and exhaustive investigations and the corresponding remediation activities, and considering the complexity of individual factors and the large number of open questions, it is impossible at this point in time to assess the risks.

For the reasons outlined above, it is impossible at this point in time to determine whether the potential anti-bribery law violations and the potential export restriction violations represent present obligations of SAP and, if so, to reliably estimate the amount of these obligations. As a consequence, no provisions have been recognized for these potential violations in our consolidated financial statements 2017. It is also not practicable to estimate the financial effect of any contingent liabilities that may result from these potential violations.

## (24) Financial Risk Factors

We are exposed to various financial risks, such as market risks (including foreign currency exchange rate risk, interest rate risk, and equity price risk), credit risk, and liquidity risk.

### Market Risk

#### a) Foreign Currency Exchange Rate Risk

As we are active worldwide, our ordinary operations are subject to risks associated with fluctuations in foreign currencies. Since the Group's entities mainly conduct their operating business in their own functional currencies, our risk of exchange rate

#### b) Interest Rate Risk

We are exposed to economic interest rate risk as a result of our investing and financing activities mainly in euros and U.S. dollars.

fluctuations from ongoing ordinary operations is not considered significant. However, we occasionally generate foreign currency-denominated receivables, payables, and other monetary items by transacting in a currency other than the functional currency. To mitigate the extent of the associated foreign currency exchange rate risk, the majority of these transactions are hedged as described in [Note \(25\)](#).

In rare circumstances, transacting in a currency other than the functional currency also leads to embedded foreign currency derivatives being separated and measured at fair value through profit or loss.

In addition, the intellectual property (IP) holders in the SAP Group are exposed to risks associated with forecasted intercompany cash flows in foreign currencies. These cash flows arise out of royalty payments from subsidiaries to the respective IP holder. The royalties are linked to the subsidiaries' external revenue. This arrangement leads to a concentration of the foreign currency exchange rate risk with the IP holders, as the royalties are mostly denominated in the subsidiaries' local currencies, while the functional currency of the IP holders with the highest royalty volume is the euro. The highest foreign currency exchange rate exposure of this kind relates to the currencies of subsidiaries with significant operations, for example the U.S. dollar, the pound sterling, the Japanese yen, the Swiss franc, and the Australian dollar.

Generally, we are not exposed to any significant foreign currency exchange rate risk with regard to our investing and financing activities, as such activities are normally conducted in the functional currency of the investing or borrowing entity. For more information, see [Note \(25\)](#).

€ millions	2017		2016	
	Cash Flow Risk	Fair Value Risk	Cash Flow Risk	Fair Value Risk
Investing activities	3,800	985	3,308	1,364
Financing activities	1,815	4,486	2,313	5,567

#### c) Equity Price Risk

We are exposed to equity price risk with regard to our investments in equity securities (2017: €827 million; 2016: €952 million) and our share-based payments (for the exposure from these plans, see [Note \(27\)](#)).

## Credit Risk

To reduce the credit risk in investments, we arrange to receive rights to collateral for certain investing activities in the full amount of the investment volume, which we would be allowed to make use of only in the case of default of the counterparty to the investment. In the absence of other significant agreements to reduce our credit risk exposure, the total amounts recognized as cash and cash equivalents, current investments, loans and other financial receivables, trade receivables, and derivative financial assets represent our maximum exposure to credit risks, except for the agreements mentioned above.

## Liquidity Risk

The table below is an analysis of the remaining contractual maturities of all our financial liabilities held as at December 31, 2017. Financial liabilities for which repayment can be requested by the contract partner at any time are assigned to the earliest possible period. Variable interest payments were calculated using the latest relevant interest rate fixed as at December 31, 2017. As we generally settle our derivative contracts gross, we show the pay and receive legs separately for all our currency and interest rate derivatives, whether or not the fair value of the derivative is negative. The cash outflows for the currency derivatives are translated using the applicable spot rate.

For more information about the cash flows for unrecognized but contractually agreed financial commitments, see [Note \(22\)](#).

### Contractual Maturities of Non-Derivative Financial Liabilities

€ millions	Carrying Amount	Contractual Cash Flows					
		12/31/2017	2018	2019	2020	2021	2022
Trade payables	-952	-952	0	0	0	0	0
Financial liabilities	-6,508	-1,554	-834	-957	-58	-429	-3,102
<b>Total of non-derivative financial liabilities</b>	<b>-7,460</b>	<b>-2,506</b>	<b>-834</b>	<b>-957</b>	<b>-58</b>	<b>-429</b>	<b>-3,102</b>

€ millions	Carrying Amount	Contractual Cash Flows					
		12/31/2016	2017	2018	2019	2020	2021
Trade payables	-1,016	-1,016	0	0	0	0	0
Financial liabilities	-8,099	-1,739	-1,371	-835	-995	-62	-3,639
<b>Total of non-derivative financial liabilities</b>	<b>-9,115</b>	<b>-2,755</b>	<b>-1,371</b>	<b>-835</b>	<b>-995</b>	<b>-62</b>	<b>-3,639</b>

## Contractual Maturities of Derivative Financial Liabilities and Financial Assets

€ millions	Carrying Amount	Contractual Cash Flows		Carrying Amount	Contractual Cash Flows	
	12/31/2017	2018	Thereafter	12/31/2016	2017	Thereafter
<b>Derivative financial liabilities</b>						
Currency derivatives not designated as hedging instruments	-84			-170		
Cash outflows		-3,909	-309		-3,160	-43
Cash inflows		3,857	292		3,025	0
Currency derivatives designated as hedging instruments	-1			-24		
Cash outflows		-75	0		-475	0
Cash inflows		74	0		442	0
Interest rate derivatives designated as hedging instruments	-1			0		
Cash outflows		-8	-15		0	0
Cash inflows		8	14		0	0
<b>Total of derivative financial liabilities</b>	<b>-86</b>	<b>-53</b>	<b>-18</b>	<b>-194</b>	<b>-168</b>	<b>-43</b>
<b>Derivative financial assets</b>						
Currency derivatives not designated as hedging instruments	41			35		
Cash outflows		-2,799	0		-1,902	0
Cash inflows		2,831	0		1,938	0
Currency derivatives designated as hedging instruments	29			12		
Cash outflows		-634	0		-241	0
Cash inflows		654	0		252	0
Interest rate derivatives designated as hedging instruments	24			47		
Cash outflows		-12	-43		-38	-83
Cash inflows		25	56		62	112
<b>Total of derivative financial assets</b>	<b>93</b>	<b>65</b>	<b>13</b>	<b>95</b>	<b>71</b>	<b>29</b>
<b>Total of derivative financial liabilities and assets</b>	<b>8</b>	<b>12</b>	<b>-5</b>	<b>-99</b>	<b>-97</b>	<b>-14</b>

## (25) Financial Risk Management

We manage market risks (that is, foreign currency exchange rate risk, interest rate risk, and equity price risk), credit risk, and liquidity risk on a Group-wide basis through our global treasury department. Our risk management and hedging strategy is set by our treasury guideline and other internal guidelines, and is subject to continuous internal risk analysis. Derivative financial instruments are only purchased to reduce risks and not for speculation, which is defined as entering into derivative instruments without a corresponding underlying transaction.

## Foreign Currency Exchange Rate Risk Management

We continuously monitor our exposure to currency fluctuation risks based on monetary items and forecasted transactions and pursue a Group-wide strategy to manage foreign currency exchange rate risk, using derivative financial instruments, primarily foreign exchange forward contracts, as appropriate, with the primary aim of reducing profit or loss volatility. Most of the hedging instruments are not designated as being in a hedge accounting relationship. For more information, see *Note (3a)*.

## Currency Hedges Designated as Hedging Instruments (Cash Flow Hedges)

We enter into derivative financial instruments, primarily foreign exchange forward contracts, to hedge significant forecasted cash flows (royalties) from foreign subsidiaries denominated in foreign currencies with a defined set of hedge ratios and a hedge horizon of up to 12 months, which is also the maximum maturity of the foreign exchange derivatives we use.

For all years presented, no previously highly-probable transaction designated as a hedged item in a foreign currency cash flow hedge relationship ceased to be probable. Therefore, we did not discontinue any of our cash flow hedge relationships. Also, we identified no ineffectiveness in all years reported. Generally, the cash flows of the hedged forecasted transactions are expected to occur and to be recognized in profit or loss monthly within a time frame of 12 months from the date of the statement of financial position.

## Foreign Currency Exchange Rate Exposure

Our risk exposure is based on a sensitivity analysis considering the following:

- The SAP Group's entities generally operate in their functional currencies. In exceptional cases and limited economic environments, operating transactions are denominated in currencies other than the functional currency, leading to a foreign currency exchange rate risk for the related monetary instruments. Where material, this foreign currency exchange rate risk is hedged. Therefore, fluctuations in foreign currency exchange rates neither have a significant impact on profit nor on other comprehensive income with regard to our non-derivative monetary financial instruments and related income or expenses.
- Our free-standing derivatives designed for hedging foreign currency exchange rate risks almost completely balance the changes in the fair values of the hedged item attributable to exchange rate movements in the Consolidated Income Statements in the same period. As a consequence, the hedged items and the hedging instruments are not exposed to foreign currency exchange rate risks, and thereby have no effect on profit.

Consequently, we are only exposed to significant foreign currency exchange rate fluctuations with regard to the following:

- Derivatives held within a designated cash flow hedge relationship (excluding the interest element, which is not part of the assigned cash flow hedge relationships) affecting other comprehensive income
- Foreign currency embedded derivatives affecting other non-operating expense, net.

We calculate our sensitivity on an upward/downward shift of +/-10% of the foreign currency exchange rate between euro and all major currencies (2016 and 2015: upward/downward

shift of +/-25% of the foreign currency exchange rate between euro and Brazilian real; +/-10% of the foreign currency exchange rate between euro and all other major currencies). If on December 31, 2017, 2016, and 2015, the foreign currency exchange rates had been higher/lower as described above, this would not have had a material effect on other non-operating expense, net and other comprehensive income.

Our foreign currency exposure (and our average/high/low exposure) as at December 31 was as follows:

### Foreign Currency Exposure

€ billions	2017	2016
Year-end exposure toward all our major currencies	0.9	0.9
Average exposure	0.9	0.9
Highest exposure	1.0	1.0
Lowest exposure	0.9	0.8

## Interest Rate Risk Management

The aim of our interest rate risk management is to reduce profit or loss volatility and optimize our interest result by creating a balanced structure of fixed and variable cash flows. We therefore manage interest rate risks by adding interest rate-related derivative instruments to a given portfolio of investments and debt financing.

## Derivatives Designated as Hedging Instruments (Fair Value Hedges)

The majority of our investments are based on variable rates and/or short maturities (2017: 79%; 2016: 71%) while most of our financing transactions are based on fixed rates and long maturities (2017: 71%; 2016: 71%). To match the interest rate risk from our financing transactions to our investments, we use receiver interest rate swaps to convert certain fixed-rate financial liabilities to floating, and by this means secure the fair value of the swapped financing transactions. The desired fixed-floating mix of our net debt is set by the Treasury Committee. Including interest rate swaps, 49% (2016: 42%) of our total interest-bearing financial liabilities outstanding as at December 31, 2017, had a fixed interest rate.

None of the fair value adjustment from the receiver swaps, the basis adjustment on the underlying hedged items held in fair value hedge relationships, and the difference between the two recognized in financial income, net is material in any of the years presented.

## Interest Rate Exposure

A sensitivity analysis is provided to show the impact of our interest rate risk exposure on profit or loss and equity in accordance with IFRS 7, considering the following:

- Changes in interest rates only affect the accounting for non-derivative fixed-rate financial instruments if they are recognized at fair value. Therefore, such interest rate changes do not change the carrying amounts of our non-derivative fixed-rate financial liabilities as we account for them at amortized cost. Investments in fixed-rate financial assets classified as available-for-sale were not material at each year end reported. Thus, we do not consider any fixed-rate instruments in the equity-related sensitivity calculation.
- Income or expenses recorded in connection with non-derivative financial instruments with variable interest rates are subject to interest rate risk if they are not hedged items in an effective hedge relationship. Thus, we take into consideration interest rate changes relating to our variable-rate financing and our investments in money market instruments in the profit-related sensitivity calculation.
- The designation of interest rate receiver swaps in a fair value hedge relationship leads to interest rate changes affecting

financial income, net. The fair value movements related to the interest rate swaps are not reflected in the sensitivity calculation, as they offset the fixed interest rate payments for the bonds and private placements as hedged items. However, changes in market interest rates affect the amount of interest payments from the interest rate swap. As a consequence, those effects of market interest rates on interest payments are included in the profit-related sensitivity calculation.

Due to the different interest rate expectations for the U.S. dollar and the euro area, we base our sensitivity analyses on a yield curve upward shift of +100/+25 basis points (bps) for the U.S. dollar/euro area (2016 and 2015: +100/+50 bps for the U.S. dollar/euro area) and a yield curve downward shift of –25 bps for both the U.S. dollar/euro area (2016: –50 bps; 2015: –50 bps).

If, on December 31, 2017, 2016, and 2015, interest rates had been higher/lower as described above, this would not have had a material effect on financial income, net for our variable interest rate investments and would have had the following effects on financial income, net.

## Interest Rate Sensitivity

€ millions	Effects on Financial Income, Net		
	2017	2016	2015
Derivatives held within a designated fair value hedge relationship			
Interest rates +100 bps in U.S. dollar area/+25 bps in euro area (2016 and 2015: +100/+50 bps for U.S. dollar/euro area)	–26	–46	–105
Interest rates –25 bps in U.S. dollar/euro area (2016 and 2015: –50 bps for U.S. dollar/euro area)	9	29	62
Variable-rate financing			
Interest rates +25 bps in euro area (2016 and 2015: +50 bps in euro area)	–5	–21	–39
Interest rates –25 bps in euro area (2016 and 2015: –50 bps in euro area)	0	0	19

Our interest rate exposure (and our average/high/low exposure) as at December 31 was as follows:

## Interest Rate Risk Exposure

€ billions	2017				2016			
	Year-End	Average	High	Low	Year-End	Average	High	Low
Fair value interest rate risk								
From investments	0.04	0.12	0.31	0.03	0.20	0.08	0.20	0.03
Cash flow interest rate risk								
From investments (including cash)	3.80	3.78	4.10	3.52	3.31	3.59	4.38	3.03
From financing	1.81	1.94	2.31	1.80	2.31	2.94	3.31	2.31
From interest rate swaps	1.35	1.75	2.22	1.35	2.22	2.59	2.69	2.22



## Equity Price Risk Management

Our listed equity investments are monitored based on the current market value that is affected by the fluctuations in the volatile stock markets worldwide. Unlisted equity investments are monitored based on detailed financial information provided by the investees. The fair value of our listed equity investments depends on the equity prices, while the fair value of the unlisted equity investments is influenced by various unobservable input factors. An assumed 10% increase (decrease) in equity prices and respective unobservable inputs as at December 31, 2017, would have increased (decreased) the value of our marketable equity investments and other comprehensive income by €56 million (€56 million) (2016: increased by €84 million (decreased by €81 million)).

We are exposed to equity price risk with regard to our share-based payments. In order to reduce resulting profit or loss volatility, we hedge certain cash flow exposures associated with these plans through the purchase of derivative instruments, but do not establish a designated hedge relationship. In our sensitivity analysis, we include the underlying share-based payments and the hedging instruments. Thus, we base the calculation on our net exposure to equity prices, as we believe that taking only the derivative instrument into account would not properly reflect our equity price risk exposure. An assumed 20% increase (decrease) in equity prices as at December 31, 2017, would have increased (decreased) our share-based payment expenses by €306 million (€291 million) (2016: increased by €281 million (decreased by €252 million); 2015: increased by €200 million (decreased by €198 million)).

## Credit Risk Management

To mitigate the credit risk from our investing activities and derivative financial assets, we conduct all our activities only with approved major financial institutions and issuers that carry high external ratings, as required by our internal treasury guideline. Among its stipulations, the guideline requires that we invest only in assets from issuers with a minimum rating of at least "BBB flat". We only make investments in issuers with a lower rating in exceptional cases. Such investments were not material in 2017 and 2016. The weighted average rating of our financial assets is in the range A- to BBB+. We pursue a policy of cautious investments characterized by predominantly current investments, standard investment instruments, as well as a wide portfolio diversification by doing business with a variety of counterparties.

To further reduce our credit risk, we require collateral for certain investments in the full amount of the investment volume which we would be allowed to make use of in the case of default of the counterparty to the investment. As such collateral, we only accept bonds with at least investment grade rating level.

In addition, the concentration of credit risk that exists when counterparties are involved in similar activities by instrument, sector, or geographic area is further mitigated by diversification of counterparties throughout the world and adherence to an internal limit system for each counterparty. This internal limit system stipulates that the business volume with individual counterparties is restricted to a defined limit, which depends on the lowest official long-term credit rating available by at least one of the major rating agencies, the Tier 1 capital of the respective financial institution, or participation in the German Depositors' Guarantee Fund or similar protection schemes. We continuously monitor strict compliance with these counterparty limits. As the premium for credit default swaps mainly depends on market participants' assessments of the creditworthiness of a debtor, we also closely observe the development of credit default swap spreads in the market to evaluate probable risk developments to timely react to changes if these should manifest.

The default risk of our trade receivables is managed separately, mainly based on assessing the creditworthiness of customers through external ratings and our past experience with the customers concerned. Outstanding receivables are continuously monitored locally. For more information, see [Note \(3\)](#). The impact of default on our trade receivables from individual customers is mitigated by our large customer base and its distribution across many different industries, company sizes, and countries worldwide. For more information about our trade receivables, see [Note \(13\)](#). For information about the maximum exposure to credit risk, see [Note \(24\)](#).

## Liquidity Risk Management

Our liquidity is managed by our global treasury department with the primary aim of maintaining liquidity at a level that is adequate to meet our financial obligations.

Generally, our primary source of liquidity is funds generated from our business operations. Our global treasury department manages liquidity centrally for all subsidiaries. Where possible, we pool their cash surplus so that we can use liquidity centrally for our business operation, for subsidiaries' funding requirements, or to invest any net surplus in the market. With this strategy, we seek to optimize yields, while ensuring liquidity, by investing only with counterparties and issuers of high credit quality, as explained before. Hence, high levels of liquid assets and marketable securities provide a strategic reserve, helping keep SAP flexible, sound, and independent.

Apart from effective working capital and cash management, we have reduced the liquidity risk inherent in managing our day-to-day operations and meeting our financing responsibilities by arranging an adequate volume of available credit facilities with various financial institutions on which we can draw if necessary.

In order to retain high financial flexibility, on November 20, 2017, SAP SE entered into a €2.5 billion syndicated credit facility agreement with an initial term of five years plus two one-year extension options replacing its previous credit facility of €2.0 billion from 2013. The use of the facility is not restricted by any financial covenants. Borrowings under the facility bear interest of EURIBOR or LIBOR for the respective currency plus a margin of 17.0 basis points. We are also required to pay a commitment fee of 5.95 basis points per annum on the unused available credit. We have not drawn on the facility.

Additionally, as at December 31, 2017, and 2016, we had available lines of credit totaling €510 million and €499 million, respectively. There were immaterial borrowings outstanding under these lines of credit in all years presented.

## (26) Fair Value Disclosures on Financial Instruments

### Fair Value of Financial Instruments

We use various types of financial instruments in the ordinary course of business, which are classified as either: loans and receivables (L&R), available-for-sale (AFS), held-for-trading (HFT), or amortized cost (AC). For those financial instruments measured at fair value or for which fair value must be disclosed, we have categorized the financial instruments into a three-level fair value hierarchy depending on the inputs used to determine fair value and their significance for the valuation techniques.

### Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

€ millions	Category	Carrying Amount	Measurement Categories					December 31, 2017	
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total	
									Fair Value
<b>Assets</b>									
Cash and cash equivalents <sup>1)</sup>	L&R	4,011	4,011						
Trade and other receivables		6,017							
Trade receivables <sup>1)</sup>	L&R	5,810	5,810						
Other receivables <sup>2)</sup>	—	207							
Other financial assets		2,145							
Available-for-sale financial assets									
Debt investments	AFS	39		39	39			39	
Equity investments	AFS	827		827	87	8	732	827	
Investments in associates <sup>2)</sup>	—	32							
Loans and other financial receivables									
Financial instruments related to employee benefit plans <sup>3)</sup>	—	155							
Other loans and other financial receivables	L&R	899	899			899		899	
Derivative assets									
Designated as hedging instrument									
FX forward contracts	—	29		29		29		29	
Interest rate swaps	—	24		24		24		24	
Not designated as hedging instrument									
FX forward contracts	HFT	41		41		41		41	
Call options for share-based payments	HFT	90		90		90		90	
Call option on equity shares	HFT	11		11			11	11	

## Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

€ millions	Category	December 31, 2017					
		Carrying Amount	Measurement Categories			Fair Value	
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3
<b>Liabilities</b>							
Trade and other payables		-1,270					
Trade payables <sup>1)</sup>	AC	-952	-952				
Other payables <sup>2)</sup>	—	-318					
Financial liabilities		-6,595					
Non-derivative financial liabilities							
Loans	AC	-24	-24		-24		-24
Bonds	AC	-5,147	-5,147	-5,335			-5,335
Private placements	AC	-1,130	-1,130		-1,136		-1,136
Other non-derivative financial liabilities	AC	-208	-208		-208		-208
Derivatives							
Designated as hedging instrument							
FX forward contracts	—	-1	-1		-1		-1
Interest rate swaps	—	-1	-1		-1		-1
Not designated as hedging instrument							
FX forward contracts	HFT	-84	-84		-84		-84
<b>Total financial instruments, net</b>		<b>4,308</b>	<b>3,259</b>	<b>974</b>	<b>-5,209</b>	<b>-364</b>	<b>742</b>
							<b>-4,830</b>

## Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

€ millions	Category	December 31, 2016					
		Carrying Amount	Measurement Categories			Fair Value	
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3
<b>Assets</b>							
Cash and cash equivalents <sup>1)</sup>	L&R	3,702	3,702				
Trade and other receivables		6,050					
Trade receivables <sup>1)</sup>	L&R	5,825	5,825				
Other receivables <sup>2)</sup>	—	225					
Other financial assets		2,482					
Available-for-sale financial assets							
Debt investments	AFS	195	195	195			195
Equity investments	AFS	953	953	153	94	706	953
Investments in associates <sup>2)</sup>	—	38					
Loans and other financial receivables							
Financial instruments related to employee benefit plans <sup>2)</sup>	—	144					
Other loans and other financial receivables	L&R	956	956		956		956

## Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

€ millions	Category	December 31, 2016						
		Carrying Amount	Measurement Categories			Fair Value		
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total
<b>Derivative assets</b>								
Designated as hedging instrument								
FX forward contracts	–	12		12		12		12
Interest rate swaps	–	47		47		47		47
Not designated as hedging instrument								
FX forward contracts	HFT	35		35		35		35
Call options for share-based payments	HFT	84		84		84		84
Call option on equity shares	HFT	17		17			17	17
<b>Liabilities</b>								
Trade and other payables								
Trade payables <sup>1)</sup>	AC	-1,016	-1,016					
Other payables <sup>2)</sup>	–	-392						
Financial liabilities								
Non-derivative financial liabilities								
Loans	AC	-16	-16			-16		-16
Bonds	AC	-6,147	-6,147		-6,374			-6,374
Private placements	AC	-1,717	-1,717			-1,744		-1,744
Other non-derivative financial liabilities	AC	-219	-219			-219		-219
Derivatives								
Designated as hedging instrument								
FX forward contracts	–	-24		-24		-24		-24
Interest rate swaps	–	0		0		0		0
Not designated as hedging instrument								
FX forward contracts	HFT	-170		-170		-170		-170
<b>Total financial instruments, net</b>		<b>2,533</b>	<b>1,369</b>	<b>1,149</b>	<b>-6,026</b>	<b>-944</b>	<b>723</b>	<b>-6,248</b>

<sup>1)</sup> We do not separately disclose the fair value for cash and cash equivalents, trade receivables, and accounts payable as their carrying amounts are a reasonable approximation of their fair values.

<sup>2)</sup> Since the line items trade receivables, trade payables, and other financial assets contain both financial and non-financial assets or liabilities (such as other taxes or advance payments), the carrying amounts of non-financial assets or liabilities are shown to allow a reconciliation to the corresponding line items in the Consolidated Statements of Financial Position.

## Fair Values of Financial Instruments Classified According to IAS 39

€ millions	Category	December 31, 2017		
		Carrying Amount	At Amortized Cost	At Fair Value
<b>Financial assets</b>				
At fair value through profit or loss	HFT	141		141
Available-for-sale	AFS	865		865
Loans and receivables	L&R	10,719	10,719	
<b>Financial liabilities</b>				
At fair value through profit or loss	HFT	-84		-84
At amortized cost	AC	-7,460	-7,460	

€ millions	Category	December 31, 2016		
		Carrying Amount	At Amortized Cost	At Fair Value
<b>Financial assets</b>				
At fair value through profit or loss	HFT	136		136
Available-for-sale	AFS	1,148		1,148
Loans and receivables	L&R	10,484	10,484	
<b>Financial liabilities</b>				
At fair value through profit or loss	HFT	-170		-170
At amortized cost	AC	-9,115	-9,115	

## Determination of Fair Values

It is our policy that transfers between the different levels of the fair value hierarchy are deemed to have occurred at the beginning of the period of the event or change in circumstances that caused the transfer. A description of the valuation techniques and the inputs used in the fair value measurement is given below:

## Financial Instruments Measured at Fair Value on a Recurring Basis

Type	Fair Value Hierarchy	Determination of Fair Value/Valuation Technique	Significant Unobservable Inputs	Interrelationship Between Significant Unobservable Inputs and Fair Value Measurement
<b>Other financial assets</b>				
Debt investments	Level 1	Quoted prices in an active market	NA	NA
Listed equity investments	Level 1	Quoted prices in an active market	NA	NA
	Level 2	Quoted prices in an active market deducting a discount for the disposal restriction derived from the premium for a respective put option.	NA	NA
Unlisted equity investments	Level 3	Market approach. Comparable company valuation using revenue multiples derived from companies comparable to the investee.	Peer companies used (revenue multiples range from 3.4 to 7.8) Revenues of investees Discounts for lack of marketability (10% to 20%)	The estimated fair value would increase (decrease) if: The revenue multiples were higher (lower) The investees' revenues were higher (lower) The liquidity discounts were lower (higher).
		Market approach. Venture capital method evaluating a variety of quantitative and qualitative factors such as actual and forecasted results, cash position, recent or planned transactions, and market comparable companies.	NA	NA
		Last financing round valuations	NA	NA
		Liquidation preferences	NA	NA
		Net asset value/Fair market value as reported by the respective funds	NA	NA
Call options for share-based payment plans	Level 2	Monte Carlo model. Calculated considering risk-free interest rates, the remaining term of the derivatives, the dividend yields, the share price, and the volatility of our share.	NA	NA
Call option on equity shares	Level 3	Market approach. Company valuation using EBITDA multiples based on actual results derived from the investee.	EBITDA multiples used EBITDA of the investee	The estimated fair value would increase (decrease) if: The EBITDA multiples were higher (lower) The investees' EBITDA were higher (lower)
<b>Other financial assets/ Financial liabilities</b>				
FX forward contracts	Level 2	Discounted cash flow using par-method. Expected future cash flows based on forward exchange rates are discounted over the respective remaining term of the contracts using the respective deposit interest rates and spot rates.	NA	NA
Interest rate swaps	Level 2	Discounted cash flow. Expected future cash flows are estimated based on forward interest rates from observable yield curves and contract interest rates, discounted at a rate that reflects the credit risk of the counterparty.	NA	NA

## Financial Instruments Not Measured at Fair Value

Type	Fair Value Hierarchy	Determination of Fair Value/Valuation Technique
<b>Financial liabilities</b>		
Fixed-rate bonds (financial liabilities)	Level 1	Quoted prices in an active market
Fixed-rate private placements/ loans (financial liabilities)	Level 2	Discounted cash flows. Future cash outflows for fixed interest and principal are discounted over the term of the respective contracts using the market interest rates as of the reporting date.

For other non-derivative financial assets/liabilities and variable rate financial debt, it is assumed that their carrying value reasonably approximates their fair values.

### Transfers Between Levels 1 and 2

Transfers of available-for-sale equity investments from Level 2 to Level 1 which occurred because disposal restrictions lapsed and deducting a discount for such restriction was no longer necessary were €360 million in 2017 (2016: €17 million), while transfers from Level 1 to Level 2 did not occur at all.

### Level 3 Disclosures

The following table shows the reconciliation of fair values from the opening to the closing balances for our unlisted equity investments and call options on equity shares classified as Level 3 fair values:

### Reconciliation of Level 3 Fair Values

€ millions	2017	2016
	Unlisted Equity Investments and Call Options on Equity Shares	Unlisted Equity Investments and Call Options on Equity Shares
January 1	722	568
Transfers		
Into Level 3	0	18
Out of Level 3	-100	-18
Purchases	257	156
Sales	-102	-168
Gains/losses		
Included in financial income, net in profit and loss	26	96
Included in available-for-sale financial assets in other comprehensive income	28	48
Included in exchange differences in other comprehensive income	-89	22
<b>December 31</b>	<b>742</b>	<b>722</b>
Change in unrealized gains/losses in profit and loss for equity investments held at the end of the reporting period	0	0

Transfers out of Level 3 are due to initial public offerings of the respective investee. Changing the unobservable inputs to reflect reasonably possible alternative assumptions would not have a material impact on the fair values of our unlisted equity investments held as available-for-sale as of the reporting date.

## (27) Share-Based Payments

SAP has granted awards under various cash-settled and equity-settled share-based payment plans to employees and executives. Most of these plans are described in detail below. SAP has other share-based payment plans not described below, which are individually and in aggregate, immaterial to our Consolidated Financial Statements.

### a) Cash-Settled Share-Based Payments

#### Long-Term Incentive 2016 Plan (LTI 2016 Plan)

The purpose of the LTI 2016 Plan is to reward the annual achievement of the operating profit (non-IFRS, at constant currency), to ensure long-term retention of our Executive Board members, and to reward them for a long-term SAP share price performance as compared to its main peer group (Peer Group).

The virtual share program came into effect on January 1, 2016. A LTI tranche is granted annually and has a term of four years (2016–2017 tranches). Each grant starts with determining a grant amount in euros. The grant amount is based on the Executive Board members' contractual target amount and the operating profit target achievement for the previous year. The Supervisory Board sets the grant amount at a level between 80% and 120% of the contractual target amount, taking into account the operating profit target achievement. This grant amount is converted into virtual shares, referred to as share units, by dividing the grant amount by the grant price. The grant price is the arithmetic mean of the XETRA closing prices of the SAP share on the 20 trading days following the publication of SAP's fourth-quarter results.

All share units granted in this way, comprising 60% Performance Share Units (PSUs) and 40% Retention Share Units (RSUs), have a vesting period of approximately four years. At the end of the vesting period, the corresponding share units are non-forfeitable. The payout price used for the settlement is the arithmetic mean of the XETRA closing prices of the SAP share on the 20 trading days following the publication of SAP's fourth-quarter results subsequent to the end of the vesting period. The payout price is capped at 300% of the grant price. The LTI tranche is cash-settled and paid in euros after the Annual General Shareholders' Meeting of the corresponding year.

The number of PSUs ultimately paid out changes depending on the performance of the SAP share – absolute and relative to the Peer Group Index. In contrast, the final number of RSUs is fixed. SAP's absolute share price performance is measured by comparing the grant price against the payout price. If the SAP

share price performance equals the Peer Group Index performance over the same period, the performance factor is set at 100%. If the SAP share price performs better than the Peer Group Index (measured as difference between SAP share price performance and Peer Group Index performance), the performance factor is increased by the percentage point of the outperformance of the SAP share price. The percentage point is doubled if, additionally, the payout price is higher than the grant price. The performance factor is capped at 150%. If the Peer Group Index performs better than the SAP share price, the performance factor is decreased by the percentage point of the outperformance of the Peer Group Index. All PSUs lapse if the performance factor is below 50%.

If an Executive Board member's service contract is terminated before the end of the third year following the year in which the share units were granted, both the RSUs and PSUs are forfeited in whole or in part, depending on the circumstances of the relevant resignation from office or termination of the service contract.

#### Long-Term Incentive 2015 Plan (LTI 2015 Plan)

Under the LTI 2015 Plan, we granted to members of our former Global Managing Board virtual shares, referred to as share units, between 2012 and 2015 (2012–2015 tranches).

At the end of the year in which the share units are granted, the share units vest. The share units are subject to a three-year holding period before payout. The payout depends on the number of vested share units and the SAP share price, which is set directly after the publication of SAP's fourth-quarter results for the last financial year of the respective three-year holding period.

#### SAP Stock Option Plan 2010 (SOP 2010)

Under the SOP 2010, we granted members of the Senior Leadership Team, Global Executives, and employees with an exceptional rating as well as high potentials between 2010 and 2015, and only in 2010 and 2011 members of the Executive Board, virtual stock options.

The grant base value was based on the average closing price of the SAP share over the five trading days prior to the Executive Board resolution date.

The options granted under the SOP 2010 give the employees the right to receive a certain amount of cash by exercising the options. After a three-year vesting period (four years for members of the Executive Board), the plan provides for 11 predetermined exercise dates every calendar year (one date per month except for April) until the rights lapse six years after the grant date (seven years for members of the Executive Board). Employees can exercise their options only if they are employed by SAP; if they leave the Company, the options forfeit. Executive



Board members' options are non-forfeitable once granted – if the service agreement ends in the grant year, the number of options is reduced pro rata temporis. Any options not exercised up to the end of their term expire.

The exercise price is 110% of the grant base value (115% for members of the Executive Board), which is €39.03 (€40.80) for the 2010 tranche, €46.23 (€48.33) for the 2011 tranche, €49.28 for the 2012 tranche, €59.85 for the 2013 tranche, €60.96 for the 2014 tranche, and €72.18 for the 2015 tranche.

Monetary benefits will be capped at 100% of the exercise price (150% for members of the SAP Executive Board).

## Restricted Stock Unit Plan Including Move SAP Plan (RSU Plan)

To retain and motivate executives and certain employees, we granted virtual shares representing a contingent right to receive a cash payment determined by the SAP share price (or SAP SE

American Depositary Receipts on the New York Stock Exchange) and the number of share units that ultimately vest.

Granted share units will vest in different tranches, either:

- Over a one-to-three-year service period only, or
- Over a one-to-three-year service period and upon achieving certain key performance indicators (KPIs).

The number of performance-based share units (PSUs) that will vest under the 2017 tranche was contingent upon achievement of the operating profit (non-IFRS, at constant currency) KPI target in 2017. Depending on performance, the number of PSUs vesting ranges between 0% and 200% of the number initially granted. Performance against the KPI target was 78.2% (2016: 85.1%) in 2017. All share units are paid out in cash upon vesting.

The valuation of our outstanding cash-settled plans was based on the following parameters and assumptions:

## Fair Value and Parameters Used at Year End 2017 for Cash-Settled Plans

€, unless otherwise stated	LTI 2016 Plan (2016–2017 Tranches)	LTI 2015 Plan (2013–2015 Tranches)	SOP 2010 (2011–2015 Tranches)	RSU Plan (2014–2017 Tranches)
<b>Weighted average fair value as at 12/31/2017</b>	<b>84.16</b>	<b>92.40</b>	<b>26.45</b>	<b>92.08</b>
<b>Information how fair value was measured at measurement date</b>				
Option pricing model used	Monte Carlo	Other <sup>1)</sup>	Monte Carlo	Other <sup>1)</sup>
Share price	93.45	93.45	93.45	93.45
Risk-free interest rate, depending on maturity (in %)	–0.63 to –0.48	–0.81	–0.62 to –0.41	–0.70 to –0.32
Expected volatility (in %)	17.5 to 19.6	NA	21.1 to 34.5	NA
Expected dividend yield (in %)	1.38	1.38	1.38	1.38
<b>Weighted average remaining life of awards outstanding as at 12/31/2017 (in years)</b>	<b>2.9</b>	<b>0.8</b>	<b>1.6</b>	<b>1.1</b>

<sup>1)</sup> For these awards, the fair value is calculated by subtracting the net present value of expected future dividend payments, if any, until maturity of the respective award from the prevailing share price as of the valuation date.

## Fair Value and Parameters Used at Year End 2016 for Cash-Settled Plans

€, unless otherwise stated	LTI 2016 Plan. (2016 Tranche)	LTI 2015 Plan (2012–2015 Tranches)	SOP 2010 (2010–2015 Tranches)	RSU Plan (2013–2016 Tranches)
<b>Weighted average fair value as at 12/31/2016</b>	<b>74.54</b>	<b>81.10</b>	<b>20.94</b>	<b>81.34</b>
<b>Information how fair value was measured at measurement date</b>				
Option pricing model used	Binomial	Other <sup>1)</sup>	Monte Carlo	Other <sup>1)</sup>
Share price	82.81	82.81	82.81	82.77
Risk-free interest rate, depending on maturity (in %)	-0.76	-0.80 to -0.84	-0.51 to -0.83	-0.36 to -0.84
Expected volatility (in %)	21.2	NA	22.3 to 51.0	NA
Expected dividend yield (in %)	1.45	1.45	1.46	1.45
<b>Weighted average remaining life of options outstanding as at 12/31/2016 (in years)</b>	<b>3.0</b>	<b>1.4</b>	<b>2.4</b>	<b>1.2</b>

<sup>1)</sup> For these awards, the fair value is calculated by subtracting the net present value of expected future dividend payments, if any, until maturity of the respective award from the prevailing share price as of the valuation date.

For SOP 2010, expected volatility of the SAP share price is based on a blend of implied volatility from traded options with corresponding lifetimes and exercise prices as well as historical volatility with the same expected life as the options granted.

For LTI 2016 Plan valuation, the Peer Group Index price on December 31, 2017, was US\$247.24 (2016: US\$179.57); the expected dividend yield of the index of 1.16% (2016: 1.24%), the expected volatility of the index of 16% to 17% (2016: 18%), and

the expected correlation of the SAP share price and the index price of 41% to 48% (2016: 39%) are based on historical data for the SAP share price and index price.

Expected remaining life of the options reflects both the contractual term and the expected, or historical, exercise behavior. The risk-free interest rate is derived from German government bonds with a similar duration. The SAP dividend yield is based on expected future dividends.

## Changes in Numbers of Outstanding Awards Under Our Cash-Settled Plans

Thousands, unless otherwise stated	LTI 2016 Plan (2016–2017 Tranches)	LTI 2015 Plan (2012–2015 Tranches)	SOP 2010 (2010–2015 Tranches)	RSU Plan (2013–2017 Tranches)
12/31/2015	0	977	29,127	5,577
Granted	389	0	0	9,104
Adjustment based upon KPI target achievement	NA	0	NA	-66
Exercised	0	-294	-4,693	-2,659
Forfeited	-12	0	-1,059	-1,055
<b>12/31/2016</b>	<b>377</b>	<b>684</b>	<b>23,375</b>	<b>10,901</b>
Granted	295	0	0	7,835
Adjustment based upon KPI target achievement	NA	0	NA	-124
Exercised	0	-152	-7,769	-4,388
Forfeited	-41	0	-1,134	-704
<b>12/31/2017</b>	<b>631</b>	<b>531</b>	<b>14,472</b>	<b>13,520</b>
<b>Outstanding awards exercisable as at</b>				
12/31/2016	0	0	5,472	0
<b>12/31/2017</b>	<b>0</b>	<b>0</b>	<b>4,948</b>	<b>0</b>

## Changes in Numbers of Outstanding Awards Under Our Cash-Settled Plans

Thousands, unless otherwise stated	LTI 2016 Plan (2016–2017 Tranches)	LTI 2015 Plan (2012–2015 Tranches)	SOP 2010 (2010–2015 Tranches)	RSU Plan (2013–2017 Tranches)
<b>Total carrying amount (in € millions) of liabilities as at</b>				
12/31/2016	7	58	385	436
12/31/2017	22	51	354	708
<b>Total intrinsic value of vested awards (in € millions) as at</b>				
12/31/2016	2	58	154	0
12/31/2017	5	49	172	0
<b>Weighted average share price (in €) for share options exercised in</b>				
2016	NA	72.55	78.74	74.74
2017	NA	84.94	91.13	90.91
<b>Total expense (in € millions) recognized in</b>				
2015	0	28	187	193
2016	7	7	183	458
2017	14	9	221	712

## b) Equity-Settled Share-Based Payments

### Own SAP Plan (Own)

Under the Own SAP Plan (Own) implemented in 2016, SAP offers its employees the opportunity to purchase, monthly, SAP shares without any holding period. Each eligible employee's investment is limited to a percentage of the employee's monthly base salary. SAP matches the employee investment by 40% and adds a subsidy of €20 per month for non-executives. For the participation in 2016, employees received a double matching contribution as well as a double subsidy. This plan is not open to members of the Executive Board.

The number of shares purchased under this plan was 5.0 million in 2017 (2016: 1.4 million).

### Share Matching Plan (SMP)

Under the SMP, SAP offered its employees the opportunity to purchase SAP shares at a discount of 40% between 2010 and

2015. The number of SAP shares an eligible employee could purchase through the SMP was limited to a percentage of the employee's annual base salary. After a three-year holding period, the plan participants receive, from SAP, one free matching share for every three SAP shares acquired.

The terms for members of the Senior Leadership Team and Global Executives were different than those for other employees. Both groups did not receive a discount when purchasing the shares. However, after a three-year holding period, they receive two free matching shares for every three SAP shares acquired. This plan was not open to members of the Executive Board.

The weighted average remaining life of free matching shares outstanding is 0.4 years as at December 31, 2017. The following table shows the parameters and assumptions used at grant date to determine the fair value of free matching shares, as well as the quantity of shares purchased and free matching shares:

## Fair Value and Parameters at Grant Date for SMP

€, unless otherwise stated	2015
<b>Grant date</b>	<b>6/5/2015</b>
<b>Fair value of granted awards</b>	<b>62.98</b>
<b>Information how fair value was measured at grant date</b>	
Option pricing model used	Other <sup>1)</sup>
Share price	66.31
Risk-free interest rate (in %)	-0.08
Expected dividend yield (in %)	1.67
<b>Weighted average remaining life of awards outstanding at year end (in years)</b>	<b>1.5</b>
<b>Number of investment shares purchased (in thousands)</b>	<b>1,492</b>

<sup>1)</sup> For these awards, the fair value is calculated by subtracting the net present value of expected future dividend payments, if any, until maturity of the respective award from the prevailing share price as of the valuation date.

## Changes in Numbers of Outstanding Awards for Equity-Settled Plans

Thousands	SMP
12/31/2015	1,600
Exercised	-444
Forfeited	-105
<b>12/31/2016</b>	<b>1,051</b>
Exercised	-520
Forfeited	-19
<b>12/31/2017</b>	<b>512</b>

## Recognized Expense for Equity-Settled Plans

€ millions	2017	2016	2015
Own	140	77	0
SMP	15	24	80

## (28) Segment and Geographic Information

### General Information

SAP has two operating segments that are regularly reviewed by the Executive Board, which is responsible for assessing the performance of the Company and for making resource allocation decisions as the Chief Operating Decision Maker (CODM). One is the Applications, Technology & Services segment and the other is the SAP Business Network segment.

The segments are largely organized and managed separately according to their product and service offerings.

The Applications, Technology & Services segment derives its revenues primarily from the sale of software licenses, subscriptions to our cloud applications, and related services (mainly support services and various professional services and premium support services, as well as implementation services for our software products and education services on the use of our products).

The SAP Business Network segment derives its revenues mainly from transaction fees charged for the use of SAP's cloud-based

collaborative business networks and from services relating to the SAP Business Network (including cloud applications, professional services, and education services). Within the SAP Business Network segment, we mainly market and sell the cloud offerings developed by SAP Ariba, SAP Fieldglass, and Concur.

On May 1, 2017, we changed the responsibilities within our Executive Board which also resulted in minor changes in our segment structure. In particular, the non-reportable segment

comprising SAP's healthcare strategy as well as the non-reportable segment combining our SAP Anywhere, SAP Business One, and SAP Business ByDesign solutions are no longer operating segments, and their activities were included in the Applications, Technology & Services segment. We have retrospectively restated the revenue and results for the Applications, Technology & Services segment to reflect this change.

## Revenue and Results of Segments

€ millions	Applications, Technology & Services			SAP Business Network			Total Reportable Segments		
	2017		2016	2017		2016	2017		2016
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency
Cloud subscriptions and support – SaaS/PaaS <sup>1)</sup>	1,604	1,627	1,191	1,840	1,870	1,595	3,443	3,497	2,786
Cloud subscriptions and support – IaaS <sup>2)</sup>	328	334	209	0	0	0	328	334	209
Cloud subscriptions and support	1,932	1,961	1,400	1,840	1,870	1,595	3,772	3,831	2,995
Software licenses	4,872	4,983	4,864	-1	-1	0	4,871	4,982	4,864
Software support	10,890	10,987	10,545	18	18	28	10,908	11,005	10,572
Software licenses and support	15,762	15,970	15,409	17	18	27	15,780	15,987	15,436
Cloud and software	17,694	17,931	16,809	1,857	1,887	1,622	19,551	19,818	18,431
Services	3,447	3,472	3,321	404	413	303	3,851	3,885	3,624
<b>Total segment revenue</b>	<b>21,141</b>	<b>21,403</b>	<b>20,130</b>	<b>2,261</b>	<b>2,300</b>	<b>1,925</b>	<b>23,402</b>	<b>23,703</b>	<b>22,055</b>
Cost of cloud subscriptions and support – SaaS/PaaS <sup>1)</sup>	-684	-694	-457	-428	-435	-384	-1,112	-1,128	-840
Cost of cloud subscriptions and support – IaaS <sup>2)</sup>	-309	-312	-221	0	0	0	-309	-312	-221
Cost of cloud subscriptions and support	-993	-1,006	-678	-428	-435	-384	-1,421	-1,440	-1,062
Cost of software licenses and support	-2,007	-2,018	-1,964	-5	-5	-1	-2,012	-2,022	-1,965
Cost of cloud and software	-3,000	-3,023	-2,642	-433	-439	-385	-3,433	-3,463	-3,026
Cost of services	-2,703	-2,722	-2,669	-293	-297	-246	-2,996	-3,019	-2,915
<b>Total cost of revenue</b>	<b>-5,703</b>	<b>-5,745</b>	<b>-5,311</b>	<b>-725</b>	<b>-737</b>	<b>-631</b>	<b>-6,429</b>	<b>-6,481</b>	<b>-5,942</b>
<b>Segment gross profit</b>	<b>15,438</b>	<b>15,659</b>	<b>14,819</b>	<b>1,536</b>	<b>1,563</b>	<b>1,295</b>	<b>16,974</b>	<b>17,222</b>	<b>16,114</b>
Other segment expenses	-7,336	-7,418	-6,768	-1,151	-1,169	-954	-8,486	-8,586	-7,722
<b>Segment profit</b>	<b>8,102</b>	<b>8,241</b>	<b>8,051</b>	<b>385</b>	<b>394</b>	<b>341</b>	<b>8,488</b>	<b>8,636</b>	<b>8,392</b>

<sup>1)</sup> Software as a Service/Platform as a Service

<sup>2)</sup> Infrastructure as a Service

## Revenue and Results of Segments

€ millions	Applications, Technology & Services			SAP Business Network			Total Reportable Segments		
	2016		2015	2016		2015	2016		2015
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency
Cloud subscriptions and support – SaaS/PaaS <sup>1)</sup>	1,191	1,204	872	1,595	1,589	1,337	2,786	2,794	2,208
Cloud subscriptions and support – IaaS <sup>2)</sup>	209	213	91	0	0	0	209	213	91
Cloud subscriptions and support	1,400	1,417	963	1,595	1,589	1,337	2,995	3,007	2,299
Software licenses	4,864	4,895	4,837	0	0	-1	4,864	4,894	4,836
Software support	10,545	10,627	10,062	28	28	31	10,572	10,654	10,093
Software licenses and support	15,409	15,521	14,899	27	27	30	15,436	15,549	14,930
Cloud and software	16,809	16,939	15,862	1,622	1,617	1,367	18,431	18,555	17,229
Services	3,321	3,360	3,272	303	304	249	3,624	3,663	3,521
<b>Total segment revenue</b>	<b>20,130</b>	<b>20,298</b>	<b>19,134</b>	<b>1,925</b>	<b>1,920</b>	<b>1,616</b>	<b>22,055</b>	<b>22,219</b>	<b>20,750</b>
Cost of cloud subscriptions and support – SaaS/PaaS <sup>1)</sup>	-457	-458	-263	-384	-385	-336	-840	-843	-599
Cost of cloud subscriptions and support – IaaS <sup>2)</sup>	-221	-222	-189	0	0	0	-221	-222	-189
Cost of cloud subscriptions and support	-678	-680	-452	-384	-385	-336	-1,062	-1,065	-788
Cost of software licenses and support	-1,964	-1,978	-1,992	-1	-1	-1	-1,965	-1,979	-1,993
Cost of cloud and software	-2,642	-2,658	-2,444	-385	-386	-337	-3,026	-3,044	-2,781
Cost of services	-2,669	-2,718	-2,542	-246	-249	-183	-2,915	-2,967	-2,725
<b>Total cost of revenue</b>	<b>-5,311</b>	<b>-5,376</b>	<b>-4,985</b>	<b>-631</b>	<b>-635</b>	<b>-520</b>	<b>-5,942</b>	<b>-6,012</b>	<b>-5,506</b>
<b>Segment gross profit</b>	<b>14,819</b>	<b>14,922</b>	<b>14,148</b>	<b>1,295</b>	<b>1,285</b>	<b>1,095</b>	<b>16,114</b>	<b>16,207</b>	<b>15,244</b>
Other segment expenses	-6,768	-6,868	-6,407	-954	-964	-779	-7,722	-7,833	-7,185
<b>Segment profit</b>	<b>8,051</b>	<b>8,054</b>	<b>7,742</b>	<b>341</b>	<b>321</b>	<b>317</b>	<b>8,392</b>	<b>8,374</b>	<b>8,059</b>

<sup>1)</sup> Software as a Service/Platform as a Service

<sup>2)</sup> Infrastructure as a Service

Information about assets and liabilities and additions to non-current assets by segment are not regularly provided to our Executive Board. Goodwill by segment is disclosed in [Note \(15\)](#).

### Measurement and Presentation

Our management reporting system reports our intersegment services as cost reductions and does not track them as internal revenue. Intersegment services mainly represent utilization of human resources of one segment by another segment on a project basis. Intersegment services are charged based on internal cost rates including certain indirect overhead costs, excluding a profit margin.

Most of our depreciation and amortization expense affecting segment profits is allocated to the segments as part of broader infrastructure allocations and is thus not tracked separately on the operating segment level. Depreciation and amortization expense that is directly allocated to the operating segments is immaterial in all segments presented.

Our management reporting system produces a variety of reports that differ by the currency exchange rates used in the accounting for foreign-currency transactions and operations. Reports based on actual currencies use the same currency rates as are used in our financial statements. Reports based on

constant currencies report revenues and expenses using the average exchange rates from the previous year's corresponding period.

We use an operating profit indicator to measure the performance of our operating segments. However, the accounting policies applied in the measurement of operating segment revenue and profit differ as follows from the IFRS accounting principles used to determine the operating profit measure in our income statement:

The measurements of segment revenue and results include the recurring revenues that would have been recorded by acquired entities had they remained stand-alone entities but which are not recorded as revenue under IFRS due to fair value accounting for customer contracts in effect at the time of an acquisition.

The expenses measures exclude:

- Acquisition-related charges
  - Amortization expense and impairment charges for intangibles acquired in business combinations and certain stand-alone acquisitions of intellectual property (including purchased in-process research and development)
  - Settlements of pre-existing relationships in connection with a business combination
  - Acquisition-related third-party expenses
- Share-based payment expenses
- Restructuring expenses

Certain activities are exclusively managed on corporate level, including finance, accounting, legal, human resources, and marketing. They are disclosed in the reconciliation under other revenue and other expenses, respectively.

## Reconciliation of Revenue and Segment Results

€ millions	2017		2016		2015
	Actual Currency	Constant Currency	Actual Currency	Constant Currency	Actual Currency
Total segment revenue for reportable segments	23,402	23,703	22,055	22,219	20,750
Other revenue	62	62	12	12	55
Adjustment for currency impact	0	-301	0	-164	0
Adjustment of revenue under fair value accounting	-3	-3	-5	-5	-11
<b>Total revenue</b>	<b>23,461</b>	<b>23,461</b>	<b>22,062</b>	<b>22,062</b>	<b>20,793</b>
Total segment profit for reportable segments	8,488	8,636	8,392	8,374	8,059
Other revenue	62	62	12	12	55
Other expenses	-1,780	-1,777	-1,771	-1,781	-1,766
Adjustment for currency impact	0	-151	0	28	0
Adjustment for					
Revenue under fair value accounting	-3	-3	-5	-5	-11
Acquisition-related charges	-587	-587	-680	-680	-738
Share-based payment expenses	-1,120	-1,120	-785	-785	-724
Restructuring	-182	-182	-28	-28	-621
<b>Operating profit</b>	<b>4,877</b>	<b>4,877</b>	<b>5,135</b>	<b>5,135</b>	<b>4,252</b>
Other non-operating income/expense, net	-36	-36	-234	-234	-256
Financial income, net	185	185	-38	-38	-5
<b>Profit before tax</b>	<b>5,026</b>	<b>5,026</b>	<b>4,863</b>	<b>4,863</b>	<b>3,991</b>

## Geographic Information

The amounts for revenue by region in the following tables are based on the location of customers. The regions in the following table are broken down into the regions EMEA (Europe, Middle

East, and Africa), Americas (North America and Latin America), and APJ (Asia Pacific Japan).

## Revenue by Region

€ millions	Cloud Subscriptions and Support Revenue			Cloud and Software Revenue		
	2017	2016	2015	2017	2016	2015
EMEA	1,029	703	507	8,759	8,193	7,622
Americas	2,321	2,000	1,579	7,666	7,366	6,929
APJ	419	290	200	3,124	2,865	2,663
<b>SAP Group</b>	<b>3,769</b>	<b>2,993</b>	<b>2,286</b>	<b>19,549</b>	<b>18,424</b>	<b>17,214</b>

## Total Revenue by Region

€ millions	2017	2016	2015
Germany	3,352	3,034	2,771
Rest of EMEA	7,063	6,721	6,409
<b>EMEA</b>	<b>10,415</b>	<b>9,755</b>	<b>9,181</b>
United States	7,436	7,167	6,750
Rest of Americas	1,911	1,763	1,678
<b>Americas</b>	<b>9,347</b>	<b>8,931</b>	<b>8,428</b>
Japan	885	825	667
Rest of APJ	2,814	2,552	2,517
<b>APJ</b>	<b>3,699</b>	<b>3,377</b>	<b>3,185</b>
<b>SAP Group</b>	<b>23,461</b>	<b>22,062</b>	<b>20,793</b>

## Non-Current Assets by Region

€ millions	2017	2016
Germany	3,739	2,655
Rest of EMEA	4,338	5,281
<b>EMEA</b>	<b>8,077</b>	<b>7,936</b>
United States	19,303	21,910
Rest of Americas	201	165
<b>Americas</b>	<b>19,504</b>	<b>22,075</b>
<b>APJ</b>	<b>723</b>	<b>685</b>
<b>SAP Group</b>	<b>28,304</b>	<b>30,695</b>

The table above shows non-current assets excluding financial instruments, deferred tax assets, post-employment benefit assets, and rights arising under insurance contracts.

For information about the breakdown of our number of employees by region, see [Note \(7\)](#).



## (29) Board of Directors

### Executive Board

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP on December 31, 2017

#### Bill McDermott

Chief Executive Officer  
Strategy, Governance, Digital Government, Business Development, Corporate Development, Global Corporate Affairs, Corporate Audit and Global Marketing

Board of Directors, ANSYS, Inc., Canonsburg, PA, United States  
Board of Directors, Under Armour, Inc., Baltimore, MD, United States  
Board of Directors, Dell Secure Works, Atlanta, GA, United States

#### Robert Enslin

Cloud Business Group  
Concur, Ariba, Fieldglass (Sales, Development, Delivery), Customer Engagement and Commerce (CEC) and SuccessFactors (Development and Delivery), Industry Go-to-Market

Board of Directors, Discovery Limited, Johannesburg, South Africa (from May 1, 2017)  
Board of Directors, Docker, Inc., San Francisco, CA, United States (from July 17, 2017)

#### Adaire Fox-Martin (from May 1, 2017)

Global Customer Operations (EMEA, MEE, and Greater China)  
Global Sales, Regional Field Organizations, Line of Business Solutions Sales

#### Christian Klein (from January 1, 2018)

Chief Operating Officer  
Global Business Operations  
Digital Transformation, Business Process Simplification, IT Services, Portfolio & Pricing

#### Michael Kleinemeier

Digital Business Services  
Global Consulting Delivery, Global and Regional Support and Premium Engagement, Maintenance Go-to-Market, Global User Groups, Mobile Services

Supervisory Board, innogy SE, Essen, Germany

#### Bernd Leukert

Products & Innovation  
Global Development and Delivery of SAP Technology and Products, Strategic Innovation Initiatives, Design and User Experience

Supervisory Board, DFKI (Deutsches Forschungszentrum für Künstliche Intelligenz GmbH), Kaiserslautern, Germany  
Supervisory Board, Bertelsmann SE & Co. KGaA, Guetersloh, Germany (from January 27, 2017)  
Supervisory Board TomTom N.V., Amsterdam, the Netherlands (from September 1, 2017)

#### Jennifer Morgan (from May 1, 2017)

Global Customer Operations (Americas and APJ)  
Global Sales, Regional Field Organizations, Line of Business Solutions Sales

Board of Directors, Bank of New York Mellon, New York, NY, United States

#### Luka Mucic

Chief Financial Officer

Global Finance and Administration including Investor Relations and Data Protection & Privacy

#### Stefan Ries

Chief Human Resources Officer, Labor Relations Director

HR Strategy, Business Transformation, Leadership Development, Talent Development

Supervisory Board, Rhein-Neckar Loewen GmbH, Kronau, Germany

### Executive Board Members Who Left During 2017

#### Steve Singh (until April 30, 2017)

### Supervisory Board

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP on December 31, 2017

#### Prof. Dr. h.c. mult. Hasso Plattner <sup>2), 4), 6), 7), 8)</sup>

Chairman

**Margret Klein-Magar** <sup>1), 2), 4)</sup>

Deputy Chairperson

Vice President, Head of SAP Alumni Relations

Chairperson of the Spokespersons' Committee of Senior Managers of SAP SE

**Pekka Ala-Pietilä** <sup>4), 5), 6), 7)</sup>

Chairman of the Board of Directors, Huhtamäki Oyj, Espoo, Finland

Board of Directors, Pöyry Plc, Vantaa, Finland (until March 9, 2017)

Chairman of the Board of Directors, CVON Group Limited, London, United Kingdom (until December 19, 2017)

Board of Directors, CVON Limited, London, United Kingdom (until December 19, 2017)

Chairman of the Board of Directors, CVON Innovation Services Oy, Turku, Finland (until December 19, 2017)

Board of Directors, CVON Future Limited, London, United Kingdom (until December 19, 2017)

Chairman of the Board of Directors, BMA Platform International Ltd., London, United Kingdom (until April 18, 2017)

Chairman of the Board of Directors, Sanoma Corporation, Helsinki, Finland

Chairman of the Board of Directors, Netcompany A/S, Copenhagen, Denmark (from October 31, 2017)

**Panagiotis Bissiritsas** <sup>1), 3), 4), 5)</sup>

Support Expert

Member of Works Council SAP SE

**Martin Duffek** <sup>1), 3), 4), 8)</sup>

Product Manager

**Aicha Evans (from July 1, 2017)** <sup>2), 4)</sup>

Senior Vice President and Chief Strategy Officer, Intel Corporation, Santa Clara, CA, United States

**Prof. Anja Feldmann** <sup>4), 8)</sup>

Professor at the Electrical Engineering and Computer Science Faculty at the Technische Universität Berlin (until December 31, 2017)

Director of Max-Planck-Institut für Informatik, Saarbrücken, Germany (from January 1, 2018)

**Prof. Dr. Wilhelm Haarmann** <sup>2), 5), 7), 8)</sup>

Attorney-at-Law, Certified Public Auditor, Certified Tax Advisor

Linklaters LLP, Rechtsanwälte, Notare, Steuerberater, Frankfurt am Main, Germany

**Andreas Hahn** <sup>1), 2), 4)</sup>

Product Expert, IoT Standards,

Member of Works Council SAP SE

**Prof. Dr. Gesche Joost** <sup>4), 8)</sup>

Professor for Design Research and Head of the Design Research Lab, University of Arts Berlin

Supervisory Board, ClearVAT Aktiengesellschaft, Berlin, Germany (until December 1, 2017)

Supervisory Board, Ottobock SE & Co. KG (in course of incorporation), Duderstadt, Germany (from October 24, 2017)

Supervisory Board, ING-DiBa AG, Frankfurt, Germany (from December 1, 2017)

**Lars Lamadé** <sup>1), 2), 7), 8)</sup>

Head of Sponsorships Europe and Asia

Supervisory Board, Rhein-Neckar Loewen GmbH, Kronau, Germany

**Bernard Liautaud** <sup>2), 4), 6)</sup>

Managing Partner Balderton Capital, London, United Kingdom

Board of Directors, nlyte Software Ltd., London, United Kingdom

Board of Directors, Talend SA, Suresnes, France

Board of Directors, Wonga Group Ltd., London, United Kingdom

Board of Directors, SCYTL Secure Electronic Voting SA, Barcelona, Spain

Board of Directors, Vestiaire Collective SA, Levallois-Perret, France

Board of Directors, Dashlane, Inc., New York, NY, United States

Board of Directors, Recorded Future, Inc., Cambridge, MA, United States

Board of Directors, eWise Group, Inc., Redwood City, CA, United States

Board of Directors, Qubit Digital Ltd., London, United Kingdom

Board of Directors, Stanford University, Stanford, CA, United States

Board of Directors, Opbeat Inc., San Francisco, CA, United States (until May 22, 2017)

Board of Directors, Aircall.io, New York City, NY, United States

Board of Directors, Virtuo Technologies, Paris, France (from July 26, 2017)

**Christine Regitz** <sup>1), 4), 8)</sup>

Vice President User Experience  
Chief Product Expert

**Dr. Erhard Schipporeit** <sup>3), 5), 7)</sup>

Independent Management Consultant

Supervisory Board, Talanx AG, Hanover, Germany  
Supervisory Board, Deutsche Börse AG, Frankfurt am Main, Germany  
Supervisory Board, HDI V.a.G., Hanover, Germany  
Supervisory Board, Hannover Rückversicherung SE, Hanover, Germany  
Supervisory Board, Fuchs Petrolub SE, Mannheim, Germany  
Supervisory Board, BDO AG, Hamburg, Germany  
Supervisory Board, RWE AG, Essen, Germany  
Chairman of the Supervisory Board, innogy SE, Essen, Germany (from January 1, 2018)

**Robert Schuschnig-Fowler** <sup>1), 5), 8)</sup>

Account Manager, Senior Support Consultant  
Deputy Chairman of SAP SE Works Council Europe  
Member of Works Council SAP SE

**Dr. Sebastian Sick** <sup>1), 2), 5), 7)</sup>

Head of Company Law Unit, Hans Böckler Foundation

Supervisory Board, Georgsmarienhütte GmbH,  
Georgsmarienhütte, Germany (until June 13, 2017)

**Pierre Thiollet** <sup>1), 4)</sup>

Webmaster (P&I)  
Member of the SAP France Works Council  
Secretary of CHSCT (Hygiene, Security and Work Conditions Committee)

**Prof. Dr.-Ing. Dr.-Ing. E. h. Klaus Wucherer** <sup>3)</sup>

Managing Director of Dr. Klaus Wucherer Innovations- und Technologieberatung GmbH, Erlangen, Germany

Deputy Chairman of the Supervisory Board, HEITEC AG, Erlangen, Germany  
Deputy Chairman of the Supervisory Board, LEONI AG, Nuremberg, Germany (until May 11, 2017)  
Chairman of the Supervisory Board, Festo AG & Co. KG, Esslingen, Germany

**Supervisory Board Members Who Left During 2017****Jim Hagemann Snabe (until June 30, 2017)**

Information as at December 31, 2017

- <sup>1)</sup> Elected by the employees  
<sup>2)</sup> Member of the Company's General and Compensation Committee  
<sup>3)</sup> Member of the Company's Audit Committee  
<sup>4)</sup> Member of the Company's Technology and Strategy Committee  
<sup>5)</sup> Member of the Company's Finance and Investment Committee  
<sup>6)</sup> Member of the Company's Nomination Committee  
<sup>7)</sup> Member of the Company's Special Committee  
<sup>8)</sup> Member of the Company's People and Organization Committee

Allocating the fair value of the share-based payments to the respective years they are economically linked to, the total compensation of the Executive Board members for the years 2017, 2016, and 2015 was as follows:

**Executive Board Compensation**

€ thousands	2017	2016	2015
Short-term employee benefits	16,634	19,206	15,137
Share-based payment <sup>1)</sup>	25,723	23,942	10,365
<b>Subtotal<sup>1)</sup></b>	<b>42,357</b>	<b>43,148</b>	<b>25,502</b>
Post-employment benefits	1,312	2,398	1,278
Thereof defined-benefit	423	1,792	288
Thereof defined-contribution	889	606	990
<b>Total<sup>1)</sup></b>	<b>43,669</b>	<b>45,546</b>	<b>26,780</b>

<sup>1)</sup> Portion of total executive compensation allocated to the respective year

The share-based payment amounts disclosed above for 2017 and 2016 are based on the grant date fair value of the restricted share units (RSUs) and performance share units (PSUs), respectively, issued to Executive Board members during the year under the LTI 2016 Plan, effective January 1, 2016.

The Executive Board members already received, in 2012, the LTI grants for the years 2012 to 2015 subject to continuous service as member of the Executive Board in the respective years. Although these grants are compensation for the Executive Board members in the respective years, section 314 of the German Commercial Code (HGB) required them to be included in the total compensation number for the year of grant. Upon his appointment to the Executive Board in 2015, Michael Kleinemeier received a grant related to 2015. Vesting of the LTI grants is dependent on the respective Executive Board member's continuous service for the Company.

The share-based payment for 2015 as defined in section 314 of the German Commercial Code (HGB) amounts to €263,200 and 4,622 RSUs, respectively, based on the allocation for 2015 for Michael Kleinemeier, which was granted in 2015 in line with his appointment to the Executive Board.

Considering the grant date fair value of the RSUs allocated in 2015 instead of the economically allocated amount of share-based payments in the table above, the sum of short-term employee benefits and share-based payment amounts to €15,400,400 and the total Executive Board compensation amounts to €16,678,400.

### Share-Based Payment for Executive Board Members

	2017	2016	2015
Number of RSUs granted	117,929	147,041	192,345
Number of PSUs granted	176,886	220,561	NA
Total expense in € thousands	19,068	14,233	22,310

In the table above, the share-based payment expense is the amount recorded in profit or loss under IFRS 2 (Share Based Payments) in the respective period.

The defined benefit obligation (DBO) for pensions to Executive Board members and the annual pension entitlement of the members of the Executive Board on reaching age 60 based on entitlements from performance-based and salary-linked plans were as follows:

### Retirement Pension Plan for Executive Board Members

€ thousands	2017	2016	2015
DBO December 31	3,191	10,739	8,948
Annual pension entitlement	148	470	427

The total annual compensation of the Supervisory Board members is as follows:

### Supervisory Board Compensation

€ thousands	2017	2016	2015
Total compensation	3,663	3,652	3,728
Thereof fixed compensation	3,135	3,135	3,250
Thereof committee remuneration	528	517	479

The Supervisory Board members do not receive any share-based payment for their services. As far as members who are employee representatives on the Supervisory Board receive

share-based payment, such compensation is for their services as employees only and is unrelated to their status as members of the Supervisory Board.

### Payments to/DBO for Former Executive Board Members

€ thousands	2017	2016	2015
Payments	1,997	1,667	1,580
DBO December 31	39,993	33,935	32,758

SAP did not grant any compensation advance or credit to, or enter into any commitment for the benefit of, any member of the Executive Board or Supervisory Board in 2017, 2016, or 2015.

Detailed information about the different elements of the compensation are disclosed in the Compensation Report, which is part of our Management Report and of our Annual Report on Form 20-F, both of which are available on SAP's Web site.

## (30) Related Party Transactions

Certain Supervisory Board members of SAP SE currently hold, or held within the last year, positions of significant responsibility with other entities. We have relationships with certain of these entities in the ordinary course of business, whereby we buy and sell products, assets, and services at prices believed to be consistent with those negotiated at arm's length between unrelated parties.

Companies controlled by Hasso Plattner, chairman of our Supervisory Board and Chief Software Advisor of SAP, engaged in the following transactions with SAP: providing consulting services to SAP, receiving sport sponsoring from SAP, making purchases of SAP products and services.

Wilhelm Haarmann practices as a partner in the law firm Linklaters LLP in Frankfurt am Main, Germany. SAP occasionally purchased and purchases legal and similar services from Linklaters.

Occasionally, members of the Executive Board of SAP SE obtain services from SAP for which they pay a consideration consistent with those negotiated at arm's length between unrelated parties.

All amounts related to the abovementioned transactions were immaterial to SAP in all periods presented in these consolidated financial statements.

In total, we sold products and services to companies controlled by members of the Supervisory Board in the amount of €2 million (2016: €1 million), we bought products and services from such companies in the amount of €5 million (2016: €3 million), and we provided sponsoring and other financial

support to such companies in the amount of €4 million (2016: €4 million). Outstanding balances at year end from transactions with such companies were €0 million (2016: €0 million) for amounts owed to such companies and €0 million (2016: €0 million) for amounts owed by such companies. All of these balances are unsecured and interest-free and settlement is expected to occur in cash. Commitments (the longest of which is for six years) made by us to purchase further goods or services from these companies and to provide further sponsoring and other financial support amount to €21 million as at December 31, 2017 (2016: €28 million).

In total, we sold services to members of the Executive Board and the Supervisory Board in the amount of €0 million (2016: €0 million), and we received services from members of the Supervisory Board (including services from employee representatives on the Supervisory Board in their capacity as employees of SAP) in the amount of €1 million (2016: €1 million). Amounts owed to Supervisory Board members from these transactions were €0 million as at December 31, 2017

(2016: €0 million). All of these balances are unsecured and interest-free and settlement is expected to occur in cash.

For information about the compensation of our Executive Board and Supervisory Board members, see [Note \(29\)](#).

## (31) Principal Accountant Fees and Services

At the Annual General Meeting of Shareholders held on May 10, 2017, our shareholders elected KPMG AG Wirtschaftsprüfungsgesellschaft as SAP's independent auditor for 2017. KPMG AG Wirtschaftsprüfungsgesellschaft has been the company's principal auditor since the fiscal year 2002. Dr. Böttcher has signed as auditor responsible for the audit since the fiscal year 2013, and Ms. Herold has signed as auditor since the fiscal year 2016. KPMG AG Wirtschaftsprüfungsgesellschaft and other firms in the global KPMG network charged the following fees to SAP for audit and other professional services related to 2017 and the previous years:

### Fees for Audit and Other Professional Services

€ millions	2017			2016			2015		
	KPMG AG (Germany)	Foreign KPMG Firms	Total	KPMG AG (Germany)	Foreign KPMG Firms	Total	KPMG AG (Germany)	Foreign KPMG Firms	Total
Audit fees	3	7	10	3	6	9	3	6	9
Audit-related fees	0	0	0	0	1	1	0	0	0
Tax fees	0	0	0	0	0	0	0	0	0
All other fees	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>3</b>	<b>6</b>	<b>9</b>

Audit fees are the aggregate fees charged by KPMG for auditing our consolidated financial statements and the statutory financial statements of SAP SE and its subsidiaries. Audit-related fees are fees charged by KPMG for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported under audit fees.

## (32) German Code of Corporate Governance

The German federal government published the German Code of Corporate Governance in February 2002 and introduced a commission that amends the Code from time to time. The Code contains statutory requirements and a number of recommendations and suggestions. Only the legal requirements are binding for German companies. With regard to the recommendations, the German Stock Corporation Act, section 161, requires that every year, listed companies publicly state the extent to which they have implemented them. Companies can deviate from the suggestions without having to make any public statements.

In 2017 and 2016, our Executive Board and Supervisory Board issued the required declarations of implementation. The declaration for 2017 was issued on October 27, 2017. These statements are available on our Web site:

<http://www.sap.com/corporate-en/investors/governance>.

## (33) Events After the Reporting Period

On January 30, 2018, SAP announced that SAP America, Inc. has entered into an agreement to acquire Callidus Software Inc. The per share purchase price of \$36.00 represents a 21% premium over the 30-day volume weighted average price per share and a 28% premium over Callidus Software Inc.'s 90-day volume weighted average price per share. The per share price represents an enterprise value of approximately \$2.4 billion. SAP safeguards funding of the transaction with existing cash balances and an acquisition term loan and intends to refinance substantial portions of the purchase price with capital market transactions. The transaction is expected to close in the second quarter of 2018, subject to approval from Callidus Software Inc. stockholders, clearances by the relevant regulatory authorities, and other customary closing conditions.

Callidus Software Inc. is a leader in cloud-based sales, marketing, learning, and customer experience solutions. Callidus Software Inc. offers a complete suite of solutions that identify the right leads, ensure proper territory and quota distribution, enable sales forces, automate configure price quote, and streamline sales compensation. Callidus Software Inc. is a synergistic addition to SAP's portfolio and significantly strengthens SAP's position in the customer relationship management (CRM) space.

Other than that, no events have occurred since December 31, 2017, that have a material impact on the Company's Consolidated Financial Statements.

# (34) Subsidiaries and Other Equity Investments

## Subsidiaries

Name and Location of Company	Ownership	Total Revenue in 2017 <sup>1)</sup>	Profit/Loss (-) After Tax for 2017 <sup>1)</sup>	Total Equity as at 12/31/2017 <sup>1)</sup>	Number of Employees as at 12/31/2017 <sup>2)</sup>	Foot-note
	%	€ thousands	€ thousands	€ thousands		
<b>Major Subsidiaries</b>						
Ariba, Inc., Palo Alto, CA, United States	100.0	1,128,586	163,516	3,580,181	1,763	
Concur Technologies, Inc., Bellevue, WA, United States	100.0	1,455,188	130,063	7,069,785	3,339	
LLC SAP CIS, Moscow, Russia	100.0	468,361	8,711	51,613	826	
SAP (Schweiz) AG, Biel, Switzerland	100.0	818,999	-338,934	67,311	721	
SAP (UK) Limited, Feltham, United Kingdom	100.0	1,068,795	7,523	-65,176	1,678	<sup>10)</sup>
SAP America, Inc., Newtown Square, PA, United States	100.0	5,248,201	-344,644	13,008,339	7,801	
SAP Asia Pte Ltd, Singapore, Singapore	100.0	441,506	-28,550	-26,721	1,151	
SAP Australia Pty Ltd, Sydney, Australia	100.0	707,027	-82,950	68,050	1,257	
SAP Brasil Ltda, São Paulo, Brazil	100.0	572,099	-66,298	-62,107	1,762	
SAP Canada, Inc., Toronto, Canada	100.0	808,782	44,223	467,224	2,884	
SAP China Co., Ltd., Shanghai, China	100.0	892,266	-83,320	-117,810	5,185	
SAP Deutschland SE & Co. KG, Walldorf, Germany	100.0	3,950,051	621,834	1,442,856	4,513	<sup>7), 9)</sup>
SAP France, Levallois-Perret, France	100.0	1,120,814	170,321	1,579,837	1,531	
SAP Hungary Rendszerek, Alkalmazások és Termékek az Adatfeldolgozásban Informatikai Kft., Budapest, Hungary	100.0	89,454	1,748	17,104	845	
SAP India Private Limited, Bangalore, India	100.0	577,685	61,846	279,095	1,876	
SAP Industries, Inc., Newtown Square, PA, United States	100.0	633,506	39,032	542,364	328	
SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., Vimercate, Italy	100.0	547,575	27,499	387,063	672	
SAP Japan Co., Ltd., Tokyo, Japan	100.0	900,807	74,045	99,896	1,182	
SAP Labs India Private Limited, Bangalore, India	100.0	432,654	46,791	99,112	7,451	
SAP Labs, LLC, Palo Alto, CA, United States	100.0	673,690	44,162	344,895	2,108	
SAP México S.A. de C.V., Mexico City, Mexico	100.0	382,974	17,577	6,627	777	<sup>12)</sup>
SAP Nederland B.V., 's-Hertogenbosch, the Netherlands	100.0	573,162	39,684	92,475	594	<sup>11)</sup>
SAP Service and Support Centre (Ireland) Limited, Dublin, Ireland	100.0	152,885	10,766	49,312	1,460	
SuccessFactors, Inc., South San Francisco, CA, United States	100.0	958,049	269,541	3,247,742	1,017	

Name and Location of Company	Owner-ship %	Foot-note
<b>Other Subsidiaries <sup>3)</sup></b>		
"SAP Kazakhstan" LLP, Almaty, Kazakhstan	100.0	
110405, Inc., Newtown Square, PA, United States	100.0	
Abakus Europe Limited, London, United Kingdom	100.0	4)
Abakus Ukraine Limited Liability Company, Kiev, Ukraine	100.0	4)
Ambin Properties Proprietary Limited, Johannesburg, South Africa	100.0	
Ariba Czech s.r.o., Prague, Czech Republic	100.0	
Ariba India Private Limited, Gurgaon, India	100.0	
Ariba International Holdings, Inc., Wilmington, DE, United States	100.0	
Ariba International Singapore Pte Ltd, Singapore, Singapore	100.0	
Ariba International, Inc., Wilmington, DE, United States	100.0	
Ariba Slovak Republic s.r.o., Košice, Slovakia	100.0	
Ariba Software Technology Services (Shanghai) Co., Ltd., Shanghai, China	100.0	
Ariba Technologies India Private Limited, Bangalore, India	100.0	
Ariba Technologies Netherlands B.V., 's-Hertogenbosch, the Netherlands	100.0	11)
Beijing Zhang Zhong Hu Dong Information Technology Co., Ltd., Beijing, China	0	5)
b-process, Paris, France	100.0	
Business Objects Holding B.V., 's-Hertogenbosch, the Netherlands	100.0	11)
Business Objects Option LLC, Wilmington, DE, United States	100.0	
Business Objects Software Limited, Dublin, Ireland	100.0	
Christie Partners Holding C.V., 's-Hertogenbosch, the Netherlands	100.0	
ClearTrip Inc. (Mauritius), Ebene, Mauritius	57.9	
ClearTrip Inc., George Town, Cayman Islands	57.9	
Cleartrip MEA FZ LLC, Dubai, United Arab Emirates	57.9	
ClearTrip Private Limited, Mumbai, India	57.9	
CNQR Operations Mexico S. de. R.L. de. C.V., San Pedro Garza Garcia, Mexico	100.0	
Concur (Austria) GmbH, Vienna, Austria	100.0	
Concur (Canada), Inc., Toronto, Canada	100.0	
Concur (France) SAS, Paris, France	100.0	
Concur (Germany) GmbH, Frankfurt am Main, Germany	100.0	8), 9)
Concur (Japan) Ltd., Bunkyo-ku, Japan	74.4	
Concur (New Zealand) Limited, Wellington, New Zealand	100.0	
Concur (Philippines) Inc., Makati City, Philippines	100.0	
Concur (Switzerland) GmbH, Zurich, Switzerland	100.0	
Concur Czech (s.r.o.), Prague, Czech Republic	100.0	
Concur Holdings (France) SAS, Paris, France	100.0	
Concur Holdings (Netherlands) B.V., Amsterdam, the Netherlands	100.0	11)

Name and Location of Company	Owner-ship %	Foot-note
Concur Technologies (Australia) Pty. Limited, Sydney, Australia	100.0	
Concur Technologies (Hong Kong) Limited, Hong Kong, China	100.0	
Concur Technologies (India) Private Limited, Bangalore, India	100.0	
Concur Technologies (Singapore) Pte Ltd, Singapore, Singapore	100.0	12)
Concur Technologies (UK) Limited, London, United Kingdom	100.0	10)
ConTgo Consulting Limited, London, United Kingdom	100.0	10)
ConTgo Limited, London, United Kingdom	100.0	10)
ConTgo Pty. Ltd., Sydney, Australia	100.0	
Crystal Decisions (Ireland) Limited, Dublin, Ireland	100.0	
Crystal Decisions Holdings Limited, Dublin, Ireland	100.0	
Crystal Decisions UK Limited, London, United Kingdom	100.0	
EssCubed Procurement Pty. Ltd., Johannesburg, South Africa	100.0	
Extended Systems, Inc., San Ramon, CA, United States	100.0	
Fedem Technology AS, Trondheim, Norway	100.0	
Fieldglass Europe Limited, London, United Kingdom	100.0	10)
Financial Fusion, Inc., San Ramon, CA, United States	100.0	
FreeMarkets Ltda., São Paulo, Brazil	100.0	
Gigya Australia Pty Ltd, Sydney, Australia	100.0	4)
Gigya Ltd., Tel Aviv, Israel	100.0	4)
Gigya UK Ltd, London, United Kingdom	100.0	4), 10)
Gigya, Inc., Mountain View, CA, United States	100.0	4)
GlobalExpense Limited, London, United Kingdom	100.0	10)
Hipmunk, Inc., San Francisco, CA, United States	100.0	
hybris (US) Corp., Wilmington, DE, United States	100.0	
hybris GmbH, Munich, Germany	100.0	8), 9)
Inight Federal Systems Group, Inc., Wilmington, DE, United States	100.0	
LLC "SAP Labs", Moscow, Russia	100.0	
LLC "SAP Ukraine", Kiev, Ukraine	100.0	
Merlin Systems Oy, Espoo, Finland	100.0	
Multiposting Sp.z o.o., Warsaw, Poland	100.0	
Nihon Ariba K.K., Tokyo, Japan	100.0	
OutlookSoft Deutschland GmbH, Walldorf, Germany	100.0	
Plat.One Inc., Palo Alto, CA, United States	100.0	
Plat.One Lab Srl, Bogliasco, Italy	100.0	
Plateau Systems LLC, South San Francisco, CA, United States	100.0	
PT SAP Indonesia, Jakarta, Indonesia	99.0	
PT Sybase 365 Indonesia, Jakarta, Indonesia	100.0	
Quadrem Africa Pty. Ltd., Johannesburg, South Africa	100.0	
Quadrem Brazil Ltda., Rio de Janeiro, Brazil	100.0	
Quadrem Chile Ltda., Santiago de Chile, Chile	100.0	



Name and Location of Company	Owner-ship	Foot-note
	%	
Quadrem Colombia SAS, Bogotá, Colombia	100.0	
Quadrem International Ltd., Hamilton, Bermuda	100.0	
Quadrem Netherlands B.V., Amsterdam, the Netherlands	100.0	<sup>11)</sup>
Quadrem Overseas Cooperatief U.A., Amsterdam, the Netherlands	100.0	
Quadrem Peru S.A.C., Lima, Peru	100.0	
Ruan Lian Technologies (Beijing) Co., Ltd., Beijing, China	100.0	
SAP (Beijing) Software System Co., Ltd., Beijing, China	100.0	
SAP Andina y del Caribe, C.A., Caracas, Venezuela	100.0	<sup>12)</sup>
SAP Argentina S.A., Buenos Aires, Argentina	100.0	<sup>12)</sup>
SAP Asia (Vietnam) Co., Ltd., Ho Chi Minh City, Vietnam	100.0	
SAP AZ LLC, Baku, Azerbaijan	100.0	
SAP Belgium NV/SA, Brussels, Belgium	100.0	
SAP Beteiligungs GmbH, Walldorf, Germany	100.0	
SAP Bulgaria EOOD, Sofia, Bulgaria	100.0	
SAP Business Compliance Services GmbH, Siegen, Germany	100.0	
SAP Business Services Center Nederland B.V., 's-Hertogenbosch, the Netherlands	100.0	<sup>11)</sup>
SAP Chile Limitada, Santiago, Chile	100.0	<sup>12)</sup>
SAP China Holding Co., Ltd., Beijing, China	100.0	
SAP Colombia S.A.S., Bogotá, Colombia	100.0	<sup>12)</sup>
SAP Commercial Services Ltd., Valletta, Malta	100.0	
SAP Costa Rica, S.A., San José, Costa Rica	100.0	<sup>12)</sup>
SAP ČR, spol. s r.o., Prague, Czech Republic	100.0	
SAP Cyprus Limited, Nicosia, Cyprus	100.0	
SAP d.o.o., Zagreb, Croatia	100.0	
SAP Danmark A/S, Copenhagen, Denmark	100.0	
SAP Dritte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	
SAP East Africa Limited, Nairobi, Kenya	100.0	<sup>12)</sup>
SAP Egypt LLC, Cairo, Egypt	100.0	
SAP EMEA Inside Sales S.L., Barcelona, Spain	100.0	
SAP Erste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	<sup>8), 9)</sup>
SAP España – Sistemas, Aplicaciones y Productos en la Informática, S.A., Madrid, Spain	100.0	
SAP Estonia OÜ, Tallinn, Estonia	100.0	
SAP Financial, Inc., Toronto, Canada	100.0	
SAP Finland Oy, Espoo, Finland	100.0	
SAP Foreign Holdings GmbH, Walldorf, Germany	100.0	
SAP France Holding, Levallois-Perret, France	100.0	
SAP Global Marketing, Inc., New York, NY, United States	100.0	
SAP Hellas S.A., Athens, Greece	100.0	
SAP Holdings (UK) Limited, Feltham, United Kingdom	100.0	<sup>10)</sup>
SAP Hong Kong Co., Ltd., Hong Kong, China	100.0	
SAP Hosting Beteiligungs GmbH, St. Leon-Rot, Germany	100.0	<sup>8), 9)</sup>

Name and Location of Company	Owner-ship	Foot-note
	%	
SAP India (Holding) Pte Ltd, Singapore, Singapore	100.0	
SAP International Panama, S.A., Panama City, Panama	100.0	
SAP International, Inc., Miami, FL, United States	100.0	
SAP Investments, Inc., Wilmington, DE, United States	100.0	
SAP Ireland Limited, Dublin, Ireland	100.0	
SAP Ireland US - Financial Services Designated Activity Company, Dublin, Ireland	100.0	
SAP Israel Ltd., Ra'anana, Israel	100.0	<sup>12)</sup>
SAP Korea Ltd., Seoul, South Korea	100.0	
SAP Labs Bulgaria EOOD, Sofia, Bulgaria	100.0	
SAP Labs Finland Oy, Espoo, Finland	100.0	
SAP Labs France SAS, Mougins, France	100.0	
SAP Labs Israel Ltd., Ra'anana, Israel	100.0	
SAP Labs Korea, Inc., Seoul, South Korea	100.0	
SAP Latvia SIA, Riga, Latvia	100.0	
SAP Malaysia Sdn. Bhd., Kuala Lumpur, Malaysia	100.0	
SAP Malta Investments Ltd., Valletta, Malta	100.0	
SAP MENA FZ L.L.C., Dubai, United Arab Emirates	100.0	
SAP Middle East and North Africa L.L.C., Dubai, United Arab Emirates	49.0	<sup>5), 12)</sup>
SAP National Security Services, Inc., Newtown Square, PA, United States	100.0	
SAP Nederland Holding B.V., 's-Hertogenbosch, the Netherlands	100.0	<sup>11)</sup>
SAP New Zealand Limited, Auckland, New Zealand	100.0	
SAP Norge AS, Lysaker, Norway	100.0	
SAP North West Africa Ltd, Casablanca, Morocco	100.0	
SAP Österreich GmbH, Vienna, Austria	100.0	
SAP Perú S.A.C., Lima, Peru	100.0	<sup>12)</sup>
SAP Philippines, Inc., Makati City, Philippines	100.0	
SAP Polska Sp. z o.o., Warsaw, Poland	100.0	
SAP Portals Europe GmbH, Walldorf, Germany	100.0	
SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany	100.0	
SAP Portals Israel Ltd., Ra'anana, Israel	100.0	
SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal	100.0	
SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany	100.0	
SAP Public Services Hungary Kft., Budapest, Hungary	100.0	
SAP Public Services, Inc., Washington, DC, United States	100.0	
SAP Puerto Rico GmbH, Walldorf, Germany	100.0	<sup>8), 9), 12)</sup>
SAP Retail Solutions Beteiligungsgesellschaft GmbH, Walldorf, Germany	100.0	
SAP Romania SRL, Bucharest, Romania	100.0	
SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia	100.0	

Name and Location of Company	Owner-ship	Foot-note
	%	
SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia	75.0	
SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	<sup>8), 9)</sup>
SAP Services s.r.o., Prague, Czech Republic	100.0	
SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	<sup>8), 9)</sup>
SAP sistemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia	100.0	
SAP Slovensko s.r.o., Bratislava, Slovakia	100.0	
SAP Software and Services LLC, Doha, Qatar	49.0	<sup>5)</sup>
SAP Svenska Aktiebolag, Stockholm, Sweden	100.0	<sup>12)</sup>
SAP System Application and Products Myanmar Ltd., Yangon, Myanmar	100.0	<sup>4)</sup>
SAP Systems, Applications and Products in Data Processing (Thailand) Ltd., Bangkok, Thailand	100.0	
SAP Taiwan Co., Ltd., Taipei, Taiwan	100.0	
SAP Technologies Inc., Palo Alto, CA, United States	100.0	
SAP Training and Development Institute FZCO, Dubai, United Arab Emirates	100.0	
SAP Türkiye Yazılım Üretim ve Ticaret A.Ş., Istanbul, Turkey	100.0	
SAP UAB, Vilnius, Lithuania	100.0	
SAP Ventures Investment GmbH, Walldorf, Germany	100.0	<sup>8), 9)</sup>
SAP Vierte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	
SAP West Balkans d.o.o., Belgrade, Serbia	100.0	
SAP Zweite Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	<sup>8), 9)</sup>
SAP.io Fund, L.P., San Francisco, CA, United States	0	<sup>4), 6)</sup>
Sapphire SAP HANA Fund of Funds, L.P., Palo Alto, CA, United States	0	<sup>6)</sup>
Sapphire Ventures Fund I, L.P., Palo Alto, CA, United States	0	<sup>6)</sup>
Sapphire Ventures Fund II, L.P., Palo Alto, CA, United States	0	<sup>6)</sup>
Sapphire Ventures Fund III, L.P., Palo Alto, CA, United States	0	<sup>4), 6)</sup>
SAPV (Mauritius), Ebene, Mauritius	0	<sup>6)</sup>
SuccessFactors (Philippines), Inc., Pasig City, Philippines	100.0	
SuccessFactors Asia Pacific Limited, Hong Kong, China	100.0	
SuccessFactors Cayman, Ltd., Grand Cayman, Cayman Islands	100.0	
Sybase 365 Ltd., Tortola, British Virgin Islands	100.0	
Sybase 365, LLC, San Ramon, CA, United States	100.0	
Sybase Angola, LDA, Luanda, Angola	100.0	
Sybase Iberia S.L., Madrid, Spain	100.0	
Sybase India Ltd., Mumbai, India	100.0	
Sybase International Holdings Corporation, LLC, San Ramon, CA, United States	100.0	
Sybase Philippines, Inc., Makati City, Philippines	100.0	

Name and Location of Company	Owner-ship	Foot-note
	%	
Sybase Software (India) Private Ltd., Mumbai, India	100.0	
Sybase, Inc., San Ramon, CA, United States	100.0	
Systems Applications Products (Africa Region) Proprietary Limited, Johannesburg, South Africa	100.0	
Systems Applications Products (Africa) Proprietary Limited, Johannesburg, South Africa	100.0	
Systems Applications Products (South Africa) Proprietary Limited, Johannesburg, South Africa	70.0	<sup>12)</sup>
Systems Applications Products Nigeria Limited, Victoria Island, Nigeria	100.0	<sup>12)</sup>
TomorrowNow, Inc., Bryan, TX, United States	100.0	
TRX Europe Limited, London, United Kingdom	100.0	<sup>10)</sup>
TRX Luxembourg, S.a.r.l., Luxembourg City, Luxembourg	100.0	
TRX Technologies India Private Limited, Raman Nagar, India	100.0	
TRX UK Limited, London, United Kingdom	100.0	<sup>10)</sup>
TRX, Inc., Bellevue, WA, United States	100.0	
Volume Integration, Inc., VA, United States	100.0	

<sup>1)</sup> These figures are based on our local IFRS financial statements prior to eliminations resulting from consolidation and therefore do not reflect the contribution of these companies included in the Consolidated Financial Statements. The translation of the equity into Group currency is based on period-end closing exchange rates, and on average exchange rates for revenue and net income/loss.

<sup>2)</sup> As at December 31, 2017, including managing directors, in FTE.

<sup>3)</sup> Figures for profit/loss after tax and total equity pursuant to HGB, section 285 and section 313 are not disclosed if they are of minor significance for a fair presentation of the profitability, liquidity, capital resources and financial position of SAP SE, pursuant to HGB, section 313 (2) sentence 3 no. 4 and section 286 (3) sentence 1 no. 1.

<sup>4)</sup> Consolidated for the first time in 2017.

<sup>5)</sup> Agreements with the other shareholders provide that SAP SE fully controls the entity.

<sup>6)</sup> SAP SE does not hold any ownership interests in six structured entities, SAPV (Mauritius), Sapphire SAP HANA Fund of Funds, L.P., Sapphire Ventures Fund I, L.P., Sapphire Ventures Fund II, L.P., Sapphire Ventures Fund III, L.P., and SAP.io Fund, L.P. However, based on the terms of limited partnership agreements under which these entities were established, SAP SE is exposed to the majority of the returns related to their operations and has the current ability to direct these entities' activities that affect these returns, in accordance with IFRS 10 (Consolidated Financial Statements). Accordingly, the results of operations are included in SAP's consolidated financial statements.

<sup>7)</sup> Entity whose personally liable partner is SAP SE.

<sup>8)</sup> Entity with (profit and) loss transfer agreement.

<sup>9)</sup> Pursuant to HGB, section 264 (3) or section 264b, the subsidiary is exempt from applying certain legal requirements to their statutory stand-alone financial statements including the requirement to prepare notes to the financial statements and a review of operations, the requirement of independent audit, and the requirement of public disclosure.

<sup>10)</sup> Pursuant to sections 479A to 479C of the UK Companies Act 2006, the entity is exempt from having its financial statements audited on the basis that SAP SE has provided a guarantee of the entity's liabilities in respect of its financial year ended December 31, 2017.

<sup>11)</sup> Pursuant to article 2:403 of the Dutch Civil Code, the entity is exempt from applying certain legal requirements to their statutory stand-alone financial statements including the requirement to prepare the financial statements, the

requirement of independent audit, and the requirement of public disclosure, on the basis that SAP SE has provided a guarantee of the entity's liabilities in respect of its financial year ended December 31, 2017.

<sup>12)</sup> Entity with support letter issued by SAP SE.

## Other Equity Investments

Name and Location of Company	Ownership
	%
<b>Joint Arrangements and Investments in Associates</b>	
China DataCom Corporation Limited, Guangzhou, China	28.30
Convercent, Inc., Denver, CO, United States	40.93
Procurement Negócios Eletrônicos S/A, Rio de Janeiro, Brazil	17.00
StayNTouch Inc., Bethesda, MD, United States	44.72
Visage Mobile, Inc., Milwaukee, WI, United States	26.62
Yapta, Inc., Seattle, WA, United States	47.01

Name and Location of Company	
<b>Equity Investments with Ownership of at Least 5%</b>	
83North IV, L.P., Hertzalia, Israel	
Alchemist Accelerator Fund I LLC, San Francisco, CA, United States	
All Tax Platform - Solucoes Tributarias S.A., São Paulo, Brazil	
Amplify Partners II L.P., Menlo Park, CA, United States	
Amplify Partners L.P., Menlo Park, CA, United States	
AP Opportunity Fund, LLC, Menlo Park, CA, United States	
Blue Yard Capital I GmbH & Co. KG, Berlin, Germany	
Catchpoint Systems, Inc., New York, NY, United States	
Char Software, Inc., Boston, MA, United States	
Cloudhealth Technologies, Inc., Boston, MA, United States	
Costanoa Venture Capital II L.P., Palo Alto, CA, United States	
Costanoa Venture Capital III L.P., Palo Alto, CA, United States	
Costanoa Venture Capital QZ, LLC, Palo Alto, CA, United States	
Culture Amp, Inc., San Francisco, CA, United States	
Data Collective II L.P., San Francisco, CA, United States	
Data Collective III L.P., San Francisco, CA, United States	
Data Collective IV, L.P., San Francisco, CA, United States	
Dharma Platform, Inc., Washington, DC, United States	
EIT ICT Labs Germany GmbH, Berlin, Germany	
FeedZai S.A., Lisbon, Portugal	
Felix Ventures II, L.P., London, United Kingdom	
Follow Analytics, Inc., San Francisco, CA, United States	
GK Software AG, Schöneck, Germany	
Greater Pacific Capital (Cayman) L.P., Grand Cayman, Cayman Islands	
IDG Ventures USA III, L.P., San Francisco, CA, United States	
IEX Group, Inc., New York, NY, United States	
Inkling Systems, Inc., San Francisco, CA, United States	

Name and Location of Company
InnovationLab GmbH, Heidelberg, Germany
inoWerft Technologie- und Gründerzentrum Walldorf Stiftung GmbH, Walldorf, Germany
Integral Ad Science, Inc., New York, NY, United States
JFrog, Ltd., Netanya, Israel
Jibe, Inc., New York, NY, United States
Kaltura, Inc., New York, NY, United States
Landlog Limited, Tokyo, Japan
LeanData, Inc., Sunnyvale, CA, United States
Local Globe VII, L.P., St. Peter Port, Guernsey, Channel Islands
Local Globe VIII, L.P., St. Peter Port, Guernsey, Channel Islands
Looker Data Sciences, Inc., Santa Cruz, CA, United States
Mosaic Ventures I, L.P., London, United Kingdom
MVP Strategic Partnership Fund GmbH & Co. KG, Munich, Germany
Narrative Science, Inc., Chicago, IL, United States
Nor1, Inc., Santa Clara, CA, United States
Notation Capital II, L.P., Brooklyn, NY, United States
Notation Capital, L.P., Brooklyn, NY, United States
On Deck Capital, Inc., New York, NY, United States
OpenX Software Limited, Pasadena, CA, United States
OpsRamp, Inc., San Jose, CA, United States
Pheonix Labs Canada, ULC, Burnaby, BC, Canada
Point Nine Annex GmbH & Co. KG, Berlin, Germany
Point Nine Capital Fund II GmbH & Co. KG, Berlin, Germany
Point Nine Capital Fund III GmbH & Co. KG, Berlin, Germany
Point Nine Capital Fund IV GmbH & Co. KG, Berlin, Germany
Portworx Inc., Los Altos, CA, United States
Post for Systems, Cairo, Egypt
PubNub, Inc., San Francisco, CA, United States
Realize Corporation, Tokyo, Japan
Reltio, Inc., Redwood Shores, CA, United States
Ridge Ventures IV, L.P., San Francisco, CA, United States
Rome2rio Pty. Ltd., Richmond, Australia
Smart City Planning, Inc., Tokyo, Japan
Socrata, Inc., Seattle, WA, United States
SportsTech Fund, L.P., Palo Alto, CA, United States
SportsTech Parallel Fund, L.P., Palo Alto, CA, United States
Spring Mobile Solutions, Inc., Salt Lake City, UT, United States
Storm Ventures V, L.P., Menlo Park, CA, United States
SumoLogic, Inc., Redwood City, CA, United States
SV Angel IV, L.P., San Francisco, CA, United States
T3C Inc., Mountain View, CA, United States
The Currency Cloud Group Limited, London, United Kingdom
The SaaStr Fund I, L.P., Palo Alto, CA, United States
The SAVO Group Ltd., Chicago, IL, United States
TidalScale, Inc., Campbell, CA, United States
Upfront V, L.P., Santa Monica, CA, United States
Wandera, Inc., San Francisco, CA, United States

Walldorf, February 21, 2018

SAP SE  
Walldorf, Baden  
The Executive Board

**Bill McDermott**

**Robert Enslin**

**Adaire Fox-Martin**

**Christian Klein**

**Michael Kleinemeier**

**Bernd Leukert**

**Jennifer Morgan**

**Luka Mucic**

**Stefan Ries**

# Management's Annual Report on Internal Control over Financial Reporting in the Consolidated Financial Statements

U.S. law requires that management submit a report on the effectiveness of internal control over financial reporting in the consolidated financial statements. For 2017, that report is as follows:

The management of SAP is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rules 13a–15(f) and 15d–15(f) under the U.S. Securities Exchange Act of 1934. SAP's internal control over financial reporting is a process designed under the supervision of SAP's CEO and CFO to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

SAP's management assessed the effectiveness of the Company's internal control over financial reporting as at December 31, 2017. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013).

Based on the assessment under these criteria, SAP management has concluded that, as at December 31, 2017, the Company's internal control over financial reporting was effective.

KPMG AG Wirtschaftsprüfungsgesellschaft, our independent registered public accounting firm, has issued its attestation report on the effectiveness of SAP's internal control over financial reporting. It is included in the independent auditor's report on the Consolidated Financial Statements as at December 31, 2017.

# Further Information on Economic, Environmental, and Social Performance

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# About This Further Information on Economic, Environmental, and Social Performance

The social and environmental data and information included in the SAP Integrated Report has been prepared in accordance with the GRI Standards: Core option. This option indicates that a report contains the minimum information needed to understand the nature of the organization, its material topics and related impacts, and how these are managed.

The Further Information on Economic, Environmental, and Social Performance includes information that is required to comply with the GRI Standards. In addition, we present our Connectivity model that shows the interrelations between social, environmental and financial performance.

# Connectivity of Financial and Non-Financial Indicators<sup>1</sup>

## Gaining a Holistic View of Our Performance

Integrated reporting is based on the idea that social, environmental, and economic performance are interrelated, with each creating tangible impacts on the others. To achieve a truly integrated strategy, we must understand these connections and work to support them throughout SAP. Figure 1 below shows how different elements connect, exemplified through profitability.



Figure 1: Connectivity Between Social, Environmental, and Economic Performance. SAP's main KPIs are marked in orange.

## Putting a Value on Non-Financial Performance Indicators

At SAP, we put a monetary value on how our operating profit is affected by selected non-financial indicators that measure, for example, how well we engage with our employees and inspire

them to commit to our vision and strategy, support a healthy business culture, and succeed in reducing our carbon emissions.

To achieve this quantification, we created cause-and-effect chains that show how specific actions we take at SAP lead to shifts in behavior. This behavior impacts on our business and has a financial consequence.

Such analysis establishes more than just a correlation between non-financial indicators and financial impact. It also reveals why and how something such as employee engagement ultimately leads to gains or losses in business performance. We believe that such insights are a prerequisite for fully modeling the financial impact of non-financial performance.

## Using Cause-and-Effect Analysis

To create and validate these chains of cause and effect, we turned to both internal and external stakeholders. We started with those inside SAP, meeting in small groups that rigorously examined the impacts of activities related to each of our non-financial indicators.

Next, we conferred with external stakeholders, including academics, financial investors, and industry peers, to vet our findings. Finally, we used real data from SAP to translate our cause-and-effect chains into a quantified impact on operating profit.

## Documenting Financial Impact

Since 2014, SAP has used techniques such as linear regression analysis to document the financial impact of four non-financial indicators. We assess each indicator to see what a change of 1pp (or 1% for carbon emissions) would mean for our operating profit. The results for 2017<sup>3</sup> are below:

Non-Financial Indicator	Impact on Operating Profit (€ millions, non-IFRS)
Business Health Culture Index	85 to 95 per pp
Employee engagement	50 to 60 per pp
Retention	55 to 65 per pp
Carbon emissions	5 per percent

<sup>1</sup> The information in the section Connectivity of Financial and Non-Financial Indicators is not in the scope of the Independent Assurance Report from KPMG. These results reflect the quantification of a gross effect related to a change in a particular key performance indicator. They do not allow for any net impact measurement. The evaluation of required investment to

change the non-financial indicator is excluded from the scope of analysis. The economic gross impact of a single indicator includes interdependencies with other indicators, hence our results do not allow for a cumulative effect across all indicators included in this report. All calculations are based on the initial linear regression analysis results of 2014 and on non-IFRS figures (as shown in our Integrated Report 2017).



# Case Study: Documenting the Financial Impact of a Healthy Work Culture

Our Business Health Culture Index assesses the health of both our organizational culture and our employees. Figure 2 shows

how activities that support health at SAP strengthen our organizational culture and help our employees perform at their best. For example, we see that flexibility improves stress resilience and enhances the work-life balance. This leads to greater productivity, resulting in higher operating profit.

## Cause-and-Effect Chain for the Business Health Culture Index (BHCI)

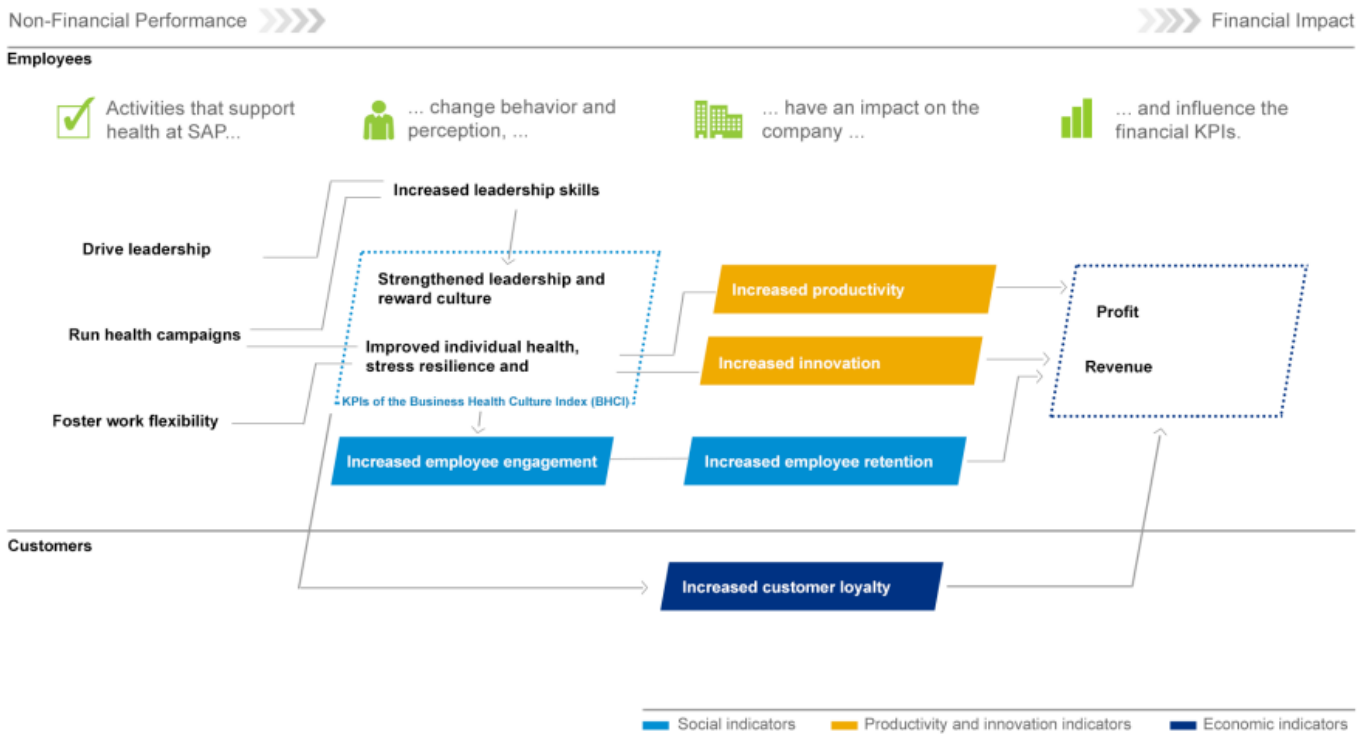


Figure 2: Impact Pathway of the Business Health Culture Index

# Case Study: Calculating ROI for Our “Join In – Stay Fit!” Health Initiative

As part of the “Join In – Stay Fit!” program at SAP Germany, we implemented a number of measures to improve the work-life balance of our staff. These include workshops that raise health awareness and provide tips for employees on how to change unhealthy behavior.

Before and after the launch of the program, we mapped direct and indirect costs related to this activity. We also measured the impact of the program on employees’ work-life balance as well as its impact on the BHCI. In 2015, beside the multiple positive effects on individual health and engagement, the program resulted in an ROI of 3.9 for the year of the investment. This means that operating profit increased €3.90 for every €1 invested in the program during that year.

# Promoting Sustainability Measures as a Way to Boost Financial Performance

Documenting the financial impact of non-financial indicators helps us move closer to achieving our sustainability goals. Rather than simply stating the business case for social or environmental change, we now have the numbers to back it up.

Our findings help us shift the conversation for business leaders, investors, employees, and other key stakeholders, and firmly establish non-financial indicators as playing a crucial role in our financial success. As a result, engaging employees or reducing our emissions is no longer seen as a nice-to-have, but rather as essential to carrying out a successful business strategy.

Moving forward, we are promoting the use of sustainability measures as a way to improve financial performance, both

inside and outside of SAP. By embedding this approach into our decision making and quarterly business reviews, our sustainability performance steers our business along with factors such as revenue and cost. Our goal is for all senior business leaders at SAP to recognize – and be held accountable for – the fact that improving such measures as employee engagement also boosts financial performance.

## Embedding Non-Financial Performance Indicators into Our Solutions

We continue to share our methodology with our customers to help them win in the marketplace. We believe that companies achieve higher operating profit – resulting from both greater cost efficiency as well as revenue growth – by addressing economic, social, and environmental considerations. More importantly, these companies are better equipped to lead in the future, as they navigate the world's most pressing challenges and help to bring about long-term sustainable change.

Currently, our connectivity model focuses predominantly on internal issues within SAP. However, we are working to enhance our model to include the social, environmental, and economic impacts of SAP software and services when they are used by our customers. In 2017, we conducted a research project to exemplarily identify and quantify relevant external (societal) impacts along SAP's value chain. Quantifications were performed separately for the three distinct areas of "upstream," "operations," and "downstream", with an emphasis on the last aspect, when SAP software and services are used by our customers. First results (such as a "customer impact index") have been piloted in the core development processes of SAP, and major lessons learned (such as "external impact pathway methodology") have been transferred to the respective lines of businesses.

Using the connectivity model, we have been able to embed non-financial key performance indicators into our solutions. We see this in our SAP Digital Boardroom offering, for example. By incorporating this connection into our software, the integrated approach to financial and non-financial performance not only helps SAP but also our customers. In this way, we can turn our vision into reality: enabling our customers to use our technology to make the world a better place.

## Details: How Our Non-Financial and Financial Performance Indicators Are Interconnected

### Employee Engagement

Employee engagement is the level of employee commitment, pride, and loyalty, as well as the feeling of employees of being advocates for their company.

### Capability Building > Employee Engagement

Because it is closely linked to how much a company develops its employees and supports their careers, internal hiring to management and expert positions positively affects employees' commitment and loyalty. This hypothesis was confirmed by a study by Bedarkar & Pandita (2014), which identified "career opportunities" as the key driver of employee engagement.<sup>4</sup>

### Social Investment > Employee Engagement

Mueller et al. (2012) have found that employees' perception of a company's commitment to corporate social responsibility is positively linked to their own commitment to the organization.<sup>5</sup>

### Employee Engagement > Profitability

Since 2014, we have used real data from SAP to analyze and prove the financial impact of employee engagement. Now we can show what a change by 1pp of employee engagement would mean for SAP's operating profit, as detailed in the [Documenting Financial Impact](#) section.

### Profitability > Employee Engagement

In our view, a high operating profit, as great business news, can raise employee morale, encourage identification with our vision, and thus drive employee engagement. On the other hand, we believe that a high profit can also have a negative impact on employee engagement. For example, if cost savings and budget cuts are implemented to reach an ambitious profit target, employees might feel constrained and dissatisfied.

### Business Health Culture Index (BHCI) > Employee Engagement

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to prove a significant positive correlation between the BHCI and employee engagement. The BHCI positively influences the Leadership Trust Index, which positively influences the Employee Engagement Index; all correlations are significant.

<sup>4</sup> Bedarkar, M., Pandita, D. (2014): A Study on the drivers of employee engagement impacting employee performance. In: *Procedia – Social and Behavioral Sciences*, Vol. 133, pp. 106-115.

<sup>5</sup> Mueller, K., Hattrup, K., Spiess, S., Lin-Hi, N. (2012): The effects of corporate social responsibility on employees' affective commitment: A cross-cultural investigation. In: *Journal of Applied Psychology*, Vol. 97(6), pp. 1186-1200.

## Employee Engagement > Employee Retention

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of employee engagement. We have been able to prove a significant positive correlation between employee engagement and employee retention.

## Greenhouse Gas (GHG) Footprint > Employee Engagement

We believe that lowering SAP's GHG footprint can have a positive impact on employee engagement because loyalty should rise as employees see their company act responsibly towards the environment. However, because lowering emissions also brings certain restrictions, such as on business travel, it may also have a negative impact on employee engagement.

## Employee Engagement > GHG Footprint

We believe that engaged employees are more likely to want to help SAP achieve our own target in lowering GHG emissions. Yet another possible outcome is that a higher level of employee engagement may lead to more business activity requiring travel, and therefore could lead to an increase in GHG emissions.

## Employee Engagement > Growth

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of employee engagement. We have been able to prove a significant positive correlation between employee engagement and revenue.

## Growth > Employee Engagement

We believe that higher revenue has a positive impact on a company's work environment, thereby increasing employee pride and loyalty. This is also stated in a study of Harter et al. (2010), which states that improving financial performance appears to increase general satisfaction and some specific work perceptions.<sup>6</sup>

## Business Health Culture Index (BHCI)

Our Business Health Culture Index assesses the health of both our organizational culture and our employees. In particular, the perception.

## Women in Management > BHCI

We believe that a balance of men and women in management roles helps create a more balanced working environment, one in which diversity is valued and people feel free to express their

individual styles. It is our expectation that such an environment will positively affect our BHCI.

## BHCI > Women in Management

McKinsey (2013) found that different elements of the BHCI, such as flexible working hours, the ability to work from home, and career flexibility, can make it easier for employees to balance work and family life.<sup>7</sup> This leads us to conclude that the higher our BHCI, the more attractive SAP becomes to women who are also seeking management positions.

## BHCI > Profitability

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. Now we can show what a change by 1pp of the BHCI would mean for SAP's operating profit, as detailed in the [Documenting Financial Impact](#) section.

## Social Investment > BHCI

We believe that by supporting our employees in engaging in activities with a positive social impact, such as skills-based volunteering, we are enhancing the meaning they find in work. This sense of purpose can help create a richer and more rewarding work environment that reduces stress and promotes satisfaction and well-being.

## BHCI > Employee Engagement

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to prove a significant positive correlation between the BHCI and employee engagement. The BHCI positively influences the Leadership Trust Index, which positively influences the Employee Engagement Index; all correlations are significant.

## BHCI > Growth

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to prove a significant positive correlation between the BHCI and revenue.

## GHG Footprint > BHCI

Many of SAP's GHG emissions are caused by business travel and commuting, which we believe can have both negative and positive impacts on employee health. Some people may experience greater stress from more travel because they have less time to spend at home, suffer from jetlag, or lose valuable working time; others may enjoy travel because it enables them to experience other places and cultures as well as meet new people.

<sup>6</sup>Harter, J., Schmidt, F., Asplund, J., Kilham, E., Agrawal, S. (2010): Causal Impact of Employee Work Perceptions on the Bottom Line of Organizations. In: Perspectives on Psychological Science, Vol. 5(4), pp. 378-389.

<sup>7</sup>McKinsey & Company (2013): Women Matter. Gender diversity in top management: Moving corporate culture, moving boundaries. Available at: [http://www.mckinsey.com/~media/McKinsey/Global%20Themes/Women%20matter/WomenMatter%202013%20Report%20\(8\).ashx](http://www.mckinsey.com/~media/McKinsey/Global%20Themes/Women%20matter/WomenMatter%202013%20Report%20(8).ashx) [Accessed 16 Dec. 2016].

## BHCI > Customer Loyalty

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to prove a significant positive correlation between the BHCI and customer loyalty.

## Employee Retention

Employee retention is the ratio of the average headcount (expressed in full-time equivalents), minus employee-initiated terminations (turnover), divided by the average headcount, taking into account the past 12 months.

## Capability Building > Employee Retention

According to the Global Workforce Study (2012), the “chances to advance the career” is the second-most important driver of employee retention.<sup>8</sup> By promoting and thus growing from within, SAP creates career opportunities for our employees. In turn, it is our expectation that this opportunity leads to an increase in employee retention.

## Employee Engagement > Employee Retention

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of employee engagement. We have been able to prove a significant positive correlation between employee engagement and employee retention.

## Employee Retention > Growth

Meifert (2005) stated a clear relationship between employee retention and a company's revenue and margin.<sup>9</sup>

## Employee Retention > Customer Loyalty

Koys (2001) has found evidence that employee turnover has a negative impact on customer satisfaction.<sup>10</sup> We believe this effect stems from the fact that experienced employees work more efficiently, have better product knowledge, and can build trusting relationships with colleagues and customers, so therefore have the ability to better serve customers' needs.

## Employee Retention > Profitability

We have been using real data from SAP to analyze and prove the financial impact of employee retention. Now we can show what a change by 1pp of employee retention would mean for SAP's operating profit, as detailed in the *Documenting Financial Impact* section.

<sup>8</sup> Towers Watson (2012): Global Workforce Study. Geld, Karriere, Sicherheit? Was Mitarbeiter motiviert und in ihrem Unternehmen hält. Available at: <https://www.towerswatson.com/de-AT/Insights/IC-Types/Survey-Research-Results/2012/07/Towers-Watson-Global-Workforce-Study-2012-Deutschlandergebnisse> [Accessed 16 Dec. 2016].

<sup>9</sup> Meifert, M. (2005): Mitarbeiterbindung: eine empirische Analyse betrieblicher Weiterbildner in deutschen Großunternehmen. München and Mering: Hampp Verlag.

<sup>10</sup> Koys, D. (2001): The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. In: *Personnel Psychology*, Vol. 54(1), pp. 101-114.

## Women in Management

“Women in Management” means the share of women in management positions (managing teams, managing managers, board members) as compared to the total number of managers.

## Capability Building > Women in Management

Like many of our IT industry peers, SAP has less women than men in senior positions. Given our significant pool of talent, we assume that internal promotions will increase the percentage of women in management positions.

## Women in Management > BHCI

We believe that a balance of men and women in management helps create a more balanced working environment, one in which diversity is valued and people feel free to express their individual styles. It is our expectation that such an environment will positively affect our BHCI.

## BHCI > Women in Management

McKinsey (2013) found that different elements of the BHCI, such as flexible working hours, the ability to work from home, and career flexibility, can make it easier for employees to balance work and family life.<sup>11</sup> This leads us to conclude that the higher our BHCI, the more attractive SAP becomes to women who are also seeking management positions.

## Women in Management > Growth

Studies show that companies with a relatively high percentage of women in upper management or as board members achieve stronger financial performance compared to those with a relatively low percentage (Catalyst, 2013).<sup>12</sup> We believe that having a higher share of women in management positions will increase our revenue as it helps us better serve our diverse customer base.

## Women in Management > Customer Loyalty

Diversity programs – including those focused on the promotion of women to management positions – have a direct and positive impact on customer satisfaction (Catalyst, 2013).<sup>13</sup>

## Women in Management > Profitability

Studies show that companies with a high level of gender diversity outperform companies with an average level in terms of return on equity (11.4% versus an average 10.3%); operating results (EBIT 11.1% versus 5.8%); and stock price increases

<sup>11</sup> McKinsey & Company (2013): Women Matter. Gender diversity in top management: Moving corporate culture, moving boundaries. Available at: [http://www.mckinsey.com/~media/McKinsey/Global%20Themes/Women%20matter/WomenMatter%202013%20Report%20\(8\).ashx](http://www.mckinsey.com/~media/McKinsey/Global%20Themes/Women%20matter/WomenMatter%202013%20Report%20(8).ashx) [Accessed 16 Dec. 2016].

<sup>12</sup> Catalyst Information Center (2013): Why Diversity Matters. Available at: [http://www.catalyst.org/system/files/why\\_diversity\\_matters\\_catalyst\\_0.pdf](http://www.catalyst.org/system/files/why_diversity_matters_catalyst_0.pdf) [Accessed 16 Dec. 2016].

<sup>13</sup> Catalyst Information Center (2013): Why Diversity Matters. Available at: [http://www.catalyst.org/system/files/why\\_diversity\\_matters\\_catalyst\\_0.pdf](http://www.catalyst.org/system/files/why_diversity_matters_catalyst_0.pdf) [Accessed 16 Dec. 2016].

(64% versus 47% over the period 2005–2007) (McKinsey, 2007).<sup>14</sup> It is therefore likely that having a higher share of women in management positions will result in higher profit for SAP.

## Social Investment

Social investment reflects SAP's activities in volunteering and technology as well as cash donations.

### Social Investment > BHCI

We believe that by supporting our employees in engaging in activities with a positive social impact, such as skills-based volunteering, we are enhancing the meaning they find in work. This sense of purpose helps create a richer and more rewarding work environment that reduces stress and promotes satisfaction and well-being.

### Social Investment > Employee Engagement

Mueller et al. (2012) have found that employees' perception of a company's commitment to corporate social responsibility is positively linked to their own commitment to the organization.<sup>15</sup>

### Social Investment > Growth

A study by Muritala (2013) suggests that corporate social responsibility (or what we characterize as social investment) is likely to have a positive impact on an organization's financial performance.<sup>16</sup> In our experience, social investments do, in fact, have a positive impact on our ability to acquire new customers, especially in emerging markets.

### Profitability > Social Investment

It is a common best practice for companies to invest a certain percentage of their annual profits in programs and activities that create a positive social impact. We believe that higher profit is therefore likely to lead SAP to make greater social investments.

## Capability Building

Capability building is the internal hiring rate (promotions only) into management or expert positions as compared to the external hiring rate into such positions.

### Capability Building > Employee Retention

According to the Global Workforce Study (2012), the "chances to advance the career" is the second-most important driver of employee retention.<sup>17</sup> By promoting and thus growing from within, SAP creates career opportunities for our employees. In

turn, it is our expectation that this opportunity leads to an increase in employee retention.

## Capability Building > Employee Engagement

Because it is closely linked to how much a company develops its employees and supports their careers, internal hiring to management and expert positions positively affects employees' commitment and loyalty. This hypothesis was confirmed by a study by Bedarkar & Pandita (2014), which identified "career opportunities" as the key driver of employee engagement.<sup>18</sup>

## Capability Building > Women in Management

Like many of our IT industry peers, SAP has less women than men in senior positions. Given our significant pool of talent, we assume that internal promotions will increase the percentage of women in management positions.

## Growth

Growth is one of our strategic objectives. We measure it through several KPIs, for example total revenue that SAP receives from the sale of our products and services.

### Social Investment > Growth

A study by Muritala (2013) suggests that corporate social responsibility (or what we characterize as social investment) is likely to have a positive impact on an organization's financial performance.<sup>19</sup> In our experience, social investments do, in fact, have a positive impact on our ability to acquire new customers, especially in emerging markets.

### Women in Management > Growth

Studies show that companies with a relatively high percentage of women in upper management ranks or as board members achieve stronger financial performance compared to those with a relatively low percentage (Catalyst, 2013).<sup>20</sup> We believe that having a higher share of women in management positions will increase our revenue as it helps us to better serve our diverse customer base.

### BHCI > Growth

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to

<sup>14</sup> McKinsey & Company (2007): Women Matter. Gender diversity, a corporate performance driver. Available at: [http://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Women%20matter/Women\\_matter\\_oct2007\\_english.aspx](http://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Women%20matter/Women_matter_oct2007_english.aspx) [Accessed 16 Dec. 2016].

<sup>15</sup> Mueller, K., Hattrup, K., Spiess, S., Lin-Hi, N. (2012): The effects of corporate social responsibility on employees' affective commitment: A cross-cultural investigation. In: Journal of Applied Psychology, Vol. 97(6), pp. 1186-1200.

<sup>16</sup> Muritala, T. (2013): Does CSR Improve Organization Financial Performance? Evidence from Nigeria Using Triangulation Analysis. In: Economics and Applied Informatics, Issue 3, pp. 41-46.

<sup>17</sup> Towers Watson (2012): Global Workforce Study. Geld, Karriere, Sicherheit? Was Mitarbeiter motiviert und in ihrem Unternehmen hält. Available at: <https://www.towerswatson.com/de-AT/Insights/IC-Types/Survey-Research-Results/2012/07/Towers-Watson-Global-Workforce-Study-2012-Deutschlandergebnisse> [Accessed 16 Dec. 2016].

<sup>18</sup> Bedarkar, M., Pandita, D. (2014): A Study on the drivers of employee engagement impacting employee performance. In: Procedia – Social and Behavioral Sciences, Vol. 133, pp. 106-115.

<sup>19</sup> Muritala, T. (2013): Does CSR Improve Organization Financial Performance? Evidence from Nigeria Using Triangulation Analysis. In: Economics and Applied Informatics, Issue 3, pp. 41-46.

<sup>20</sup> Catalyst Information Center (2013): Why Diversity Matters. Available at: [http://www.catalyst.org/system/files/why\\_diversity\\_matters\\_catalyst\\_0.pdf](http://www.catalyst.org/system/files/why_diversity_matters_catalyst_0.pdf) [Accessed 16 Dec. 2016].

prove a significant positive correlation between the BHCI and revenue.

## Employee Retention > Growth

Meifert (2005) stated a clear relationship between employee retention and the company's revenue and margin.<sup>21</sup>

## GHG Footprint > Growth

Lowering SAP's GHG footprint could have a positive impact on SAP's revenue because customers increasingly ask their suppliers to act sustainably. This reasoning is supported by a study by PwC (2013) confirming the existence of a positive correlation between a company's environmental performance and financial performance.<sup>22</sup> On the other hand, where additional travel is conducted to generate additional business, the resulting increase in SAP's GHG footprint could have positive impact on growth.

## Employee Engagement > Growth

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of employee engagement. We have been able to prove a significant positive correlation between employee engagement and revenue.

## Growth > Employee Engagement

We believe that a higher revenue will have a positive impact on a company's work environment, thereby increasing employee pride and loyalty. This is also stated in a study of Harter et al. (2010), stating that improving financial performance appears to increase general satisfaction and some specific work perceptions.<sup>23</sup>

## Customer Loyalty > Growth

Reichheld (2003) found a strong correlation between companies' Customer NPS results and their revenue growth rates.<sup>24</sup> We support this view, as we believe that loyal SAP customers are likely to recommend SAP products to other companies, which is likely to result in increased sales and stronger revenue.

## Growth > Profitability

Profit (or loss) is the total of income less expenses; if revenue as the main part of total income grows at a higher rate than costs, it will lead to greater profit.

## Profitability

Profitability is one of our strategic objectives. We measure it through operating profit. Profit (or loss) is the total of income less expenses.

## BHCI > Profitability

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. Now we can show what a change by 1pp of the BHCI would mean for SAP's operating profit, as detailed in the *Documenting Financial Impact* section.

## Employee Engagement > Profitability

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of employee engagement. Now we can show what a change by 1pp of employee engagement would mean for SAP's operating profit, as detailed in the *Documenting Financial Impact* section.

## Profitability > Employee Engagement

In our view, high profits, as great business news, can raise employee morale, encourage identification with our vision, and help increase employee engagement. On the other hand, we believe that a high profit expectation can also have a negative impact on employee engagement. If cost savings and budget cuts are implemented to reach an ambitious profit target, employees might feel constrained and dissatisfied.

## Women in Management > Profitability

Studies show that companies with a high level of gender diversity outperform companies with an average level in terms of return on equity (11.4% versus an average 10.3%); operating results (EBIT 11.1% versus 5.8%); and stock price increases (64% versus 47% over the period 2005–2007) (McKinsey, 2007).<sup>25</sup> It is therefore likely that having a higher share of women in management positions will result in higher profit for SAP.

## Profitability > Social Investment

It is a common best practice for companies to invest a certain percentage of their annual profits in programs and activities that create a positive social impact. We believe that a higher profit is therefore likely to lead SAP to make greater social investments.

## Employee Retention > Profitability

We have been using real data from SAP to analyze and prove the financial impact of employee retention. Now we can show what a change by 1pp of employee retention would mean for SAP's

- Meifert, M. (2005): Mitarbeiterbindung: eine empirische Analyse betrieblicher Weiterbildner in deutschen Großunternehmen. München and Mering: Hampp Verlag.

- PwC (2013): Busting the carbon budget – Low Carbon Economy Index 2013. Available at: <https://www.pwc-wissen.de/pwc/de/shop/publikationen/Low+Carbon+Economy+Index+2013/?card=12994> [Accessed 16 Dec. 2016].

- Harter, J., Schmidt, F., Asplund, J., Kilham, E., Agrawal, S. (2010): Causal Impact of Employee Work Perceptions on the Bottom Line of Organizations. In: Perspectives on Psychological Science, Vol. 5(4), pp. 378-389.

- Reichheld, F. (2003): The One Number You Need to Grow. In: Harvard Business Review, Vol. 81(12), pp. 46-54.

- McKinsey & Company (2007): Women Matter. Gender diversity, a corporate performance driver. Available at: [http://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Women%20matter/Women\\_matter\\_oct2007\\_english.aspx](http://www.mckinsey.com/~media/McKinsey/Business%20Functions/Organization/Our%20Insights/Women%20matter/Women_matter_oct2007_english.aspx) [Accessed 16 Dec. 2016].

operating profit, as detailed in the *Documenting Financial Impact* section.

### **Total Energy Consumed > Profitability**

We have found that reduced energy consumption is strongly correlated with a reduction in costs. Therefore, any cost avoidance achieved has a positive impact on our profit.

### **Growth > Profitability**

Profit (or loss) is the total of income less expenses; if revenue as the main part of total income grows at a higher rate than costs, it will lead to greater profit.

### **Customer Loyalty > Profitability**

We believe that positive experiences among our customers can significantly increase business with existing customers, as well as help attract new customers. Both results can lower the cost of sales, thereby increasing our profit.

### **GHG Footprint > Profitability**

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of our GHG footprint. Now we can show what a reduction of SAP's carbon emissions by 1pp would mean for SAP's operating profit, as detailed in the *Documenting Financial Impact* section.

### **Customer Loyalty**

Customer loyalty is measured with the Net Promoter Score: Percentage of customers that are likely to recommend SAP to friends or colleagues minus the percentage of customers that are unlikely to do so.

### **Women in Management > Customer Loyalty**

Diversity programs – including those focused on the promotion of women to management positions – have a direct and positive impact on customer satisfaction (Catalyst, 2013).<sup>26</sup>

### **Employee Retention > Customer Loyalty**

Koys (2001) has found evidence that employee turnover has a negative impact on customer satisfaction.<sup>27</sup> We believe this effect stems from the fact that experienced employees work more efficiently, have better product knowledge, and can build trusting relationships with colleagues and customers, so therefore have the ability to better serve customers' needs.

### **GHG Footprint > Customer Loyalty**

We believe that lowering SAP's carbon emissions has a positive reputational effect, thereby enhancing SAP's standing with its customers.

### **Customer Loyalty > Growth**

Reichheld (2003) found a strong correlation between companies' Customer NPS results and their revenue growth rates.<sup>28</sup> We support this view, as we believe that loyal SAP customers are likely to recommend SAP products to other companies, which is likely to result in increased sales and stronger revenue.

### **Customer Loyalty > Profitability**

We believe that positive experiences among our customers can significantly increase business with existing customers, as well as help attract new customers. Both results can lower the cost of sales, thereby increasing our profit.

### **BHCI > Customer Loyalty**

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the BHCI. We have been able to prove a significant positive correlation between the BHCI and customer loyalty.

### **GHG Footprint**

Our GHG footprint is the sum of all greenhouse gas emissions measured and reported, including renewable energy and third-party reductions, for example, offsets.

### **GHG Footprint > BHCI**

Many of SAP's GHG emissions are caused by business travel and commuting, which we believe can have both negative and positive impacts on employee health. Some people may experience greater stress from more travel because they have less time to spend at home, suffer from jetlag, or lose valuable working time; others may enjoy travel because it enables them to experience other places and cultures as well as meet new people.

### **GHG Footprint > Employee Engagement**

We believe that lowering SAP's GHG footprint can have a positive impact on employee engagement because loyalty should rise as employees see their company act responsibly towards the environment. However, because lowering emissions also brings certain restrictions, such as on business travel, it may also have a negative impact on employee engagement.

<sup>26</sup> Catalyst Information Center (2013): Why Diversity Matters. Available at: [http://www.catalyst.org/system/files/why\\_diversity\\_matters\\_catalyst\\_0.pdf](http://www.catalyst.org/system/files/why_diversity_matters_catalyst_0.pdf) [Accessed 16 Dec. 2016].  
<sup>27</sup> Koys, D. (2001): The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. In: *Personnel Psychology*, Vol. 54(1), pp. 101-114.

<sup>28</sup> Reichheld, F. (2003): The One Number You Need to Grow. In: *Harvard Business Review*, Vol. 81(12), pp. 46-54.

## Employee Engagement > GHG Footprint

We believe that engaged employees are likely to want to help SAP achieve our target in lowering GHG emissions. Yet another possible outcome is that a higher level of employee engagement may lead to more business activity requiring travel, and therefore could lead to an increase in GHG emissions.

## GHG Footprint > Growth

Lowering SAP's GHG footprint could have a positive impact on SAP's revenue because customers increasingly ask their suppliers to act sustainably. This reasoning is supported by a study by PwC (2013) confirming the existence of a positive correlation between a company's environmental performance and financial performance.<sup>29</sup> On the other hand, where additional travel is conducted to generate additional business, the resulting increase in SAP's GHG footprint could have positive impact on growth.

## GHG Footprint > Customer Loyalty

We believe that lowering SAP's carbon emissions has a positive effect on our reputation, thereby enhancing SAP's standing with our customers.

## Total Energy Consumed > GHG Footprint

The emissions caused by SAP's energy consumption add directly to the corporate carbon footprint if they are not reduced through offsets or – for electricity consumption – renewable energy certificates (RECs).

## GHG Footprint > Profitability

Since 2014, we have been using real data from SAP to analyze and prove the financial impact of the GHG footprint. Now we can show what a reduction of SAP's carbon emissions by one percentage would mean for SAP's operating profit, as detailed in the *Documenting Financial Impact* section.

## Total Energy Consumed

Total energy consumed is the sum of all energy consumed through SAP's own operations, including energy from renewable sources.

## Total Energy Consumed > Profitability

We have found that reduced energy consumption is strongly correlated with a reduction in costs. The cost avoidance thus achieved has a positive impact on our profit.

## Total Energy Consumed > GHG Footprint

The emissions caused by SAP's energy consumption add directly to the corporate carbon footprint if they are not reduced

through offsets or – for electricity consumption – renewable energy certificates (RECs).

<sup>29</sup> PwC (2013): Busting the carbon budget – Low Carbon Economy Index 2013. Available at: <https://www.pwc-wissen.de/pwc/de/shop/publikationen/Low+Carbon+Economy+Index+2013/?card=12994> [Accessed 16 Dec. 2016].



# Materiality

## Defining Key Priorities for Our Reporting

By understanding which environmental, social, and governance issues are key priorities for our stakeholders, we are better able to allocate time, budget, and resources accordingly within our integrated reporting. Based on our existing material aspects, in 2016, we completed a materiality assessment to help identify and validate those topics which are the most relevant to our stakeholders such as employees, investors, and customers. The assessment also highlights those topics which contribute most to value creation both in our own operations and in those of our customers.

Our materiality assessment process combined the GRI G4 guidelines for sustainability reporting and the International Integrated Reporting Framework. Key stages of the process are detailed below.

### Identification

During this stage, we drew up a long list of potential topics based on guidance from GRI G4 and the Sustainability Accounting Standards Board (SASB), as well as our existing material aspects. We also considered a materiality assessment for the ICT industry by the Global E-Sustainability Initiative (GeSI) as well as the United Nations' Sustainable Development Goals (SDGs).

When identifying our key topics and their boundaries, we looked first at areas related to our operations and supply chain. Second, we looked at topics related to how our software can help our customers contribute to the achievement of the SDGs.

### Prioritization

During the prioritization stage, we looked at the extent to which each individual topic affects our ability to create value at SAP. We assessed whether this value was financial, operational, strategic, reputational, or regulatory. All topics that were identified as delivering value in three or more areas were then included on our short list of seven categories, as follows:

- Business conduct
- Climate and energy
- Financial performance
- Human and digital rights
- Human capital
- Innovation
- Impact on society

Next, we conducted semi-structured interviews with selected stakeholders to validate the shortlisted topics. We asked stakeholders to rate topics on a scale from 0 to 5 (where 0 is not important at all and 5 is very important) based on the following questions for the first six categories:

- To what degree does this topic influence SAP's ability to create value?
- How important is that topic for you to engage in a business relationship with SAP?

To assess the category "impact on society," we asked stakeholders the following questions:

- How high is the potential of SAP to enable our customers to achieve the SDGs?
- How important is our ability to do this for you to engage in a business relationship with SAP?

We have included in our materiality matrix all topics with stakeholder ratings in the upper 50% for both questions respectively.

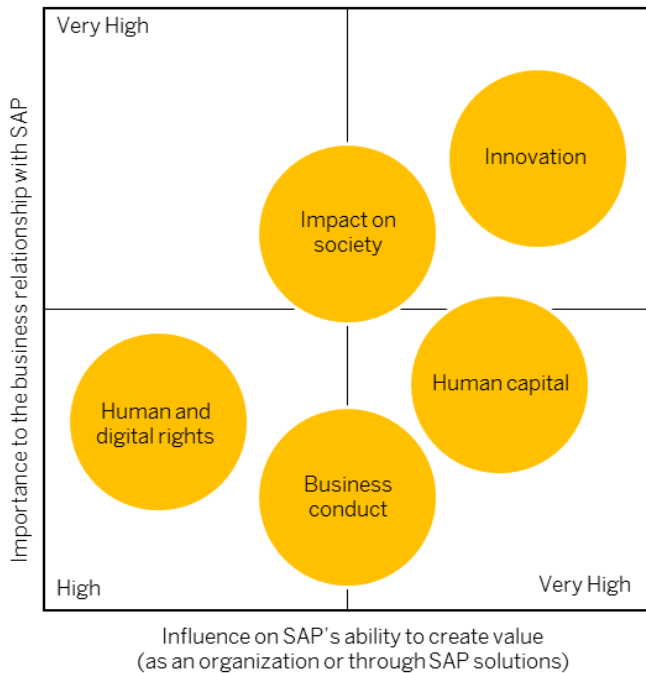
### Validation

The results of the materiality analysis were reviewed and confirmed by our steering committee for integrated reporting and our sustainability advisory panel. The results were also reviewed by our chief financial officer, who is the board sponsor for sustainability and integrated reporting.

### Review

Feedback on and analysis of the SAP Integrated Report will serve as an input for future materiality assessments.

## Results



Materiality Matrix (All Items Other Than Financial Performance)

Key points of our materiality assessment results include:

- Financial performance was seen as a mandatory part of reporting. As a result, in several interviews, its materiality was not expressly discussed. However, this category received high individual scores.
- The innovation, business conduct, and human capital categories received the highest scores and response rates.
- The climate and energy category, which looks at the way that SAP reduces emissions and energy consumption in our own operations, had the lowest response rates and scores.
- In evaluating our impact on society through the SAP portfolio, our stakeholders identified seven SDGs as material:
  - SDG 9 Industry, innovation, and infrastructure
  - SDG 3 Good health and well-being
  - SDG 8 Decent work and economic growth
  - SDG 13 Climate action
  - SDG 17 Global partnerships
  - SDG 12 Responsible consumption and production
  - SDG 4 Quality education

## Understanding the Relevance of Our Material and Other Reported Aspects

Each of our material aspects has significant impact on the business success of SAP as described below.

## Business Conduct

For more information, see the [Business Conduct](#) section.

## Climate and Energy

For more information, see the [Energy and Emissions](#) section.

## Financial Performance

Not only do we create financial value for SAP and our shareholders, we also create wealth for a broad range of stakeholders. We do this through employee wages and benefits, payments to our value chain and ecosystem, and tax payments to local governments and economies, for example.

## Human and Digital Rights

For more information, see the [Security, Privacy, and Data Protection](#) section and the [Human Rights and Labor Standards](#) section.

## Human Capital

Nothing has a greater impact on our long-term success than the creativity, talent, and commitment of our people. Their ability to innovate and understand the needs of our customers delivers sustainable value to our company and our society. For more information, see the [Employees and Social Investments](#) section.

## Impact on Society

We believe that digital technologies will help companies and organizations contribute to the United Nations' 17 SDGs. Through our solutions, we provide customers, partners, and consumers with the tools that help them make a difference. This may be through empowering those disadvantaged in society through financial services, providing personalized medicine, building infrastructure, or combating climate change.

As well as creating positive impacts through our solutions, we are equipping young people all over the world with the skills they need to tackle society's problems and thrive in the digital economy. For more information, see the [Employees and Social Investments](#) section.

## Innovation and Customer Loyalty

At SAP, we are committed to our vision of helping the world run better and improving people's lives. To help achieve this vision, we lead with purpose to create innovations that help accelerate economic prosperity, drive positive social impact, and safeguard the planet. Our customers inspire everything we do, from the first spark of innovation to the design and completion of new products, not to mention the way in which we serve their needs over time.

Our future business success, specifically in the cloud business, depends on customer loyalty. We view customer loyalty as being

so critical to our own success that we have made it one of our four company-wide strategic objectives, in addition to employee engagement, growth, and profitability.

# Stakeholder Engagement

For SAP, stakeholder engagement and collaboration are deeply embedded into our process of innovation and the development of our products and services. Before we can design a new solution, we must first understand the issue we are addressing. For this reason, design thinking and co-innovation are essential.

To be able to innovate, we regularly engage with the stakeholder groups described below, including our sustainability advisory panel. We selected these groups as they are critical to our value creation.

## Customers

Our customer-facing organizations, such as sales, consulting, education, and support, have multiple touch points with customers on a daily basis. In addition to the sales engagement cycle, we engage customers through industry value networks, co-innovation projects, customer councils, and customer-organized user groups throughout the world. Our Customer Engagement Initiative provides early insight into SAP product planning, allowing our customers to influence and collaborate around our product development cycle. We also gather customer feedback regularly through our “SAP Listens” program. For more information about our customer surveys, see the [Customers](#) section.

## Employees

We survey employees annually. For the results of our latest employee survey and action items resulting from it, see the [Listening to Our People](#) section.

Our Supervisory Board comprises 50% employee representation, and we strive for constructive labor relations across the world, working within each country’s requirements. We currently have works councils in place in Belgium, France, Germany, the Netherlands, Slovenia, and Spain. In Italy, there is a union representative in place. In the United Kingdom and Ireland, employee consultation forums represent the employees’ interests. In Romania and Sweden, union stewards are established. The majority of the SAP employees in Canada is represented by a Joint Health & Safety Committee. Furthermore, employee representatives are in place at SAP Japan Co. Limited. Employees of SAP Austria decided to be represented by an ombudsteam. In addition, we have a European works council that represents SAP employees in the 28 countries of the European Economic Area.

These employee representation bodies consist of both elected union members and non-union members, and are consulted by

SAP management on topics that define the work environment and work processes. These topics include HR initiatives, talent development, payment and benefits, equal opportunities, changes in work or IT processes, privacy, and health and safety protection.

Collective bargaining agreements with unions are only made in countries where legally required. Overall, about 50% of our employees are represented by works councils, an independent trade union, or are covered by collective bargaining agreements.

In addition, the Executive Board answers employees’ questions in quarterly all-hands meetings. In regular coffee corner sessions, senior executives explain our strategy to employees and answer their questions directly. Through topic-related discussion blogs, executives engage regularly with employees, foster open discussion, and receive focused feedback globally.

## Financial Analysts and Investors

For more information about our dialog with investors, see the [Investor Relations](#) section.

## Governments

For more information about our dialog with governments, see the [Public Policy](#) section.

## Industry Analysts

Our Analyst Relations team, the Executive Board, and executives have strong relations and work strategically with IT analysts on a frequent basis. We engage with these analysts on key SAP topics including SAP HANA, SAP Cloud Platform, SAP Leonardo, ERP Portfolio, industry solutions, cloud solutions, ecosystem, and services. The latest industry positioning material integrates economic, social, and environmental impact creation.

## Non-Governmental Organizations (NGOs) and Academia

Our dialog with NGOs, not-for-profit organizations, and academic institutions helps us understand how we can address today’s most pressing issues with our solutions and what is expected from us as a corporation. For example, in 2017 SAP Ariba entered into a partnership with the UN Global Compact supporting the Decent Work in Global Supply Chains action platform. This partnership will bring the procurement community together to think about how we can all be more

purpose-driven and share ideas about how we can drive transparency in the supply chain.

## Partners

Our partners are also key to our growth, as they co-innovate solutions with us, and sell and implement solutions at customer sites. The spirit of cooperation and engagement is exemplified by the online SAP Community. As with customers, we also gather partner feedback regularly through our “SAP Listens” program.

## Sustainability Advisory Panel

Our sustainability advisory panel consists of expert representatives from our customers, investors, partners, NGOs, and academia. In 2017, the panel met with our chief financial officer (CFO), who is also the board sponsor for sustainability, and with SAP representatives from the areas of strategy, solutions, finance and administration, and marketing. The group discussed the further integration of sustainability into SAP’s innovation culture, our impact valuation approach, and the question of whether we need a new approach to corporate responsibility in a digital economy.

# Sustainability Management and Policies

## Putting Sustainability at the Heart of Our Strategy

At SAP, we believe that it is not enough to simply have a sustainability strategy but that, instead, our overall corporate strategy must itself be sustainable. Only by achieving this can we fulfill our vision to help the world run better and improve people's lives. We therefore strive to promote sustainability across our entire business.

Led by our chief sustainability officer, a dedicated team works to embed sustainability into our corporate strategy and promotes new sustainability initiatives across the organization. Our chief financial officer (CFO) is the sponsor for sustainability on the Executive Board, and we also have a dedicated person in charge of sustainability in each area of the business. These individuals are responsible for embedding sustainability in their business practices, for example, by setting relevant targets and implementing related programs. They are held accountable for their achievements in review meetings with the CFO and the chief sustainability officer that take place twice a year.

## Managing Our Response to Our Material and Other Reported Aspects

SAP has dedicated personnel addressing the material aspects identified in our materiality analysis. For each topic, we look at ways that we can manage our response, and how we can evaluate whether our approach is effective.

### Business Conduct

For information about our management approach, see the [Business Conduct](#) section.

### Climate and Energy

For more information about our climate and energy management approach, see the [Energy and Emissions](#) section.

### Financial Performance

The Executive Board retains ultimate responsibility for revenue growth, profitability, and the financial stability of SAP. For more information, see the [Corporate Governance Report](#) and the [Report by the Supervisory Board](#).

## Human and Digital Rights

For information about our management approach on human and digital rights, see the [Security, Privacy, and Data Protection](#) section and the [Human Rights](#) section.

### Human Capital

Overall responsibility for our human resources strategy lies with the Executive Board, led by the Executive Board member responsible for Human Resources.

Our key policies include a global health and safety management policy and a diversity and inclusion policy. The global health and safety management policy supports business processes, leadership behavior, and culture by addressing, integrating, and leveraging health, occupational safety, well-being, and stress management topics. We aim to nurture our employees' long-term employability, engagement, and creativity in developing sustainable value for our organization, for our customers, and for themselves.

The diversity and inclusion policy provides a framework for diversity and inclusion at SAP. As such, it supports our business goals and our "how we run" philosophy by helping employees flourish in an inclusive working environment.

For more information about our human capital management approach, see the [Employees and Social Investments](#) section.

### Impact on Society

When assessing our impact on society, we consider two key areas: firstly, the contribution we make towards the fulfilment of the United Nations Sustainable Development Goals (SDGs, also called UN Global Goals) through our software solutions; and secondly, our efforts to make the world a better place through our corporate social responsibility (CSR) programs.

Our contribution to the SDGs is a cross-company effort driven by our sustainability contacts for each area of the business. We have mapped our existing engagement with customers to the SDGs in the [How Our Vision Comes to Life](#) brochure and illustrate further examples in our Web book [SAP and the UN Global Goals](#).

Our global CSR policy offers all SAP employees the opportunity to volunteer for up to eight working hours each year at a CSR event. For more information about our CSR events and activities, see the [Employees and Social Investments](#) section.

Our Global CSR Governance Committee, consisting of executive level representatives of different board areas at SAP, advises and approves the strategic direction of our overall CSR mission. In addition, regional CSR governance committees advise and approve all major CSR partnerships and efforts. Led by our head of global CSR, our global CSR team is part of the Office of the CEO and Corporate Affairs organization. There is also a regional CSR lead for each of our six major SAP regions.

On a group level, we ensure that donations are made in an appropriate manner through financial and compliance control processes described in our global CSR policy, and we monitor all major CSR programs for social impact. For example, in our SAP Social Sabbatical portfolio, we survey both the participants and the non-profit organization or social business involved to determine whether our team has met the agreed deliverables. To capture long-term impact, the evaluation is repeated six months after our team's departure.

## Innovation and Customer Loyalty

Every Executive Board member is responsible for innovation in their area. For more information about our software and services innovation efforts, see the [Products, Research & Development, and Services](#) section.

Our Customer Experience Council regularly looks at how we are driving improvements in customer experience. For more information about customer loyalty, see the [Customers](#) section.

## Changing Our Behavior and Culture

In our efforts to become a more sustainable organization, SAP is focusing on two key areas: our processes and our people. To achieve our goals, we need to challenge behaviors and find new ways of thinking.

Employee engagement is essential, as the ideas and commitment of our staff help drive change throughout SAP. We run a number of programs to help employees understand how sustainability is connected to our vision to help the world run better and improve people's lives, and how they can contribute.

In 2017, we encouraged open dialog through coffee corner sessions, virtual all-hands meetings, and social media. In addition, SAP includes sustainability in its onboarding training for new hires as well as management or line of business (LoB) specific training.

Employees can explore how SAP contributes to the SDGs through our customers and our own operations through the interactive Web book *SAP and the UN Global Goals*. In addition, they can take the openSAP online course "Sustainability Through Digital Transformation," which is also available to the general public.

## Focusing on Transparency and Building Awareness

Change starts with transparency and awareness. To gain a holistic overview of our performance, our Executive and Supervisory Boards have access to our own SAP Digital Boardroom solution that includes key financial and non-financial data such as human capital indicators.

In addition, employees can access a dashboard detailing the environmental and social performance and its impact on the financial performance for our company as a whole, single sites, or departments. For example, data on employee retention and women in management helps create transparency on the social performance of our company. A personalized app also provides employees with statistics about their personal impact through activities such as driving a company car or using electronic equipment.

We measure the success of our initiatives through our annual People Survey. In 2017, 93% of our employees agreed with the statement "It is important for SAP to pursue sustainability" compared to 92% in 2016 and 77% in 2009. Furthermore, 84% of our employees stated, "I actively contribute to sustainability goals at SAP." This is up from 82% in 2016 and 46% in 2009.

## Nurturing a Network of Sustainability Champions

To help drive progress in our sustainability initiatives, we need the support of employees in every part of SAP. We have a global internal network of about 150 sustainability champions who represent different regions and LoBs at SAP. Not only do they act as role models, but they also tailor sustainability to local and LoB needs and interests as well as share best practices.

# Human Rights and Labor Standards

## Upholding High Standards

Whether within SAP companies, across our extended supply chain, or through the impact of our solutions, we are committed to respecting human rights. We maintain high ethical standards and establish fairness, diversity, and inclusion across our business operations. In this way, we believe we can better attract and keep top talent, increase innovation and productivity, and enhance our reputation.

SAP is a signatory of the United Nations Global Compact. This is a voluntary undertaking to align our strategy and operations with universal principles on human rights, labor, the environment, and anticorruption.

By integrating human rights considerations into our standard business practices, we also support the values of the Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and the International Labor Organization Declaration on Fundamental Principles and Rights at Work. To ensure that our commitment to human rights translates into practice, we take guidance from the United Nations “Protect, Respect and Remedy” framework.

## Making a Commitment

The [SAP Global Human Rights Commitment Statement](#) details our response to the international standards mentioned above. Based on the SAP Code of Business Conduct and approved by our Executive Board, the statement focuses on three main areas: our employees, our ecosystem of partners and suppliers, and our solutions.

Our commitment statement applies to all our operations and subsidiaries globally and is reviewed on a regular basis. It also contains references to our other guidelines such as health and safety management, and data protection and privacy.

To communicate and enforce this commitment statement, SAP has established a new governance structure for human rights. This includes a steering committee and allocates responsibility for maintaining human rights standards across board areas.

## Understanding Our Strengths and Weaknesses

In 2017, we assessed our human rights processes and ongoing due diligence activity. With help from an external consulting company, we reviewed and mapped SAP documents against best-practice human rights initiatives and frameworks.

Following this, we consulted with representatives across 19 different business functions at SAP. Finally, we conducted interviews with a number of external stakeholders, including human rights organizations, asking for their views on key areas that SAP should focus on.

Key strengths identified through the assessment include our approach to diversity and inclusion, health, accessibility, products enabling human rights and enhancing sustainability, and social investment. Meanwhile, we identified opportunities to improve our approach to global workforce standards for employees and contractors and due diligence for human rights for customers and partners. We also identified areas for improvement associated with SAP products. For example, we aim to adapt our processes to minimize human rights risks associated with our products being used by military organizations. In addition, we would like to increase transparency within our outsourced operations to reduce slavery risks.

## Enforcing Our Standards

To assess our human rights measures, we consider external benchmarks, performance ratings, audit results, and stakeholder feedback. In addition, since 2012, we have conducted regular internal audits to verify that our subsidiaries adhere to our human rights standards and to check internal compliance with our policies.

In 2017, we conducted a labor audit at our Philippines locations in Manila. Through the audit, we identified potential legal risks concerning local labor laws for external workers. We took steps to enhance training for line-of-business managers and to improve processes relevant for external workers. Other areas for improvement identified through the audit include HR management processes for vacations, wages, and benefits, as well as health and safety policies for night-shift workers.

## Respecting the Rights of Our Employees

We have a long-standing policy of nondiscrimination in our dealings with employees and provide training on human rights issues that are most relevant to our business. These include security, privacy, and antidiscrimination.

We encourage any employees who feel they are subjected to conduct that violates our antidiscrimination policies to report it. They can reach out confidentially to their managers, HR officers,



compliance officers, or colleagues who are trained to be part of our internal mediation pool.

In addition, our global ombudsperson investigates employee complaints and mediates fair settlements. The ombudsperson also helps the Executive Board analyze HR-related complaints and consider ways to address potential issues before they occur.

## **Maintaining High Standards Across Our Supply Chain**

We expect all our business partners to respect human rights and to avoid complicity in human rights abuses. Our codes of conduct for suppliers and partners require them to uphold labor rights and to provide a safe and healthy work environment for all employees. In addition, we may carry out on-site audits to assess performance.

## **Respecting Human Rights Throughout Our Product Lifecycle**

As reflected in our human rights risk assessment, we are committed to respecting human rights throughout the lifecycle of our products – from design through development to use. We develop innovative solutions that help customers embed human rights standards into their business and supply chain strategies. For example, our customers can use the SAP Ariba Supplier Risk solution to gain the intelligence and transparency they need to understand human rights risks within their supply chains. They can then make informed procurement decisions that may improve lives.

When designing any solution, our development teams ensure that the product complies with human rights standards. For example, accessibility is a key area of focus and we follow Web content accessibility guidelines such as the Section 508 standards to ensure inclusive design in all our software.

The protection of personal information is another key area of focus for our development teams. To help ensure that our products enable our customers to respect digital rights, we adhere to robust privacy and security standards. These are defined in our global product development, quality, product standards, and data protection and privacy policies.

# Sustainable Procurement

## Making Our Supply Chain More Sustainable

A significant part of our social and environmental impact is delivered through our supply chain. Globally, more than 120,000 full time equivalents (FTEs) are linked to our supply network. Furthermore, total greenhouse gases emissions from our supply chain are linked to cumulated annual societal costs of approximately €160 million.

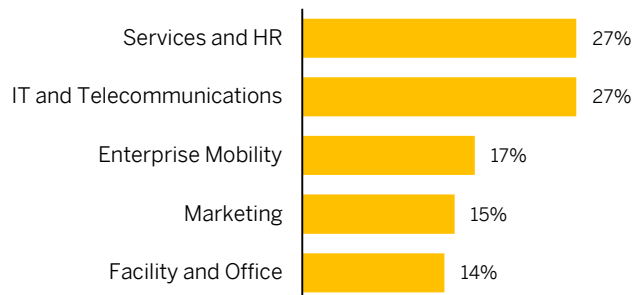
At SAP, we work hard to minimize any negative impacts associated with our supply chain. We achieve this through ongoing innovation that helps us ensure that our procurement activities meet high sustainability standards.

## What We Buy and Where We Buy It From

At SAP, we consider our suppliers to be key partners in our business success. In 2017, we spent more than €5 billion in transactions with nearly 16,000 suppliers worldwide.

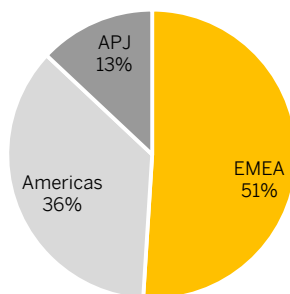
### Suppliers by Category

Percent of total spend



### Supplier Locations

Percent of total spend



## Promoting Supplier Diversity

Including more diverse businesses – that is, minority enterprises defined by gender, ethnicity, disability, sexual orientation, and other characteristics – into our supplier base has become a key priority for SAP. We believe that our commitment to an inclusive, bias-free culture in our workplace must be mirrored in our approach to our supplier base. In addition, through their flexibility and a high innovation potential, we believe that diverse businesses bring significant added value to SAP.

Driven by our Global Procurement Organization (GPO), our supplier diversity program is an integral part of our supplier management program. It strives to ensure that diverse businesses have a fair chance at competing for contracts and are treated equally with other SAP suppliers. Targeted to reach a 5% spend ratio for diversity suppliers in selected countries by 2020, the GPO will proactively involve diversity suppliers in selected categories in defined countries into our sourcing process. In 2017, we started a pilot project in the two procurement categories 'Services and HR' and 'Marketing', aimed at identifying a potential diversity-certified supplier for every bidding process whenever applicable.

SAP is currently a corporate member of the following minority supplier certification organizations:

- National Minority Supplier Development Council (NMSDC)
- WEConnect International
- Minority Supplier Development UK (MSDUK)
- US Business Leadership Network (USBLN)

Furthermore, in 2017 we started to include diversity and inclusion related content into the Global Procurement Policy and Guidelines. We encourage SAP suppliers to deliver goods and services that are accessible to everyone, including people with disabilities.

## Upholding High Standards Across Our Supply Chain

Our supplier code of conduct is included in our standard supplier contracts. This strengthens its enforceability and sends a clear signal about its importance for SAP.

In 2017, a new version of the supplier code of conduct went live. Key additions to the code include provisions on the Modern Slavery Act, diversity and inclusion, and an extension of the labor rights chapter.

## Improving Sustainability Through Innovation

In 2017, the SAP Ariba Supplier Risk solution went live. It enables the procurement departments of our customers as well as our GPO to identify, manage, and mitigate sustainability risks within our supply chain. These risks include, for example, unethical practice, workplace discrimination, workplace safety neglect, the use of child labor, human trafficking, and environmental disasters such as oil spills and radioactive contamination.

In addition, this innovative solution helps SAP measure due diligence activity and report on information-sharing programs across the supply chain. By providing insights into supplier risk, the solution enables us to detect early warning signals, minimize costly disruptions, and proactively monitor risk factors for each supplier. In this way, SAP can prioritize its corporate responsibilities, quantify the impact it wants its business to have, and identify the critical issues affecting the supply chain.

SAP also works closely with suppliers to find new ways to make our supply chain more sustainable. We have a number of ongoing projects that minimize our impact on the environment in areas such as enterprise mobility, catering, office supplies, and SAP events.

Our chief procurement officer and chief sustainability officer meet each quarter to discuss progress and challenges related to embedding sustainability in our procurement practices.

# Waste and Water

133 t

e-waste recycled

33%

paper reduction since 2009

1.2 M m<sup>3</sup>

in water consumption

## Taking a Global Approach

Our waste and water strategy ensures that we minimize the impact SAP has on the environment. By promoting company-wide initiatives, we dispose of less waste and reduce the amount of water we use in locations worldwide. A global approach combined with local targets and initiatives ensures that we optimize our environmental performance.

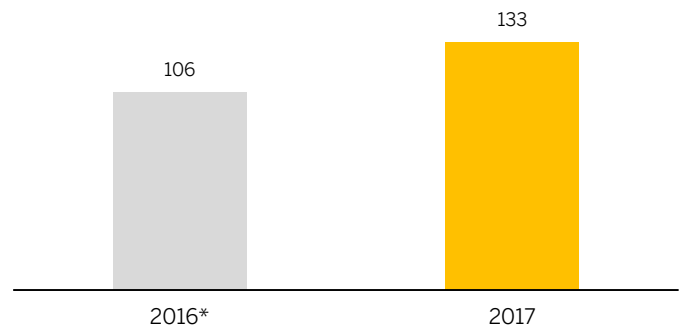
Taking steps to recycle our waste and save water also contributes to our business performance. Through ongoing initiatives at SAP sites, we reduce our operational costs while engaging our employees in our efforts.

## Managing Our E-Waste

Our e-waste comes from the data center servers, IT equipment including PCs, peripherals, and a range of mobile devices. Our servers and IT equipment are either resold or recycled in an environmentally friendly manner depending on their condition. In 2017, we continued our engagement with our international sustainable e-waste disposal partner. In addition, we work together with local e-waste disposal partners. In 2017, we also extended our e-waste recycling approach to the Americas.

In addition, we support the reuse of IT equipment internally through used-equipment shops in some country locations. A sustainable procurement program complements our waste reduction efforts by offering more sustainably produced IT equipment wherever possible.

E-Waste (Recycled)  
tons



\* E-waste for 2016 was recalculated. The rise in e-waste stems largely from recycling more servers in EMEA.

## Cutting Down on Landfill Waste

In 2017, we continued to roll out 'zero waste' diversion programs at offices across the globe as part of our ISO 14001 program with specific targets to achieve and maintain landfill diversion at or above 90%. This approach focuses on eliminating the need to send waste to landfill, by changing processes or promoting the reuse of materials.

We reduced our paper usage by almost 33% since 2009 through our global printing optimization initiative. Among other improvements, this sets printers to produce double-sided, black-and-white printouts as a default. In 2017, we continued our approach of paperless contracting. By using the SAP Signature Management application from DocuSign to enable electronic signatures, we have been able to handle 60,702 pages of contract, cutting down on paper contracts significantly.

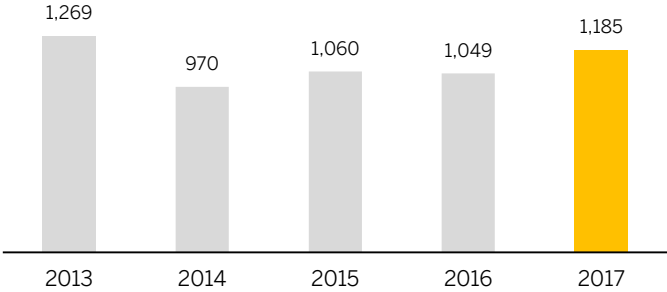
We have also successfully changed working behavior to significantly reduce the amount of pages that our employees print. A secure pull-printing system requires that employees bring their ID badges to a printing device to activate a job. This ensures better document security, and makes people think

about whether the printout is really needed. More than 83,000 employees currently use this system. Through all of these initiatives, our printing volume has gone down by 18 million pages in total since 2014. SAP employees can access a printing dashboard that shows the company's progress in reducing paper consumption at global, regional, and country levels.

## Using Water Efficiently

While our operations are not water-intensive, we continue to use water as efficiently as possible. As part of our efficiency efforts, we use rain and run-off water for irrigation and toilets in Walldorf, Germany, and other office locations.

**Global Water Usage**  
Thousand cubic meters



A few of our offices are located in areas with significant water scarcity. In locations such as Bangalore, India, or Ra'anana, Israel, we have been addressing this issue with dedicated water management efforts. These range from the reuse of treated sewage water to employee awareness campaigns.

# Public Policy

SAP has developed trusting relationships with governments worldwide by exploring the potential for information and communications technology (ICT) to spur economic growth, create jobs, and address societal challenges.

SAP engages with governments around the globe on a number of public policy issues, including the creation of reasonable framework conditions for new technologies or business models such as cloud computing, the Internet of Things, and Big Data.

SAP supports global best practices to ensure cybersecurity and the protection of personal data to build trust in digital technologies. SAP favors global policy frameworks and international standards that enable the free flow of data across borders and the free trade of digital products and services.

SAP believes in transparency in the political process. Accordingly, we are registered in the European Transparency Register for interest representatives. In the United States, our company is registered and reports in compliance with the Lobbying Disclosure Act.

## Political Contributions

SAP does not support any political parties. Under the laws of the United States, a number of SAP employees exercise their right to create a political action committee (PAC). The SAP America PAC is an independent, registered, and strictly regulated organization that allows eligible employees in the United States to support political candidates at the state and federal level. Consistent with U.S. law, SAP exercises no control over or influence on the SAP America PAC. SAP America PAC expenditures are transparent and available on the U.S. Federal Election Commission Web site.

# Memberships

To better understand and enable sustainable performance on a global level, both for our company and customers, SAP subscribes to and routinely engages in a range of third-party organizations, including:

- Alliance for Integrity
- Association of Climate Change Officers
- Bitkom e.V.
- Business for Social Responsibility
- Cellular Telephone Industries Association
- Deutschland sicher im Netz e.V.
- DIGITALEUROPE
- Dublin Chamber of Commerce
- econsense
- European Centre for Women and Technology
- European Roundtable of Industrialists
- Federation of German Industries
- Financial Women's Association
- Impact Valuation Roundtable
- Industrial Internet Consortium
- Information Technology Industry Council
- International Integrated Reporting Council
- Mechanical Engineering Industry Association
- Organization for International Investment
- Plattform Industrie 4.0
- Russian-German Chamber of Commerce
- Schmalenbach-Gesellschaft für Betriebswirtschaft e.V.
- The Business Council
- The Conference Board, Inc.
- The Sustainability Consortium
- The Wall Street Journal CEO Council
- Trans-Atlantic Business Council
- Transparency International Germany
- United Nations Global Compact (since 2000)
- U.S. Chamber of Commerce
- World Economic Forum

# Non-Financial Notes: Social Performance

## General Information About Social Indicators

### Boundaries

Our boundaries take two different perspectives: SAP as a company, which includes all our legal entities and operations and supply chain, and SAP as a solution provider enabling our customers. These boundaries are listed in detail in the GRI Standard Content Index.

### Social Indicators

Data for our social indicators is collected and reported on a quarterly or annual basis and is subject to external assurance for annual reporting.

### Employee Retention

We define employee retention as a ratio that puts emphasis on employee-initiated turnover – in other words, we seek to measure how many employees choose to stay with SAP. As opposed to keeping a low turnover rate – which companies generally seek to do – we aim to keep our retention rate high. A higher retention rate signifies that fewer employees are choosing to leave SAP.

### Women in Management

We define “women in management” as the share of women in management positions as compared to the total number of managers.

At SAP, we differentiate between the following categories of managers:

- Managers managing teams: Refers to managing teams of at least one employee or vacant positions

- Managers managing managers: Refers to managing managers that manage teams
- Board members

### Business Health Culture Index

The Business Health Culture Index (BHCI) measures the general cultural conditions in an organization that enable employees to stay healthy and balanced. The index covers questions concerning how employees rate their personal well-being and the working conditions at SAP, including our leadership culture. The BHCI is an indicator of the extent to which SAP successfully offers employees a working environment that promotes health supporting their long-term employability and their active engagement in reaching our ambitious corporate goals.

The BHCI is calculated based on the results of an employee survey (“People Survey”) conducted annually. All employees were invited to take part in the 2017 People Survey and approximately 70,500 employees participated (response rate: 77%). The BHCI score for 2014 was recalculated from 70% to 72% based on two updated questions in the people survey concerning work-life balance. The changes were carried out to simplify the questionnaire and to better compare against external benchmarks.

### Employee Engagement

We define employee engagement as a score for the level of employee commitment, pride, and loyalty, as well as our employees’ feeling of advocacy for SAP.

It is calculated based on the results of an employee survey that is conducted annually (see BHCI).

In 2015, we simplified our Employee Engagement Index and recalculated our score for 2015 from 81% to 82%. This calculation method has been applied moving forward.



# Non-Financial Notes: Environmental Performance

## Environmental Performance

We understand environmental performance as the measurable outcome of SAP's ability to meet environmental objectives and targets set forth in our environmental policy. In this context, we determine SAP's greenhouse gas footprint, total energy consumed, and data center energy as the three key environmental performance indicators. Furthermore, we realize external reductions by purchasing offsets and renewable energy which is partly self-generated in SAP locations but primarily purchased in form of Renewable Energy Certificates (RECs). Plus, we identify SAP's waste and water consumption as additional environmental aspects.

By looking at the energy usage and emissions throughout our entire value chain, we gain insights to help us manage our environmental performance and, in turn, help our customers to do the same.

The activities and trends behind our results for 2017 are detailed below. This includes information about the areas in which we consume the most purchased electricity, as well as the impact caused by the use of our products.

Our net carbon footprint is calculated by reducing purchased renewable energy certificates and carbon offsets from our gross carbon footprint in the respective reporting period. Our gross carbon footprint for 2017 was 680 kilotons CO<sub>2</sub>e (2016: 682 kilotons CO<sub>2</sub>e), including all GHG emission categories in Scope 1 and 2, as well as selected categories of Scope 3 as outlined in figure 1.

## General Information Boundaries

Our boundaries take two different perspectives: SAP as a company, which includes all our legal entities and operations and supply chain, and SAP as a solution provider enabling our customers. These boundaries are listed in detail in the Content Index of the Global Reporting Initiative (GRI).

## Reporting Approach

Data for our environmental indicators is collected and reported on a quarterly basis and is subject to external assurance for annual reporting.

Reporting on total energy consumed and data center energy is based on the data collected for the calculation of our greenhouse gas (GHG) footprint. All numbers are based on the metric system. Whenever we state "tons", we mean metric tons.

The indicators greenhouse gas emissions per employee and total energy consumed per employee are calculated on the basis of an average number of employees. This average is calculated by adding the FTEs at the end of each quarter and then dividing the result by four.

## Greenhouse Gas Footprint Definition

We define the GHG footprint or carbon footprint as the sum of all greenhouse gas emissions measured and reported for SAP, including the compensation with renewable energy or offsets.

## Reporting Principles

SAP's preparation of the GHG footprint is based on the Corporate Accounting and Reporting Standard (Scope 1 and 2) and the Corporate Value Chain (Scope 3) Standard of the World Resources Institute/World Business Council for Sustainable Development. This approach conforms to the requirements of GRI Standard indicators 302-1, 302-2, 305-1, 305-2, and 305-3.

In more detail, SAP reports our net greenhouse gas emissions according to the GHG Protocol Scope 2. In this context, two different calculation approaches are offered: the originally used location-based method and the recently introduced market-based method which is an amendment to the GHG Protocol Scope 2.

## Organizational Boundaries

SAP defines our organizational boundaries by applying the operational control approach as set out in the GHG Protocol.

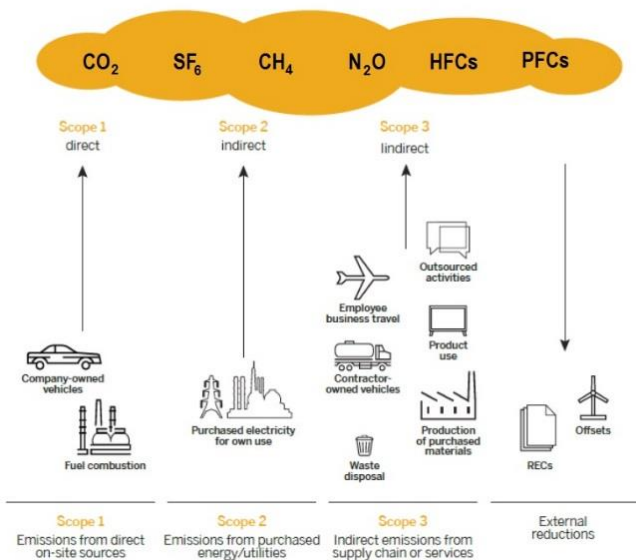
Operational control is established when SAP has the full authority to introduce and implement its operating policies. The emissions of all operations over which the company has operational control and all owned, leased facilities, co-location data centers, and vehicles that the company occupies or operates are accounted for in the GHG footprint. They are based either on measurements or, where no measured data is available, on estimations and extrapolations.

A portion of SAP's leased facilities operates under full-service or multitenant leases, where SAP does not have access to actual energy consumption information. SAP includes these facilities in our definition of operational control and accounts for them by estimating related energy consumption.

To support the growing demand for SAP's cloud offerings, we subcontract computation power in local third-party data centers. Carbon emissions are approximated and included based on the consumed computation power.

In most instances, however, SAP has 100% ownership of our subsidiaries. Accordingly, the difference between applying the control versus the equity approach is about 0.6% based on SAP revenue. If additional investments in associates were included, the difference would be even smaller, about 0.5%.

## Data Consistency Comparability



SAP uses a significance threshold of 5% for structural or organizational changes and 1% for methodology changes of total current year emissions. A structural or organizational change that increases or decreases the total inventory by 5% or more will trigger an adjustment of historic years. A structural or organizational change that increases or

decreases the total inventory by less than 5% will be considered insignificant and thus no adjustment will be made.

Additionally, we annually measure the cumulative cost avoidance of our carbon emissions, compared to a business-as-usual scenario. In 2015, we introduced a cumulative cost avoidance calculation based on a triennial rolling method. This leads to additional comparability and thus, we continued this approach in 2017.

## Error Correction

If a significant error is found in the base year inventory, it will be corrected. If a significant error is found that does not affect the base year but has an impact on this year's or last year's emissions, it will be corrected. An error is significant if it affects SAP's gross carbon footprint by more than 1%. No restatement due to error correction of historical data was necessary in 2017.

## CO<sub>2</sub> Emission Factors

The calculation of the GHG emissions is based on factors for conversion and extrapolation provided, among others, by IAE, WRI, US EPA, UK DEFRA, DEHSt, Environment Canada, GHG Protocol, and SAP's own measurements.

Where relevant, our CO<sub>2</sub> emissions factors consider all CO<sub>2</sub> equivalents (CO<sub>2</sub>e) for all greenhouse gases. Global Warming Potential factors are based on the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

In 2016, we updated our emissions and extrapolation factors for the categories stationary combustion facilities, corporate cars, corporate jets, business flights, rental cars, train travel, business trips with private cars, employee commuting as well as paper consumption, leading to a 10% downward impact on SAP's 2016 gross CO<sub>2</sub> emissions.

## Methodology & Further Details

We are reporting all our GHG emissions in CO<sub>2</sub> equivalents (CO<sub>2</sub>e) including the impact from CH<sub>4</sub>, N<sub>2</sub>O, and HFCs in our Scope 1 and 2 emissions. As SF<sub>6</sub> and PFCs mainly occur in chemical processes, they are not relevant for us.

Below you will find the different parameters contributing to our carbon footprint. The methodology explanation will be complemented by activities and trends.

## Scope 1

Refers to direct greenhouse gas emissions and is defined as emissions from sources that are owned or controlled by the organization. At SAP, the following areas are covered by Scope 1:

- **Stationary Combustion Facilities:** Emission calculation is based on building gas or oil consumption in kWh. Where no measured data is available, stable values (kWh/m<sup>2</sup>) are used for extrapolation of buildings (70% measured data). In cases where no specific information is available, natural gas reported by local sites is assumed to be reported in Lower Heating Value. Besides gas and oil we also started to use wood pellets to produce thermal heat for our buildings. The Scope 1 emissions of wood pellets can be set to net '0' since the wood itself absorbs an equivalent amount of CO<sub>2</sub> during the growth phase as the amount of CO<sub>2</sub> released through combustion. Still, to ensure complete accounting for all emissions caused we document the direct carbon dioxide (CO<sub>2</sub>) impact of burning wood pellets as 'outside of scopes' CO<sub>2</sub> emissions. In 2017 these emissions accounted for 206 tons of CO<sub>2</sub>.
- **Refrigerants Facilities:** Refrigerant data is reported for completeness of our carbon footprint, but HFC emissions are fully estimated (0% measured data) based on the number of server units and office space with an A/C system; all refrigerants are assumed to be HFC134a.
- **Mobile Combustion Corporate Cars:** Emission calculation is based on fuel consumption. In 2017, 28 countries reported actual fuel data (93% data coverage); for other countries, stable values (liters/car) are used for extrapolation based on the number of corporate cars reported. The stable values for extrapolation are based on SAP's 2016 carbon footprint data.
- **Refrigerants Corporate Cars:** Refrigerant emissions are based on a rough estimate of HFC emissions per car and are extrapolated based on the number of corporate cars reported (0% measured data).
- **Mobile Combustion Corporate Jets:** Emission calculation for SAP's own jets is based on actual fuel consumption (100% data coverage).

Consumption of fuel for our company cars remains the single greatest contributor to our Scope 1 emissions. In 2017, we continued to enhance our car policy by linking emissions caps to efficiency improvements of the automotive industry. In addition, we focused on greater shifts in commuting habits. We continued the global rollout of TwoGo by SAP, our car-sharing solution, which is now available in 110 SAP locations worldwide. To increase the scale and attractiveness of TwoGo, we make the solution available to the public free of charge. As part of our initiative to increase the proportion of electric vehicles in our car fleet to 20% by 2020, we continue to offer incentives to our employees to purchase electrical cars. As an example of additional transportation alternatives for our employees, we established a company bike program in Germany, where employees have the opportunity to select between using a bicycle or a company car to commute to work. A further commuting alternative to a company car in

Germany is participation in a national reduced train fare program called "BahnCard 100".

## Scope 2

Refers to indirect greenhouse gas emissions and is defined as emissions from the consumption of purchased electricity, steam, or other sources of energy generated upstream from the organization. At SAP, the following areas are covered by Scope 2:

- **Electricity Office:** Calculations of emissions is based on building electricity consumption. Emission factors are updated annually. Where no measured data is available, stable values (kWh/m<sup>2</sup>) based on SAP's 2016 carbon footprint data are used for extrapolation (63% data coverage).
- **Electricity Data Centers:** SAP-owned and SAP-managed data centers coming from acquisitions. Calculations of emissions is based on data center electricity consumption. Emission factors are updated annually. Where no data is available, electricity consumption for internal data centers is extrapolated based on the number of server units (87% data coverage). The stable values are based on SAP's 2016 carbon footprint data.
- **Purchased Chilled and Hot Water, Steam:** Calculations of emissions is based on consumption of district heating. Emission factors are updated annually. Where no measured data is available, stable values (kWh/m<sup>2</sup>) based on SAP's 2016 carbon footprint data are used for extrapolation (43% data coverage).

We continued a wide range of efficiency projects to reduce our electricity usage, including facility upgrades and new LEED certifications. We also expanded the management of our environmental performance through ISO 14001. In addition, we are one of the global corporations that have signed on to the RE100 initiative. Led by The Climate Group in partnership with CDP (formerly Carbon Disclosure Project), the goal of the RE100 campaign is to have 100 of the world's most influential businesses committed to 100% renewable electricity.

## Scope 3

Refers to other indirect greenhouse gas emissions and is defined as emissions that are a consequence of operations of an organization, but are not directly owned or controlled by the organization. In more detail, Scope 3 emissions are divided into upstream and downstream emissions.

Only selected upstream emissions are directly measured and hence included in our corporate target. The additional upstream emissions such as products and services or grey energy of our buildings are based on an estimate. Together,

our upstream emissions including these estimates are responsible for about 13% of SAP's total carbon footprint.

The following scope 3 GHG emissions are included in our corporate GHG target:

- **Business Flights:** Calculation of emissions is based on actual distance travelled and actual costs spent (60% data coverage). This data is used to determine average emission factors for short, medium, and long-haul flights. For CO<sub>2</sub> calculation, these factors are applied to actual controlling costs for business flights. Emission factors for business flights do not consider the radiative forcing factors.
- **Rental Cars:** Average emission factors from rental cars are calculated based on actual distance and actual costs spent (95% data coverage). These factors are used for extrapolation based on the controlling costs.
- **Train Travel:** Average emission factors from train travel are calculated based on actual distance traveled and actual costs spent (32% data coverage). These factors are used for extrapolation based on the controlling costs.
- **Business Trips with Private Cars:** Carbon calculation is based on distance traveled with a private car, extrapolation is based on FTE (32% data coverage). Company car trips are excluded from this activity type.
- **Employee Commuting:** A system-integrated commuting survey about the distance to work and the mode of transport is conducted annually for SAP globally. The survey responses are the basis for carbon calculation of employee commuting in the following year. Approximately 30,000 employees responded to the survey in 2017. Commuting data for non-responding employees and quarterly updates are extrapolated based on the number of FTEs excluding those employees who own a company car.
- **Electricity External Data Centers:** An external data center (co-location) is a local computing center with server units running SAP software that is operated by an external partner. CO<sub>2</sub> conversion factors are updated annually based on country specific grid factors and include CH<sub>4</sub> and N<sub>2</sub>O factors. Electricity consumption for external data centers is extrapolated based on the data center capacity, a utilization factor, and a power usage effectiveness (PUE) factor. As the utilization and PUE factors are not available for all external data centers, average factors are determined as follows: Utilization factor for external data centers is calculated as the sum of all actual consumptions divided by the sum of contracted server power of these data centers. The average PUE is calculated as the sum of all provided PUEs divided by the number of data centers that have provided this factor. (90% data coverage).

- **Logistics:** Calculation is based on the actual number of parcels and mail sent from our logistics center in Germany and is extrapolated globally.
- **Data Download:** Carbon calculation is based on the data volume downloaded by our customers globally (100% data coverage).
- **Paper Consumption:** Calculation of emissions caused by the consumption of printing paper is based on printer tracker data (100% data coverage).

Additionally, we annually measure and publish the following Scope 3 GHG emissions based on the GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard. These GHG emissions are not included in our corporate target and are meant to be for indicative purposes only.

## Upstream

Due to the link of our upstream emissions to operating expenses, for 2017, we extrapolated our upstream figures by multiplying our four key contributors to our upstream emissions from 2016 with the year-over-year increase of operating expenses between 2016 and 2017.

## Downstream

- **Use of Sold Products:** The vast majority of our overall emissions stem from the use of our software. When SAP software runs on our customers' hardware and on their premises, the resulting carbon footprint is about 30 times the size of our own net carbon footprint (9.7 million tons in 2017). SAP is eager to cooperate with customers to optimize their on-premise landscapes. However, given that we have no control over our customers' IT landscapes as they usually contain a lot of third-party products, we share this responsibility with others. Resource need per year is determined using a landscape simulation. It is extrapolated globally based on the number of productive installations and power usage effectiveness (PUE). We use a PUE factor of 1.6, which is the average PUE of our external data centers. Emissions are calculated using a global electricity emission factor. Due to the special characteristics of software products, we chose an assessment of resource need per year. This deviates from the minimum boundaries as defined by the GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard, which requires assessment and disclosure of "direct use-phase emissions of sold products over their expected lifetime." The calculation covers all of our major solutions, including on-premise software. Cloud solutions are not included, as they are part of our Scope 2 emissions. Mobile solutions (for example, SAP apps running on customer IT equipment) are also not included. Calculation parameters will be adapted when significant technology changes occur.

- **OtherScope 3 Emissions Not Included:** Upstream Transportation and Distribution (due to data complexity and de minimis); Upstream Leased Assets (not applicable); Processing of Sold Products (not applicable); End-of-Life Treatment of Sold Products (not applicable); Downstream Leased Assets (not applicable); Franchises (not applicable); and investments (not applicable).

## External Reduction

SAP uses external reductions, such as purchases of renewable energy and certified voluntary "offsets," to achieve its GHG targets. Emission reductions are subtracted from gross Scope 1 to 3 GHG emissions to achieve a net GHG inventory.

## Renewable Electricity

We define renewable energy as electricity coming from renewable energy sources such as wind, solar, hydro, and geothermal. The shares of renewable energy used by SAP are calculated by adding the amount of renewable energy specifically sourced, produced onsite by our own solar cells, and covered by Renewable Energy Certificates (RECs). We have developed a quality standard that defines key criteria for the procurement of RECs to drive change in the electricity market and to avoid the risk caused by low-quality products. The key characteristics of our renewable energy purchasing guidelines are as follows:

- **Type of renewable electricity:** SAP considers solar, wind, biogas, geothermal, and hydro power as renewable electricity. In 2017, we sourced only wind energy.
- **Installation:** The power plant producing the renewable energy shall not be older than 10 years. In case of a renovation of an old power plant, the 10-year rule applies only to the additional electricity output due to efficiency increase. Furthermore, SAP does not consider RECs from government supported power plants.
- **Vintage:** The renewable electricity must be produced in the same year or the year preceding the reporting period to which it will be applied.
- **Accounting:** SAP uses the grid-specific emissions factor to calculate the carbon reduction achieved by the RECs. As RECs are considered independently to the electricity achieved through their procurement, they can be allocated to any location globally

All energy outside the aforementioned categories falls within conventional energy. We define conventional energy as electricity coming from the standard electricity grid. The electricity grid provides a country-specific energy mix including all available sources, either fossil, nuclear, or renewable. Energy from renewable sources as part of the local grid is calculated as conventional energy and not displayed as part of renewable energy.

To calculate the carbon reductions of the RECs, the amount of purchased electricity is multiplied by the grid-specific carbon factor derived from the location where the renewable energy was produced. The sum over all certificates is the global renewable energy emissions value of SAP. However, data is only valid with an official certificate or written confirmation of the electricity supplier (100% data coverage).

In the net carbon footprint, the purchased as well as the produced renewable electricity is already deducted from our Scope 2 emissions.

## Offsets

We compensate our Scope 3 emissions by investing in the Livelihood Funds and their high-quality carbon credits, which are included in our overall net carbon footprint. By using this investment, the Fund aims to abate emissions or sequester carbon from the atmosphere.

On top of this, SAP invests in carbon emission offsets for air travel by charging an internal carbon price which is later invested in sustainable projects worldwide. Furthermore, employees owning a so-called climate neutral fuel card for their company car pay a small additional fee per liter gas purchased, which is then invested in gold standard certified compensation projects.

The investments in sustainable projects are equivalent to a certain amount of carbon reductions.

A requirement for offsets is that the minimum standard (Voluntary Carbon Standard, VCS) is applied. SAP ensures that the quantified GHG emission reductions from offsets are credible and that they meet four key accounting principles:

- **Real:** The GHG reductions represent actual emission reductions that have already occurred.
- **Additional:** The GHG reductions are surplus to regulation and would not have happened without the offset.
- **Permanent:** The GHG reductions are permanent or have guarantees to ensure that any losses are replaced in the future.
- **Verifiable:** The performance of the GHG reduction projects can be readily and accurately quantified, monitored, and verified.

In the net carbon footprint, purchased offsets are already deducted from our gross emissions.

## Total Energy Consumed

We define total energy consumed as the sum of all energy consumed through SAP-own operations, including energy from renewable sources. It is calculated based on the

consumption data obtained through our measurements for the GHG footprint and is the sum of energy consumption from stationary combustion facilities, mobile combustion corporate cars, mobile combustion corporate jets, electricity offices, electricity data centers, and purchased chilled water, purchased hot water, and purchased steam.

## Data Center Electricity

We define data center electricity as the sum of electricity consumed to provide internal and external computation power in SAP data centers and contracted third party data centers. A data center is any global, regional, or local computing center (location with any number of server units) that is part of our global IT infrastructure strategy. In 2017, we continued analyzing and reporting internal and external data center energy consumption intensity against our non-IFRS revenue.

Data center energy consumption per euro is calculated by dividing the electricity consumption of all internal and external data centers measured for the calculation of our GHG footprint by our revenue.

We will continuously improve the data quality of energy consumption of external data centers.

As it is expected that the emissions from external data centers will continue to grow in the future, SAP committed to a green cloud strategy and to compensate the emissions with renewable electricity certificates. By referring to the green cloud, we mean that SAP's cloud is carbon neutral due to purchasing 100% renewable electricity certificates and compensation by offsets.

## Additional Environmental Aspects

### Water

By water, we mean the total amount of freshwater withdrawn for our facilities. Data is based on estimations from sites and is largely extrapolated. Data was provided (estimated) for 50% of the total space; remaining data is extrapolated based on square meter footage.

### E-Waste

By e-waste, we mean any discarded electric devices used in our offices and data centers. Data is based on the actual weight of the devices (data coverage around 94%); remaining data is extrapolated based on the electricity consumption of SAP's data centers.

# GRI Index and UN Global Compact Communication on Progress

The social and environmental data and information included in the SAP Integrated Report 2017 has been prepared in accordance with the GRI Standards: Core option.

General Standard Disclosures	Links and Content	External Assurance	UN Global Compact Principles
<b>Organizational Profile</b>			
102-1	<a href="#">Overview of the SAP Group</a>	√	
102-2	<a href="#">GRI Content Index</a>	√	
102-3	<a href="#">Overview of the SAP Group</a>	√	
102-4	<a href="#">Overview of the SAP Group</a>	√	
102-5	<a href="#">Overview of the SAP Group</a>	√	
102-6	<a href="#">Overview of the SAP Group: Customers</a>	√	
102-7	<a href="#">Headcount and Personnel Expense: Subsidiaries and Other Equity Investments: Consolidated Financial Statements IFRS: Financial Performance: Review and Analysis</a>	√	
102-8	<a href="#">Chart Generator: Non-Financial Notes</a>		6
102-9	<a href="#">Sustainable Procurement</a>	√	3
102-10	There were no changes with significant impacts regarding our own organization or our supply chain.	√	
102-11	We support a precautionary approach towards environmental management. While we see little apparent risk for our own operations, we do see an opportunity to help our customers anticipate and manage this risk in a more agile and responsive fashion through effective product lifecycle management and sustainable design.	√	7
102-12	<a href="#">Memberships</a>	√	
102-13	<a href="#">Memberships</a>	√	
<b>Strategy</b>			
102-14	<a href="#">Letter from the CEO</a>		
<b>Ethics and Integrity</b>			
102-16	<a href="#">Business Conduct</a>	√	10
<b>Governance</b>			
102-18	<a href="#">Corporate Governance Report: Sustainability Management and Policies</a>	√	
<b>Stakeholder Engagement</b>			
102-40	<a href="#">Stakeholder Engagement</a>	√	
102-41	<a href="#">Human Rights and Labor Standards</a>	√	
102-42	<a href="#">Stakeholder Engagement</a>	√	
102-43	<a href="#">Stakeholder Engagement: Customers</a>	√	
102-44	<a href="#">Stakeholder Engagement: Customers</a>	√	

Reporting Principles		
102-45	<a href="#">Subsidiaries and Other Equity Investments</a> ; All entities are covered by the report.	✓
102-46	<a href="#">Materiality</a> ; <a href="#">About This Report</a>	✓
102-47	<a href="#">Materiality</a>	✓
102-48	<a href="#">Non-Financial Notes</a>	✓
102-49	<a href="#">Non-Financial Notes</a>	✓
102-50	<a href="#">About This Report</a>	✓
102-51	February 28, 2017	✓
102-52	Annual Reporting Cycle	✓
102-53	<a href="#">Investor Services</a>	
102-54	<a href="#">About This Report</a>	✓
102-55	<a href="#">GRI Content Index</a>	✓
102-56	<a href="#">Independent Assurance Report</a> ; <a href="#">Management's Acknowledgement of the SAP Integrated Report 2017</a> ; <a href="#">About This Report</a>	✓
Management Approach		
103-1	<a href="#">GRI Content Index</a> ; <a href="#">Non-Financial Notes</a>	✓
103-2	<a href="#">Business Conduct</a> ; <a href="#">Sustainability Management and Policies</a> ; <a href="#">Data Security and Privacy</a>	✓
103-3	<a href="#">Business Conduct</a> ; <a href="#">Sustainability Management and Policies</a> ; <a href="#">Data Security and Privacy</a>	✓

Disclosures on Management Approach (DMA) and Indicators	Links and Content	Omissions	External Assurance	Boundaries	Sustainable Development Goal	UN Global Compact Principles
<b>Material Aspect: Business Conduct</b>						
DMA	<a href="#">Business Conduct</a>		✓			10
205-1	<a href="#">Business Conduct</a>		✓	SAP	16	10
205-2	<a href="#">Business Conduct</a>		✓	SAP	16	10
205-3	<a href="#">Business Conduct</a>		✓	SAP	16	10
206-1	<a href="#">Litigation and Claims</a>		✓	SAP	16	
415-1	<a href="#">Public Policy</a> ; <a href="#">Business Conduct</a>		✓		16	10
<b>Material Aspect: Climate and Energy</b>						
DMA	<a href="#">Energy and Emissions</a>		✓			
302-1	<a href="#">Energy and Emissions</a> ; <a href="#">Non-Financial Notes</a> ; <a href="#">Chart Generator</a>		✓	SAP	7, 8, 12, 13	7, 8
302-2	<a href="#">Energy and Emissions</a>		✓	SAP + external parties	7, 8, 12, 13	7, 8
302-3	<a href="#">Energy and Emissions</a> ; <a href="#">Non-Financial Notes</a> ; <a href="#">Chart Generator</a>		✓	SAP	7, 8, 12, 13	8
302-4	<a href="#">Energy and Emissions</a>		✓	SAP	7, 8, 13	8
302-5	<a href="#">Non-Financial Notes</a> ;		✓	SAP + external parties	7, 8, 13	8



305-1	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>	√	SAP	3, 12, 13, 14, 15	7, 8
305-2	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>	√	SAP	3, 12, 13, 14, 15	7, 8
305-3	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>	√	external parties	3, 12, 13, 14, 15	7, 8
305-4	<i>Chart Generator:</i>	√	SAP + external parties	13, 14, 15	8
305-5	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>	√	SAP + external parties	13, 14, 15	8, 9
305-6	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>			3, 12, 13	
			As a software company, the emissions of ozone-depleting substances (ODS) is not material to		
305-7	<i>Energy and Emissions: Non-Financial Notes; Chart Generator:</i>			3, 12, 14, 15	
			As a software company, the emissions of nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions is not material to our		
<b>Material Aspect: Financial Performance</b>		√			
DMA	<i>Sustainability Management and Policies; Expected Developments and Opportunities; Report by the Supervisory Board</i> We are working on understanding the impact our solutions have on our customers' success, and document this in case studies. SAP does not conduct community assessment programs.	√			
Growth and Profitability	<i>Financial Performance: Review and Analysis</i>	√	SAP		
203-1					The amount of these investments is not material for SAP.
203-2	<i>Strategy and Business Model: <a href="http://www.sap.com/purpose">www.sap.com/purpose</a></i>	√	external parties	1, 3, 8	9
<b>Material Aspect: Human Capital Management</b>					
DMA	<i>Sustainability Management and Policies; Employees and Social Investments</i>	√			1, 2, 6
Employee Engagement	<i>Employees and Social Investments</i>	√	SAP		6

Business Health Culture Index	<a href="#"><i>Employees and Social Investments</i></a>	Injuries, diseases, lost days, or absenteeism are not a material issue for SAP as we track our Business Health Culture Index on a global basis.	√	SAP	3
Leadership	<a href="#"><i>Employees and Social Investments</i></a>		√	SAP	6
403-1	<a href="#"><i>Employees and Social Investments</i></a>		√	SAP	8
403-2		In Germany, we measure the accident rate with a "1000-Mann-Quote" (TMQ). This is calculated as the number of reportable accidents × 1,000 employees/number of full-time equivalents. Reportable accidents are work-related and include commuting accidents that result in more than three days of absence from work. In 2017, the TMQ was 3.6 (3.6 in 2016). We also measure the accident rate per one million working hours. In 2017, this value slightly increased to 2.4 reportable accidents per one million working hours (2.3 in 2016).			3, 8
403-3		There are no workers with a high incidence or high risk of diseases due to their work within SAP.			3, 8
403-4	<a href="#"><i>Stakeholder Engagement</i></a>		√	SAP	8
405-1	<a href="#"><i>GRI Content Index</i></a>		√	SAP	5, 8
405-2		SAP does not tolerate discrimination on any basis; this includes our commitment to equal pay for men and women for work of equal value. See also our Report on Equal Pay which we published in the German Business Register.		SAP	5, 8, 10
<b>Material Aspect: Innovation</b>					
DMA	<a href="#"><i>Sustainability Management and Policies:</i></a> <a href="#"><i>Non-Financial Notes: Social Performance</i></a>				
404-1	<a href="#"><i>Employees and Social Investments</i></a>	Training hours split by gender and employee category are not a material issue for SAP as we align our training activities according to the needs of each employee and do not tolerate discrimination.	√	SAP	4, 5, 8, 10

404-2	<u><i>Employees and Social Investments</i></u>		√	SAP	8	
	For continued employability and managing career endings, SAP has dedicated staff to support generational intelligence. These experts work on continuously improving processes and designing programs for sustaining employability as long as possible; providing training for cross-generation collaboration; managing career endings in a flexible way (for example, part-time options); and keeping employees connected with the company after retirement. SAP also participates in external research studies and networks on workforce demographics to share and learn about best practices in this field.					
404-3	<u><i>Employees and Social Investments</i></u>	The split by gender is proprietary information for SAP.	√	SAP	5, 8, 10	
R&D and Local Innovation	<u><i>Customers</i></u>		√	SAP		
<b>Material Aspect: Security and Privacy / Human and Digital Rights</b>						
DMA	<u><i>Security and Privacy; Human Rights and Labor Standards</i></u>		√		8, 16	
418-1	<u><i>Security and Privacy</i></u>		√	SAP + external parties	16	
407-1	<u><i>Human Rights and Labor Standards;</i></u>		√	SAP	8	3
	We are not aware of any operations or suppliers in which the right to exercise freedom of association and collective bargaining may be at significant risk.					
408-1	<u><i>Human Rights and Labor Standards;</i></u>		√	SAP	8, 16	5
	We are not aware of any operations or suppliers as having significant risk for incidents of child labor.					
409-1	<u><i>Human Rights and Labor Standards;</i></u>		√	SAP	8	4
	We are not aware of any operations or suppliers as having significant risk for incidents of forced or compulsory labor.					
<b>Material Aspect: Impact on Society</b>						
DMA	<u><i>Sustainability Management and Policies</i></u>		√			

UN Sustainable Development Goals	<i>Strategy and Business Model</i>	√	external parties	1 to 17
Social Investments	<i>Employees and Social Investments</i>	√	SAP + external parties	

# Management's Acknowledgement of the SAP Integrated Report 2017

The International Integrated Reporting (<IR>) Framework launched by the International Integrated Reporting Council in December 2013 has a provision that an integrated report should include a statement in which management acknowledges its responsibility for the report. Our respective statement for 2017 is as follows:

The Executive Board is aware of its responsibility to ensure the integrity of the SAP Integrated Report 2017. The members of the Executive Board have applied their collective mind to the preparation and presentation of our integrated report.

Similar to previous reports, we have applied the Guiding Principles of the <IR> Framework, but we also must ensure our compliance with legal requirements, such as the provisions regarding financial reporting in the German Commercial Code as set out in detail in the German Accounting Standard 20 Group Management Report, while balancing other reporting standards such as the GRI Standards of the Global Sustainability Standards Board, with the <IR> Framework.

Our Executive Board has reviewed the SAP Integrated Report 2017, including the consolidated financial statements, the combined management report, as well as the additional information on economic, environmental, and social performance.

Our Executive Board believes that the integrated report is presented in accordance with the <IR> Framework as far as possible given the aforementioned restrictions. Should the aforementioned restrictions ever cease to apply, we will continue to strive for further alignment with the <IR> Framework in future reports.

# Assurance Report of the Independent Auditor

To the Executive Board of SAP SE, Walldorf

We have performed an independent assurance engagement on selected qualitative and quantitative sustainability disclosures included in the Integrated Report 2017 (further: the "Report") of SAP SE, Walldorf (further "SAP"), published under <http://www.sapintegratedreport.com>.

For the selected quantitative sustainability indicators Business Health Culture Index, Employee Engagement, Employee Retention, Women in Management, Customer Net Promoter Score, Greenhouse Gas Emissions (Scope 1 and 2 as well as selected Scope 3 emissions including business flights and employee commuting), Renewable Energy and Total Energy Consumed, including the explanatory notes thereto, a reasonable assurance engagement was performed.

For the selected qualitative and quantitative sustainability disclosures on Materiality, About This Report, Stakeholder Engagement, Sustainability Management and Policies for the material aspects Business Conduct, Sustainable Procurement, Public Policy, Human Rights, Employees and Social Investment, Energy and Emissions (including selected Greenhouse Gas Protocol Scope 3 Emissions), Waste and Water, GRI Index and UN Global Compact Communication on Progress, as well as for the other qualitative and quantitative sustainability disclosures in relation to these material aspects, a limited assurance engagement was performed.

The selected qualitative and quantitative sustainability disclosures included in the scope of our assurance engagement are marked in the GRI Index, published online under <https://www.sap.com/investors/sap-2017-integrated-report> with the following symbol: v

It was not part of our engagement to review product or service related information, references to external information sources, expert opinions and future-related statements in the Report.

## Management's Responsibility for the Report

The legal representatives of SAP are responsible for the preparation of the Report in accordance with the Reporting Criteria. SAP applies the principles and standard disclosures of the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) in combination with the Corporate Accounting

and Reporting Standard (Scope 1 and 2) and the Corporate Value Chain (Scope 3) Standard of the World Resources Institute / World Business Council for Sustainable Development, as well as internally developed definitions, as described in the 'Non-Financial Notes: Social Performance' and the 'Non-Financial Notes: Environmental Performance' as Reporting Criteria.

This responsibility of the legal representatives includes the selection and application of appropriate methods to prepare the Report and the use of assumptions and estimates for individual qualitative and quantitative sustainability disclosures which are reasonable under the circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

## Independence and quality assurance on the part of the auditing firm

We are independent from the entity in accordance with the requirements of independence and quality assurance set out in legal provisions and professional pronouncements and have fulfilled our additional professional obligations in accordance with these requirements.

Our audit firm applies the national statutory provisions and professional pronouncements for quality assurance, in particular the Professional Code for German Public Auditors and Chartered Accountants (in Germany) and the quality assurance standard of the German Institute of Public Auditors (Institut der Wirtschaftsprüfer, IDW) regarding quality assurance requirements in audit practice (IDW QS 1).

## Practitioner's Responsibility

Our responsibility is to express a conclusion based on our work performed and the evidence obtained on the qualitative and quantitative sustainability disclosures marked in the GRI Index with the following symbol: v

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" and the International Standard

on Assurance Engagements (ISAE) 3410: "Assurance Engagements on Greenhouse Gas Statements" of the International Auditing and Assurance Standards Board (IAASB).

These standards require that we comply with our professional duties and plan and perform the assurance engagement to obtain a reasonable level of assurance to conclude that the above mentioned selected quantitative sustainability indicators are prepared, in all material respects, in accordance with the aforementioned Reporting Criteria; and respectively to obtain limited assurance whether any matters have come to our attention that cause us to believe that the selected qualitative and quantitative sustainability disclosures of the entity have not been prepared, in all material respects, in accordance with the Reporting Criteria. We do not, however, provide a separate conclusion for each disclosure. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement. The choice of audit procedures is subject to the auditor's own judgement.

Within the scope of our engagement, we performed amongst others the following procedures when conducting the limited assurance:

- Inquiries of personnel on corporate level, who are responsible for the materiality analysis, in order to gain an understanding of the processes for determining material sustainability topics and respective reporting boundaries of SAP.
- A risk analysis, including a media search, to identify relevant information on SAP's sustainability performance in the reporting period.
- Reviewing the suitability of the internally developed definitions.
- Evaluation of the design and implementation of the systems and processes for determining, processing and monitoring of disclosures relating to the qualitative and quantitative sustainability disclosures, including the consolidation of the data.
- Inquiries of personnel on corporate level responsible for providing the data and information, carrying out internal control procedures and consolidating the data and information relating to the qualitative and quantitative sustainability disclosures.
- Evaluation of selected internal and external documentation.
- Analytical evaluation of data and trends of quantitative sustainability disclosures, which are submitted by all sites for consolidation on group level.
- Reviewing the consistency in accordance with GRI Standard's 'Core Option' as declared by SAP with the qualitative and quantitative sustainability disclosures presented in the Report.

- Evaluation of the overall presentation of the selected qualitative and quantitative sustainability disclosures in the Report.

In addition, we conducted the following procedures to obtain reasonable assurance:

- An evaluation of the design and implementation, and tests of the operating effectiveness of the systems and methods used to collect and process the data, including the aggregation of these data into the selected quantitative sustainability indicators as presented in the Report
- Auditing internal and external documentation in order to determine in detail whether the selected quantitative sustainability indicators for the business year 2017 correspond with the underlying sources, and whether all the relevant information contained in such underlying sources has been included in the Report.
- Location visits to Walldorf and St. Leon Rot (both Germany) and a remote visit to Bangalore (India) to assess the quality of information management systems and the reliability of the data as reported to corporate level.

## Conclusions

Based on the procedures performed and evidence received to obtain reasonable assurance, the selected quantitative sustainability indicators Business Health Culture Index, Employee Engagement, Employee Retention, Women in Management, Customer Net Promoter Score, Greenhouse Gas Emissions (Scope 1 and 2 as well as selected Scope 3 emissions including business flights and employee commuting), Renewable Energy and Total Energy Consumed, published in the SAP Integrated Report 2017, including the explanatory notes thereto, are, in all material respects, presented in accordance with the Reporting Criteria.

Based on the procedures performed and evidence received to obtain limited assurance, nothing has come to our attention that causes us to believe that the selected qualitative and quantitative sustainability disclosures on materiality and stakeholder engagement, the disclosures on Materiality, About This Report, Stakeholder Engagement, Sustainability Management and Policies for the material aspects Business Conduct, Sustainable Procurement, Public Policy, Human Rights, Employees and Social Investment, Energy and Emissions (including selected Greenhouse Gas Protocol Scope 3 Emissions), Waste and Water, GRI Index and UN Global Compact Communication on Progress, as well as for the other qualitative and quantitative sustainability disclosures in relation to these material aspects, published in the SAP Integrated Report 2017, are, in all material respects, not prepared in accordance with the Reporting Criteria.

## Restriction of use/AAB clause

This assurance report is issued for purposes of the Executive Board of SAP SE, Walldorf, only. We assume no responsibility with regard to any third parties.

Our assignment for the Executive Board of SAP SE, Walldorf, and professional liability is governed by the General Engagement Terms for Wirtschaftsprüfer (German Public Auditors) and Wirtschaftsprüfungsgesellschaften (German Public Audit Firms) (Allgemeine Auftragsbedingungen für Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften) in the version dated January 1, 2017

([https://www.kpmg.de/bescheinigungen/lib/aab\\_english.pdf](https://www.kpmg.de/bescheinigungen/lib/aab_english.pdf)).

By reading and using the information contained in this report, each recipient confirms having taken note of provisions of the General Engagement Terms (including the limitation of our liability for negligence to EUR 4 million as stipulated in No. 9) and accepts the validity of the attached General Engagement Terms with respect to us.

Düsseldorf, February 21, 2018

KPMG AG

Wirtschaftsprüfungsgesellschaft

Laue

ppa. Hell

Wirtschaftsprüfer

[German Public Auditor]



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# Five-Year Summary<sup>1)</sup>

€ millions, unless otherwise stated	2017	2016	2015	2014	2013
<b>Revenues</b>					
Cloud subscriptions and support (IFRS)	3,769	2,993	2,286	1,087	696
Non-IFRS adjustments	2	2	10	14	61
Cloud subscriptions and support (non-IFRS)	3,771	2,995	2,296	1,101	757
Software licenses (IFRS)	4,872	4,860	4,835	4,399	NA
Non-IFRS adjustments	0	2	1	0	NA
Software licenses (non-IFRS)	4,872	4,862	4,836	4,399	NA
Software support (IFRS)	10,908	10,571	10,093	8,829	NA
Non-IFRS adjustments	0	1	0	5	NA
Software support (non-IFRS)	10,908	10,572	10,094	8,834	NA
Cloud and software (IFRS)	19,549	18,424	17,214	14,315	13,505
Non-IFRS adjustments	3	5	11	19	82
Cloud and software (non-IFRS)	19,552	18,428	17,226	14,334	13,587
Services (IFRS = non-IFRS)	3,911	3,638	3,579	3,245	3,310
Total revenue (IFRS)	23,461	22,062	20,793	17,560	16,815
Non-IFRS adjustments	3	5	11	19	82
Total revenue (non-IFRS)	23,464	22,067	20,805	17,580	16,897
Share of predictable revenue (IFRS, in %)	63	61	60	56	NA
Share of predictable revenue (non-IFRS, in %)	63	61	60	57	NA
<b>Operating expenses</b>					
Cost of cloud subscriptions and support (IFRS)	-1,660	-1,313	-1,022	-481	-314
Non-IFRS adjustments	233	247	232	88	97
Cost of cloud subscriptions and support (non-IFRS)	-1,427	-1,066	-789	-393	-218
Cost of software licenses and support (IFRS)	-2,234	-2,182	-2,291	-2,076	-2,056
Non-IFRS adjustments	190	238	283	258	263
Cost of software licenses and support (non-IFRS)	-2,044	-1,944	-2,008	-1,818	-1,793
Cost of cloud and software (IFRS)	-3,893	-3,495	-3,313	-2,557	-2,370
Non-IFRS adjustments	423	485	516	346	360
Cost of cloud and software (non-IFRS)	-3,471	-3,010	-2,797	-2,211	-2,011
Cost of services (IFRS)	-3,158	-3,089	-2,932	-2,426	-2,660
Non-IFRS adjustments	166	113	167	122	128
Cost of services (non-IFRS)	-2,991	-2,976	-2,765	-2,304	-2,533
Total cost of revenue (IFRS)	-7,051	-6,583	-6,245	-4,983	-5,031
Non-IFRS adjustments	589	598	683	467	487
Total cost of revenue (non-IFRS)	-6,462	-5,985	-5,562	-4,515	-4,543
Research and development (IFRS)	-3,352	-3,044	-2,845	-2,331	-2,282
Research and development (in % of total revenue, IFRS)	14.3	13.8	13.7	13.3	13.6
Research and development (in % of total operating expenses, IFRS)	18.0	18.0	17.2	17.6	18.5
Sales and marketing (IFRS)	-6,924	-6,265	-5,782	-4,593	-4,131
General and administration (IFRS)	-1,075	-1,005	-1,048	-892	-866
Depreciation and amortization (IFRS)	-1,272	-1,268	-1,289	-1,010	-951
<b>Profits and Margins</b>					
Cloud subscriptions and support margin (in % of corresponding revenue, IFRS)	56.0	56.1	55.3	55.8	54.8
Cloud subscriptions and support margin (in % of corresponding revenue, non-IFRS)	62.2	64.4	65.6	64.3	71.2
Cloud and software margin (in % of corresponding revenue, IFRS)	80.1	81.0	80.8	82.1	82.4

€ millions, unless otherwise stated	2017	2016	2015	2014	2013
Cloud and software margin (in % of corresponding revenue, non-IFRS)	82.2	83.7	83.8	84.6	85.2
Services margin (in % of corresponding revenue, IFRS)	19.3	15.1	18.1	25.2	19.6
Services margin (in % of corresponding revenue, non-IFRS)	23.5	18.2	22.7	29.0	23.5
Software and support gross margin (IFRS, in %)	85.8	85.9	84.7	84.3	NA
Software and support gross margin (non-IFRS, in %)	87.0	87.4	86.6	86.3	NA
Total gross margin (in % of total revenue, IFRS)	69.9	70.2	70.0	71.6	70.1
Total gross margin (in % of total revenue, non-IFRS)	72.5	72.9	73.3	74.3	73.1
Operating profit (IFRS)	4,877	5,135	4,252	4,331	4,479
Non-IFRS adjustments	1,892	1,498	2,095	1,307	1,003
Operating profit (non-IFRS)	6,769	6,633	6,348	5,638	5,482
Operating margin (in % of total revenue, IFRS)	20.8	23.3	20.5	24.7	26.6
Operating margin (in % of total revenue, non-IFRS)	28.9	30.1	30.5	32.1	32.4
Financial income, net	185	-38	-5	-25	-66
Profit before tax (PBT)	5,026	4,863	3,991	4,355	4,396
PBT margin (in % of revenues)	21.4	22.0	19.2	24.8	26.1
Income tax expense	-970	-1,229	-935	-1,075	-1,071
Profit after tax	4,056	3,634	3,056	3,280	3,325
Effective tax rate (IFRS, in %)	19.3	25.3	23.4	24.7	24.4
Effective tax rate (non-IFRS, in %)	22.6	26.8	26.1	26.1	25.9
Return on equity (profit after tax in percentage of average equity)	16	15	14	18	41
<b>Order Entry</b>					
New cloud bookings	1,448	1,147	874	436	NA
Deferred income - current (IFRS) <sup>7)</sup>	2,771	2,383	2,001	1,680	1,408
Orders – Number of on-premise software deals (in transactions)	59,147	57,291	57,439	54,120	55,909
Share of software orders greater than € 5 million (in % of total software order entry)	30	29	27	22	24
Share of software orders less than € 1 million (in % of total software order entry)	40	38	40	44	44
<b>Non-IFRS Adjustments</b>					
Revenue adjustments	3	5	11	19	82
Adjustment for acquisition-related charges	587	680	738	562	555
Adjustment for share-based payment expenses	1,120	785	724	290	327
Adjustment for restructuring	182	28	621	126	70
Adjustment for TomorrowNow and Versata litigation	0	0	0	309	-31
<b>Segment results</b>					
Applications, Technology & Services Segment <sup>11)</sup>					
Segment revenue	21,141	20,130	19,134	16,734	NA
Gross margin (in % of corresponding revenue)	73	74	74	75	NA
Segment profit	8,102	8,051	7,742	6,946	NA
Segment margin (Segment profit in % of Segment revenue)	38	40	40	42	NA
SAP Business Network Segment					
Segment revenue	2,261	1,925	1,616	647	NA
Gross margin (in % of corresponding revenue)	68	67	68	67	NA
Segment profit	385	341	317	105	NA
Segment margin (Segment profit in % of Segment revenue)	17	18	20	16	NA
<b>Liquidity and cash flow</b>					
Net cash flows from operating activities	5,045	4,628	3,638	3,499	3,832
Net cash flows from investing activities	-1,112	-1,799	-334	-7,240	-1,781
Net cash flows from financing activities	-3,406	-2,705	-3,356	4,298	-1,589
Free cash flow	3,770	3,627	3,001	2,762	3,266

€ millions, unless otherwise stated	2017	2016	2015	2014	2013
Free cash flow in % of total revenue	16	16	14	16	19
Cash conversion rate (net cash flows from operating activities in % of profit after tax)	124	127	119	107	115
Cash and cash equivalents	4,011	3,702	3,411	3,328	2,748
Short-term investments	774	971	148	95	93
Group liquidity (cash and cash equivalents/short-term investments/restricted cash)	4,785	4,673	3,559	3,423	2,841
Financial debts (due to banks, private placements, bonds)	6,264	7,826	9,174	11,093	4,308
Net liquidity	-1,479	-3,153	-5,615	-7,670	-1,467
Days' sales outstanding (DSO, in days)	70	74	71	65	62
<b>Assets, equity and liabilities</b>					
Trade and other receivables	6,017	6,050	5,362	4,443	3,962
Total current assets	11,930	11,564	9,739	8,999	7,351
Goodwill	21,274	23,311	22,689	21,000	13,690
Total non-current assets	30,567	32,713	31,651	29,566	19,739
Total current liabilities (including deferred income)	10,210	9,674	7,867	8,574	6,347
Total non-current liabilities (including deferred income)	6,747	8,205	10,228	10,457	4,695
Total equity (including non-controlling interests)	25,540	26,397	23,295	19,534	16,048
Total assets	42,497	44,277	41,390	38,565	27,091
Equity ratio (total equity in % of total assets)	60	60	56	51	59
Debt ratio (total liabilities <sup>2)</sup> in % of total assets)	40	40	44	49	41
Investments in goodwill, intangible assets or property, plant, and equipment (including capitalizations due to acquisitions)	1,630	1,145	676	8,636	1,813
<b>Key SAP Stock Facts</b>					
Issued shares <sup>2)</sup> (in millions)	1,229	1,229	1,229	1,229	1,229
Earnings per share, basic (in €)	3.36	3.04	2.56	2.75	2.79
Earnings per share, basic (non-IFRS, in €)	4.44	3.90	3.77	3.50	3.35
Earnings per share, diluted (in €)	3.35	3.04	2.56	2.74	2.78
Dividend per share <sup>3)</sup> (in €)	1.40	1.25	1.15	1.10	1.00
Total dividend distributed <sup>3)</sup>	1,671	1,498	1,378	1,315	1,194
Total dividend distributed in % of profit after tax <sup>3)</sup>	41	41	45	40	36
SAP share price <sup>2)</sup> (in €)	93.45	82.81	73.38	58.26	62.31
SAP share price – peak (in €)	100.35	82.81	74.85	62.55	64.80
SAP share price – low (in €)	82.43	64.90	54.53	50.90	52.20
Market capitalization <sup>2)</sup> (in € billions)	114.80	101.73	90.18	71.60	76.50
Return on SAP shares <sup>4)</sup> 1-year investment period (in %)	12.80	14.70	25.87	-4.80	4.20
Return on SAP shares <sup>4)</sup> 5-year investment period (in %)	9.00	17.30	13.99	13.90	21.80
Return on SAP shares <sup>4)</sup> 10-year investment period (in %)	10.20	9.20	6.72	7.40	7.90
<b>Employees and personnel expenses</b>					
Number of employees <sup>5), 7)</sup>	88,543	84,183	76,986	74,406	66,572
Number of employees, annual average <sup>5)</sup>	86,999	80,609	75,180	68,343	65,409
Number of employees in research and development <sup>5), 7)</sup>	24,872	23,363	20,938	18,908	17,804
Personnel expenses	11,643	10,229	10,170	7,877	7,489
Personnel expenses – excluding share-based payments	10,523	9,444	9,446	7,587	7,162
Personnel expenses per employee – excluding share-based payments (in € thousands)	121	117	126	111	109
Operating profit per employee (in € thousands)	56	64	57	63	68
Women working at SAP (in %)	33	32	31	31	31
Women in management <sup>7)</sup> (total, in % of total number of employees)	25.4	24.5	23.6	21.3	21.2
Women managing managers <sup>6), 7)</sup> (in %)	21.7	20.8	19.2	15.9	14.3

€ millions, unless otherwise stated	2017	2016	2015	2014	2013
Women managing teams <sup>6), 7)</sup> (in %)	26.8	25.9	25.3	23.3	21.7
Employee Engagement Index (in %)	85	85	82	79	77
Business Health Culture Index <sup>10)</sup> (BHCI, in %)	79	78	75	72	67
Leadership Trust Index (LTI, in %)	61	57	52	47	29
Employee retention (in %)	94.6	93.7	91.8	93.5	93.5
Total turnover rate (in %)	8	8	11	9	8
<b>Customer</b>					
Customer Net Promoter Score <sup>9)</sup> (in %)	17.8	19.2	22.4	19.1	12.1
<b>Environment</b>					
Net Greenhouse gas emissions (in kilotons)	325	380	455	500	545
Greenhouse gas emissions per employee <sup>5)</sup> (in tons)	3.8	4.7	6.0	7.3	8.3
Greenhouse gas emissions per € revenue (in grams)	13.9	17.3	21.9	28.4	32.4
Total energy consumption (in GWh)	920	950	965	920	910
Energy consumed per employee <sup>5)</sup> (in kWh)	10,600	11,800	12,500	13,400	13,900
Data center energy consumed (in GWh)	265	243	249	179	173
Data center energy per € revenue <sup>8)</sup> (in Wh)	11	11	12	10	NA
Renewable energy sourced (in %)	100	100	100	100	43

<sup>1)</sup> SAP Group. Amounts for 2013 to 2017 according to IFRS, unless otherwise stated.

<sup>2)</sup> As sum of current and non-current liability.

<sup>3)</sup> Numbers are based on the proposed dividend and on level of treasury stock at year-end.

<sup>4)</sup> Average Annual Return. Assuming all dividends are reinvested.

<sup>5)</sup> Full-time equivalents.

<sup>6)</sup> Relates to different levels of management position.

<sup>7)</sup> Numbers based on at year-end.

<sup>8)</sup> Data center energy consumption normalized against € revenue combines a relative measure of required energy to develop and operate solution in internal and external data center.

<sup>9)</sup> Due to changes in sampling, the 2015 Customer NPS is not fully comparable to the prior year's score.

<sup>10)</sup> The BHCI score for 2014 was recalculated from 70% to 72% based on two updated questions in the people survey concerning work-life balance.

<sup>11)</sup> Due to reorganizations numbers from 2014 are not fully comparable to other years.

# Glossary

## A

**Abakus** – Marketing attribution company acquired by SAP in 2017 specializing in measuring a customer's journey across all channels. By combining rich marketing performance management capabilities from Abakus with real-time software and SAP Hybris Marketing solution capabilities, marketers get unique insight into marketing performance to optimize campaigns and understand customer interaction.

**ABAP** – Proprietary SAP software programming language.

**add-on** – A software application that is technically dependent on – and can only be installed on top of – another application. See “application.”

**analytics** – Discovery and communication of meaningful patterns in data. It is applied to business data to describe, predict, and improve business performance; recommend action; and guide decision making across all organizations and functions in a company. Analytics helps companies gain new insight and understanding of their business performance based on data and statistical methods. See “SAP Analytics.”

**analytics solutions from SAP** – See “SAP Analytics.”

**application** – Software that enables organizations to address specific business needs and to perform certain business processes or activities. An application may comprise one software product or multiple software products, components, or instances.

**application lifecycle management** – The processes, tools, services, and organizational model used to manage SAP and third-party software throughout the solution lifecycle, from concept to phase-out. This recommended approach to application lifecycle management enables companies to adopt innovations from SAP rapidly and gain optimal value from their business solutions.

**Ariba** – See “SAP Ariba.”

**Ariba Network** – Business commerce network where companies of all sizes can connect to their trading partners anywhere, at any time from any application or device to buy, sell, and manage their cash more efficiently and effectively than ever before. Companies around the world use Ariba Network to simplify interenterprise commerce and enhance the results they deliver. See “business network.”

**artificial intelligence (AI)** – A standard definition refers to the simulation of human intelligence processes by machines and computer systems. These processes include learning through the acquisition of information and rules for using information; reasoning through using the rules to reach approximate or definite conclusions; and by self-correction. AI capabilities are built into SAP Leonardo Machine Learning and several applications powered by SAP Leonardo.

## B

**benchmarking** – Process of measuring products, services, and practices against those of leading companies, which can also be used as a reference point of measurement for evaluating best practices.

**best practice** – A management concept that involves devising a method of process that most effectively produces a desired outcome. SAP applications use business best practices to help customers automate common business processes through software and technology.

**Big Data** – The large volume of data created by billions of connected devices and people generating a tremendous amount of information about their behavior, location, and activity. This availability of massive amounts of data requires companies to rethink technology architecture and database structures.

**blockchain** – A reliable, difficult-to-hack record of transactions – and of who owns what. Blockchain is based on distributed ledger technology, which securely records information across a peer-to-peer network. Although it was originally created for trading Bitcoin, blockchain's potential reaches far beyond cryptocurrency. Blockchain ledgers can include land titles, loans, identities, logistics manifests – almost anything of value. The technology is still new, but the potential impact it can have on business is exciting, and immense.

**Business Beyond Bias** – Concept addressed by SAP SuccessFactors solutions that helps move business beyond bias in the hiring process. Solutions in SAP SuccessFactors HCM Suite cover the full range of talent decision-making processes, including decisions around whom to hire, how to manage, and whom to develop, reward, and promote. Organizations can make informed decisions, preventing, detecting, and eliminating bias right where it occurs.

**Business Health Culture Index (BHCI)** – A score for the general cultural conditions in an organization that enable employees to

stay healthy and balanced. The index is calculated based on the results of regular employee surveys.

**business intelligence (BI)** – Software that enables users to analyze an organization’s raw data and make fact-based decisions. BI-related processes include data mining, analytical processing, querying, and reporting. Business intelligence offerings from SAP include SAP BusinessObjects BI solutions, SAP Crystal Reports, as well as the SAP BusinessObjects BI platform.

**business network** – An online service that connects businesses and their systems to those of their trading partners and enables new processes and information and insight sharing only possible in a digital environment. See “Ariba Network.”

**business priority** – An important priority for a line of business, industry, or technology area for which SAP addresses with end-to-end solutions. See “end-to-end solution.”

**business process** – Set of logically related activities performed within an organization to complete a defined business task. SAP provides software and technology that enable and support business processes. Order processing and payroll are typical examples.

**business user** – Employees who spend significant time finding and sharing information, collaborating with others, coordinating projects, devising strategy or operational tactics, and coming up with new ideas based on information gathered from multiple sources. Also called “knowledge or information workers” or “business consumers.”

## C

**carbon credit** – A tradable certificate that allows the holder to emit one ton of CO<sub>2</sub> or the respective equivalent of any other greenhouse gas.

**carbon emission offset** – A unit of carbon dioxide-equivalent (CO<sub>2</sub> equivalent) that is reduced, avoided, or sequestered to compensate for emissions occurring elsewhere.

**carbon neutral** – A goal or state of emitting net zero greenhouse gases for certain activities. This includes reducing emissions, but also using renewable electricity certificates or carbon credits.

**cloud computing** – Generic term for flexible, IT-related services available through, or hosted on, the Internet for consumers and business, including storage, computing power, software development environments, and applications, combined with service delivery. Accessed as needed “in the cloud,” these services eliminate the need for in-house IT resources. See “cloud service model.”

**cloud deployment models** – The different infrastructure, software lifecycle management, and licensing models used for

deploying software, that is, where the software is running and how much control and flexibility a customer has.

**Cloud ERP** – A unified portfolio encompassing all of SAP’s cloud-based ERP solutions including SAP S/4HANA Cloud as the flagship ERP solution for midsize companies and large enterprises; SAP Business ByDesign for growing small to midsize enterprises; and SAP Business One for small businesses.

**cloud service model** – “As-a-service” offerings where cloud services are offered as infrastructure as a service (IaaS), platform as a service (PaaS), or software as a service (SaaS).

**cloud solutions from SAP** – Category used to communicate all of SAP offerings and efforts related to the cloud, including platform, managed services, solutions, technology, and infrastructure.

**component** – Modular piece of software offering functions accessible via interfaces.

**Concur Technologies** – See “SAP Concur.”

**connectivity** – A framework which describes the interrelatedness of SAP’s social, environmental, and economic performance. Based on statistical analysis, it allows us to quantify the impact of non-financial measures on the operating profit offering a holistic understanding of SAP’s value creation.

**corporate social responsibility** – SAP’s corporate social responsibility (CSR) program is about how the company creates social impact for people, both inside and outside SAP, to help make society more sustainable and the world run better.

**Customer Net Promoter Score (NPS)** – Describes the willingness of customers to recommend or promote an organization or company to others. It is defined as the percentage of customers that are likely to recommend an organization or company to friends or colleagues (promoters) minus the percentage of customers that are unlikely to do so.

## D

**data center** – A physical facility used to house computer systems and associated components.

**data center energy** – The amount of energy consumed in SAP’s own and external data centers. An external data center is a local computing center with server units running SAP software that is operated by an external partner.

**data warehouse** – An electronic collection of information organized for easy access by computer programs. See “SAP Business Warehouse.”

**design thinking** – See “SAP Design Thinking.”

**digital core** – An integrated system that enables customers to predict, simulate, plan, and even anticipate future business outcomes in a digital economy. SAP offers the SAP S/4HANA suite as a digital core, providing the framework that allows customers to run an entire enterprise in the cloud – such as finance, procurement, sales, inventory management, project system, and product lifecycle management. In this way, companies can achieve the real-time visibility they need into all mission-critical business processes and processes around their customers, suppliers, workforce, Big Data, and the Internet of Things.

**digital transformation** – Concept that refers to the changes associated with the application of digital technology in all aspects of society. Digital technologies empower customers and consumers in a way they never could before, transforming their relationship with brands and products. Businesses need to meet these new challenges or will miss the potential business success to be realized in the digital economy.

## E

**ecosystem** – Construct encompassing SAP and its customers and partners that extends the value SAP provides to its customers. By bringing together community-based insight, innovative partner solutions, and industry-leading collaboration and co-innovation, it enables customers to extract the greatest possible value from their SAP investments.

**Employee Engagement Index** – A score for the level of employee commitment, pride, and loyalty, as well as the feeling of employees of being advocates for their company. The index is calculated based on the results of regular employee surveys.

**employee retention** – The ratio of the average headcount (expressed in full-time equivalents/FTEs) minus employee-initiated terminations (turnover) divided by the average headcount, taking into account the past 12 months.

**end-to-end process** – Set of activities supporting defined management, core, or support processes. Customers can use these activities as a reference to map their own processes.

**end-to-end solution** – Software solution that drives strategic business outcomes and directly contribute to a business priority in an industry, line of business, or technology area. These solutions are structured into solution capabilities that comprise a number of individual software products, instances, and/or license materials. End-to-end solutions provide a business scope with a comprehensive value proposition. See “business priority.”

**enterprise resource planning** – See “SAP ERP.”

**e-waste (electronic waste)** – Any discarded electric devices used in our offices and data centers, such as computers, computer monitors, or mobile devices.

## F

**Fieldglass** – See “SAP Fieldglass.”

## G

**Gigya** – Company acquired by SAP in 2017 that offers customer identity technology and access management solutions designed to meet privacy, compliance, and security best practices. Cloud solutions include SAP Hybris Identity, which enables businesses to securely identify, register, and engage customers across channels and devices and renames the acquired offering Gigya Customer Identity Management Platform; and SAP Hybris Consent, which provides customer consent management capabilities and is a rename of the acquired offering Gigya Enterprise Preference Manager.

**Global Goals 100** – This is the overarching program name for the SAP Next-Gen initiatives from SAP University Alliances to address the 17 goals of the [Global Goals for Sustainable Development](#) initiative. The SAP Next-Gen program fosters next-generation leaders to generate new SAP innovations that can help customers accelerate their digitization and own business innovations.

**greenhouse gas (GHG) footprint** – The sum of all greenhouse gas emissions measured and reported, including renewable energy and third-party reductions, for example, offsets.

## H

**Hadoop** – Part of the Apache project sponsored by the Apache Software Foundation, this open source, Java-based programming framework supports the processing of large data sets in a distributed computing environment. As open source technology, Hadoop is an efficient distributed file system that enables the analysis and processing of very large volumes of data from a great number of varied, structured, and unstructured sources. SAP Distribution for Hadoop software provides redistribution of Apache Hadoop developed by Hortonworks.

**Hasso Plattner Founders' Award** – Introduced in 2014, an employee award that signifies the highest employee recognition at SAP, awarded annually by the CEO to an individual or a team.

**How We Run** – SAP's set of corporate values that sets behaviors that describe what makes SAP unique.

**hybrid cloud** – Deployment model that uses resources comprised of a mix of two or more distinct cloud deployment models that are integrated by standardized or proprietary technology enabling data and application portability. Also called “hybrid cloud deployment model.”

**hybris/Hybris** – See “SAP Hybris.”



**I**  
**infrastructure as a service (IaaS)** – Processing, storage, network, other computing resources and typically a defined level of support for consumers to deploy software (such as operating systems and applications). IaaS consumers do not manage underlying cloud infrastructure but may control networking components (such as host firewalls).

**in-memory computing** – A major advance in information technology that creates a dramatic change in computing, analytics, and data storage. Combining advances in multicore processing with more affordable servers, in-memory computing allows information to be stored in the main memory rather than in relational databases to greatly accelerate processing times. It disrupts the traditional IT stack comprised of hardware, middleware, and software, where disk-based relational databases can become bottlenecks.

**in-memory database** – Database that keeps all active records in main memory rather than on disk. Accessing in-memory records is considerably faster than retrieving them from the disk, significantly increasing performance. SAP HANA is SAP's groundbreaking database that allows businesses to take advantage of in-memory computing. See "SAP HANA."

**"innovative cloud company powered by SAP HANA"** – Goal of SAP strategy to be the most innovative cloud company to help customers innovate faster and drive successful business outcomes.

**Intelligent Enterprise** – SAP's concept of an event-driven, real-time business powered by intelligent applications and platforms. Enterprise data is at the core of a cycle whereby proprietary data assets from internal systems of record are combined with real-time, external data feeds to train intelligent algorithms. By embedding intelligence in core processes, businesses of all sizes will benefit from the automation of routine tasks and improved decision-making driven by advanced analytics.

**K**  
**key performance indicator (KPI)** – Performance figure for which threshold values are defined and against which validation is executed.

**L**  
**Leadership Trust Score** – Based on the Net Promoter Score (NPS) methodology that results from a question in our annual global employee survey that gauges employees' trust in our leaders. It measures our collective effort to foster a work environment based on trust. We use this score to further enhance accountability for our leaders and executive management.

**lean** – Set of manufacturing principles that first defines customer value, then reorganizes every step required to design, order, build, deliver, and maintain this value across all the organizations and units. As a result, firms can do more with less, respond more quickly to customer needs, create jobs that are more rewarding for employees, and reduce their impact on the environment.

**line of business (LoB)** – Internal organizational area or business unit in a company (division) that combines all responsibilities for a particular product, group, or set of processes, such as sales, purchasing, human resources, finance, marketing, and so on. SAP organizes its functional areas currently into 12 LoBs: asset management, commerce, finance, human resources, manufacturing, marketing, R&D/engineering, sales, service, sourcing and procurement, supply chain management, and sustainability.

**M**  
**machine learning** – Technology that teaches computers how to perform tasks by learning from data – instead of being explicitly programmed. It uses sophisticated algorithms to "learn" from massive volumes of Big Data.

**maintenance** – Software support comprising support for legal changes and corrections delivered through the SAP Notes tool, support packages, problem support, and access to information and online service channels – depending on the maintenance phase.

**managed cloud** – Deployment model that implies resources are dedicated to one customer and accessed through a VPN. The infrastructure is owned, managed, and operated by the cloud provider in the cloud provider's data center. SAP HANA Enterprise Cloud is SAP's managed cloud service. See "SAP HANA Enterprise Cloud."

**mobile apps** – Applications for mobile devices available for download, demo, and purchase on SAP Store, App Store, and other online stores. Mobile apps are categorized as either business/product or consumer in focus. At SAP, our mobile apps are task-oriented or allow access to existing on-premise software.

**O**  
**on demand** – Model of software deployment whereby providers license software for use as a service, usually in the cloud, so customers can use it when they need it, that is, "on demand." It eliminates the need for IT resources to manage infrastructure and thereby reduces operational expenses. See "cloud solutions from SAP."

**on premise** – A deployment model where a software license is purchased and deployed on the servers at the premises of the customer. The customer manages and controls the software.

**open source** – Software based on the concept of software developers coming together to build a virtual community and solving a common problem by developing working software that everyone has a right to change. Successful development projects under the open source model include Linux, a free operating system supported by SAP.

## P

**People Survey** – SAP’s annual employee survey that allows employees to provide feedback about issues that impact them.

**platform as a service (PaaS)** – Cloud infrastructure, operating system, programming languages, libraries, services, tools and typically a defined level of support for consumers to deploy consumer-created or acquired applications. PaaS consumers do not manage underlying cloud infrastructure but have control over deployed applications. SAP Cloud Platform is the PaaS offering from SAP. See “SAP Cloud Platform.”

**powered by SAP HANA** – An SAP offering powered by SAP HANA runs on the SAP HANA platform. More than 100 SAP applications are currently “powered by SAP HANA.” Partner solutions or applications that are powered by SAP HANA are certified by SAP to run on the SAP HANA platform. These applications take advantage of distinctive capabilities of SAP HANA to deliver key benefits, such as simpler administration, reduced overhead, and better business intelligence over conventional traditional technology platforms.

**powered by SAP Leonardo** – Applications powered by SAP Leonardo have SAP Leonardo technology behind them and provide machine learning, IoT, Big Data, predictive analytics, or blockchain technology capabilities. These may be existing SAP applications that now run as part of the digital innovation system or brand-new offerings such as SAP Brand Impact, SAP Connected Retail, or SAP Financial Assessment.

**private cloud** – Deployment model that implies resources are dedicated to one customer and accessed through the Internet. The infrastructure is owned, managed and operated by the customer, a third-party, or both, and is on the premises of the customer, cloud provider, or a third party. SAP indicates private cloud deployments using the term “private option” or “private edition.”

**private edition** – See “private cloud.”

**private option** – See “private cloud.”

**product** – A high-level non-versioned software offering that contains functionality and business logic to address a business need. An individual software product comprises software product versions.

**product footprint** – The environmental impact of products, processes, or services by production, usage, and disposal.

**public cloud** – Provides consumers access to a provider’s software applications running on a cloud infrastructure. The resources are located on the premises of the cloud provider, not of the customer, and are shared by multiple customers accessing them through the Internet.

## R

**release** – SAP software product that has a version number, is shipped at a particular time, and has defined maintenance phases.

**renewable energy** – The shares and types of electricity obtained from renewable sources such as hydro, wind, solar, geothermal, and biomass. It is calculated by adding the amount of renewable energy specifically sourced, produced on-site by our own solar cells and covered by Renewable Energy Certificates (RECs).

**responsible growth** – Economic growth that integrates with environmental responsibility and social equity.

**road map** – Product timeline that has a variety of objectives, including communication to customers, users, or other parties interested in the timing of future product releases; the features planned for those releases; general prioritization of features; and in some cases, the requirements of features in enough detail that current and prospective customers can give feedback on the feature itself and the product’s direction. See “SAP road maps.”

## S

**SAP ActiveEmbedded** – Enhanced engagement services for optimizing solutions and accelerating adoption of technologies without disrupting customer businesses.

**SAP Analytics** – Portfolio of solutions that help customers achieve the power of collective insight in Big Data by empowering them with the right information at the right time to make insightful business decisions, anticipate change, and uncover new opportunities. SAP Analytics solutions cover the areas of business intelligence, enterprise performance management, and governance, risk, and compliance. Formerly called analytics solutions from SAP.

**SAP Analytics Cloud** – A single solution encompassing analytics capabilities offered by SAP in the cloud. These capabilities, together with additional planning and analysis capabilities, have been integrated into this offering. This software as a service (SaaS) built natively on SAP Cloud Platform that provides all analytics capabilities for all users in one product. Customers can subscribe to SAP Analytics Cloud as a single solution with specific capabilities that can be licensed separately or together. The SAP Digital Boardroom solution is based on SAP Analytics Cloud. Formerly called SAP Cloud for Analytics.

**SAP Ariba** – Unified brand and portfolio of offerings resulting from the acquisition of Ariba in October 2012. The SAP Ariba portfolio includes cloud solutions for procurement, financials, and sourcing and the signature Ariba Network.

**SAP Business All-in-One** – Comprehensive and flexible business management solution targeted to midsize companies with up to 2,500 employees that are looking for a comprehensive, integrated industry-specific ERP solution with built-in best practices.

**SAP Business ByDesign** – A complete, integrated business solution delivered in the cloud, ideally suited for growing small to midsize companies and subsidiaries. The affordable suite connects and runs all business processes, including financials, HR, sales, procurement, customer service, and supply chain. It is available through a monthly software-as-a-service (SaaS) model.

**SAP BusinessObjects Business Intelligence** – A category of solutions including a platform designed to help optimize business performance and provide business insight by connecting people with information.

**SAP Business One** – An ERP solution designed for small businesses with up to 100 employees, providing a single, integrated solution for managing the entire business across all functions. A cloud version is available as SAP Business One Cloud, part of the new Cloud ERP portfolio.

**SAP BW/4HANA** – SAP's next-generation data warehouse solution built entirely on SAP HANA. It provides a simple set of objects that is well suited for modelling an agile and flexible layered architecture of a modern data warehouse. SAP BW/4HANA manages data from SAP applications or other systems, structured or unstructured, and allows accessing all models through an open SQL interface. SAP BW/4HANA comes with state-of-the-art user interfaces for administrators, developers, and end users as well as processes optimized for SAP HANA that users leverage huge amounts of data in real time for competitive advantage. It is not a legal successor of any SAP BW solution.

**SAP Cloud** – See “cloud solutions from SAP.”

**SAP Cloud Platform** – An open platform as a service (PaaS) for enterprises, large and small. With unique in-memory data management, comprehensive technical platform services, and unique business services leveraging machine learning, Big Data and IoT, customers and partners can rapidly build new innovative solutions and extend existing ones.

In 2018, SAP introduced a consumption-based commercial model (<https://cloudplatform.sap.com>) for SAP Cloud Platform to create one common digital customer experience for finding, trying, buying, and consuming cloud-based technical and

business services from SAP and partners. See “SAP Cloud Platform Enterprise Agreement” and “cloud credit(s).”

**SAP Co-Innovation Lab** – SAP location featuring a simulated, heterogeneous data center that incorporates hardware and infrastructure software from various vendors. The lab provides a hands-on environment for SAP, customers, and partners to innovate, accelerate, and showcase new business solutions and technologies collaboratively. Customers and partners can visit the lab to evaluate the latest SAP and partner solutions in a simulated, real-world infrastructure.

**SAP Concur** – Unified brand and portfolio of offerings for travel and expense management resulting from the acquisition of Concur Technologies in 2014 that helps customers manage business resources, processes, and spend through the world's largest business network in the cloud for comprehensive travel and expense management. SAP Concur solutions provide an integrated system for expense, invoice, travel, and spend intelligence in the cloud.

**SAP CoPilot** – A digital assistant that runs on top of other SAP applications to enable productivity tasks such as real-time information exchange with co-workers, note-taking, creation of reminders, and creation of draft objects that can be completed at a later time. SAP CoPilot contextualizes, analyzes, and uses informal and unstructured speech to execute actions and present users with business objects, options, and other relevant data in a simple and conversational way.

**SAP Customer Relationship Management (SAP CRM)** – Application that provides comprehensive software support to help marketing, sales, and service professionals obtain complete customer intelligence that they can leverage to manage customer relationships and customer-related processes effectively. SAP offers a number of CRM applications in on-premise and cloud deployment models.

**SAP Data Hub** – A cloud solution that automates and orchestrates data flows in a complex landscape to help integrate data into business processes and decision making and create faster insights. The solution enables businesses to manage data from numerous sources, SAP or third party, without having to centralize data into one location. SAP Data Hub allows data to be processed “in flow,” for example, while data is being recorded to the data store, or preparing it to be used for machine learning. It also provides enterprise data governance to see who changed or accessed the data. The solution lets companies safely and effectively move and share their data to enable agile data operations across the enterprise.

**SAP Design Thinking** – A methodology for routine innovation that brings together the right side of the brain (creative) with the left side of the brain (analytical). SAP Design Thinking workshops are a key differentiator for deployment of the SAP Leonardo digital innovation system.

**SAP Digital Boardroom** – A premier solution that contextualizes the boardroom, locations, and devices into a real-time enterprise experience. Powered by SAP HANA and experienced through the SAP S/4HANA suite and the SAP Analytics Cloud solution, the solution empowers leaders to monitor, simulate, and drive change in a digital economy. See “SAP Analytics Cloud.”

**SAP Digital Business Services** – New name of SAP’s services and support organization that provides a new approach to helping customers accelerate their digital transformation and business innovation using SAP Value Assurance service packages for SAP S/4HANA. It is also the name of the services and support portfolio includes a variety of named services and support offerings including SAP MaxAttention, SAP Enterprise Support, and others. Formerly called SAP Service and Support.

**SAP Enterprise Support** – Services that provide proactive support in addition to all features of SAP Standard Support services. These proactive support services encompass tools, processes, and services that enable continuous improvement, holistic application lifecycle management for continuous innovation, business and operational process improvements, and levers to address the total cost of operation (TCO).

**SAP ERP** – Application designed to optimize business and IT processes by reducing IT complexity, increasing adaptability, and delivering more IT value at a lower cost than traditional ERP solutions. It can support mission-critical, end-to-end business processes for finance, human capital management, asset management, sales, procurement, and other essential corporate functions. SAP ERP can also support industry-specific processes by providing industry-specific business functions that can be activated selectively via the switch framework, keeping the application core stable and helping ensure maximum performance.

**SAP Executive Board** – The official governing body of SAP, overseeing and deciding on the activities of the company. Subject to the requirements of stock corporation law, the SAP Executive Board is committed to the interests of SAP and bound by company policy. It provides the SAP Supervisory Board with regular, prompt, and comprehensive reports about all essential issues of business, corporate strategy, and potential risks. Membership in the SAP Executive Board is part of the official titles for these board members.

**SAP Fieldglass** – Unified brand and portfolio of offerings for contingent workforce resulting from the acquisition of Fieldglass in May 2014 that help companies manage their entire workforce including contract workers and permanent staff. The signature SAP Fieldglass Vendor Management System includes SAP Fieldglass Contingent Workforce Management, SAP Fieldglass Services Procurement, and SAP Fieldglass Worker Profile

Management solutions as well as the SAP Fieldglass Approvals mobile app.

**SAP Fiori** – First developed as a set of extensible HTML5 apps specific to key user roles, offering a seamless user experience across devices using responsive design principles. SAP Fiori apps target all employees of existing SAP customers, addressing the most common business functions, such as workflow approvals, information lookups, and self-service tasks. A free launchpad allows users to access their SAP Fiori apps from one single entry point.

**SAP Fiori user experience (UX)** – The user experience for SAP software. Based on modern design principles, it represents a consumer-like, consistent experience across devices, including tablets and smartphones.

**SAP HANA** – SAP’s flagship in-memory database. It enables businesses to process and analyze live data and make business decisions based on the most up-to-date information, a requirement of today’s digital economy. The innovative architecture in SAP HANA allows both transactional processing for data capture and retrieval, and analytical processing for business intelligence and reporting. It reduces time-consuming database and data management tasks and underpins intelligent applications that use advanced analytic processing. It includes features such as text analysis, multitenant database containers to support multiple isolated databases in a single SAP HANA system, as well as external machine learning libraries.

**SAP HANA Enterprise Cloud** – This service enables customers to access solutions in the cloud. It contains managed cloud applications, in-memory infrastructure, managed services, and through an additional license, SAP Cloud Platform to build custom applications in the cloud. On-premise applications from SAP can be delivered to customers through SAP HANA Enterprise Cloud.

**SAP HANA One** – Deployment of SAP HANA certified for productive use on the Amazon Web Services Cloud. SAP HANA One can be deployed for production use with small data sets, in minutes, opening a door to starter projects from customers, ISVs, and startups.

**SAP Hybris** – Unified brand and portfolio of offerings resulting from the acquisition of hybris AG in August 2013 that combines all cloud commerce solutions. SAP Hybris solutions help businesses sell more goods, services, and digital content through every touch point, channel, and device.

**SAP Hybris Cloud for Customer** – A cloud-based offering of CRM applications and tools developed for sales, service, and marketing teams that provides an overview of end-to-end business, as well as deep customer insight and personalized engagement, so that they can deliver a relevant experience at every step of the customer’s journey. It also offers designed-in

social collaboration to help transform social media conversations into business insight. SAP Hybris Cloud for Customer refers to a grouping of related CRM solutions and tools, which currently includes SAP Hybris Cloud for Sales, SAP Hybris Cloud for Service, and SAP Hybris Cloud for Social Engagement. The individual solutions are priced separately. An Edge edition is available for small and midsize enterprises.

**SAP Hybris Cloud for Sales/SAP Hybris Cloud for Service** – Cloud-based solutions targeted at sales and service organizations with designed-in social collaboration to help transform social media conversations into business insight. Formerly called SAP Cloud for Sales/SAP Cloud for Service.

**SAP Hybris Marketing Cloud** – A cloud solution offering customers a cloud marketing platform to carry out all core marketing processes in the cloud. Customers can purchase the entire solution or individual options for specific marketing functionality. In December 2016, as of the 1702 release, the SAP S/4HANA Marketing Cloud offering was renamed as SAP Hybris Marketing Cloud. The solution is the public cloud deployment of SAP Hybris Marketing which covers on-premise and private cloud deployment options. Replaces SAP S/4HANA Marketing Cloud.

**SAP.iO** – SAP's startup incubation engine and related program that helps innovators inside and outside of SAP build products, find customers, and ultimately change industries. The SAP.iO team works with the best entrepreneurs, developers, designers, and data scientists to upend how business works. (Note: extension changed from ".io" to ".iO" to reflect the logo spelling)

**SAP Leonardo** – Launched in 2017, this digital innovation system includes the following innovative technologies and capabilities: analytics, blockchain, Big Data, data intelligence, IoT, machine learning, as well as accelerator packages to ease implementation and deployment, software applications powered by SAP Leonardo, SAP Cloud Platform, and SAP Design Thinking workshops held in SAP Leonardo Center locations across the globe.

**SAP Leonardo Internet of Things** – Capability in the SAP Leonardo digital innovation system to connect things with people and processes, including connected products, assets, and fleets to drive Industrial IoT, and connected infrastructures, markets, and people to enable the "Internet of Everything."

**SAP Leonardo Machine Learning** – Capability in the SAP innovation system to embed intelligence into enterprise applications to solve common business challenges and train and deploy deep learning models. Applications powered by SAP Leonardo include SAP Resume Matching, SAP Brand Impact, SAP Cash Application, and SAP Service Ticket Intelligence, among others. In addition, SAP Machine Learning Foundation connects developers, partners, and customers to machine learning technology through SAP Cloud Platform. You can

create, consume, and maintain machine self-learning apps with ease by using algorithms that require no data-science skills.

**SAP Leonardo microservices and APIs** – Microservices and application programming interfaces (APIs) are available in the SAP Leonardo digital innovation system to help customers and partners integrate SAP Leonardo capabilities into their own applications. These microservices and APIs run on SAP Cloud Platform.

**SAP MaxAttention** – SAP's premium support offering, designed specifically for customers whose operations demand mission-critical customized support. The support option includes a full range of services for individual customer needs and covers all stages of an SAP solution's lifecycle.

**SAP PartnerEdge** – Global, partner-to-partner business collaboration network where SAP partners can share expertise, development capabilities, solutions, and knowledge to extend their market reach. Available at [www.sappartneredge.com](http://www.sappartneredge.com), the site gives partners access to information, product and business news, tools, training, and business resources to order products. Partners can also manage their relationship with SAP and collaborate with other SAP partners through SAP PartnerEdge.

**SAPPHIRE NOW** – SAP's signature business technology event and the largest SAP customer-driven conference is held annually in several locations around the globe. The global event in the United States is co-located with the Americas' SAP Users' Group (ASUG) annual conference. Attendees discover new initiatives, solutions, products, and services, as well as unique access to the latest business strategies and industry best practices from SAP customers, partners, executives, and industry experts to help them drive business results across all levels.

**Sapphire Ventures** – Name of independent venture firm spun off from SAP, providing the agility of a start-up while allowing companies to tap into SAP's global enterprise ecosystem of customers and partners. The firm partners with outstanding entrepreneurs and venture firms worldwide to build industry-leading businesses. Formerly called SAP Ventures.

**SAP Predictive Analytics** – Software that provides an intuitive tool for predictive model design and visualization. It is powered by SAP Leonardo, and available standalone or as part of the SAP Leonardo Analytics and SAP Leonardo Machine Learning capabilities.

**SAP road maps** – Available for industries, lines of business, and technology, SAP road maps highlight the SAP solutions available today, planned innovation, and the SAP vision for the future. See "road map."

**SAP S/4HANA** – Launched in February 2015, SAP's next-generation business suite offered exclusively on the SAP HANA platform, with on-premise and cloud deployment editions,

designed with the role-based user experience of SAP Fiori. Cloud editions are available for marketing, project services, and the enterprise. SAP S/4HANA is our enterprise resource planning (ERP) suite for the intelligent enterprise. It enables a business to access and analyze data in real time, giving them insights to act in the moment, providing predictive suggestions, and connecting business functions and the people within them. SAP S/4HANA software spans across all business functions including finance, human resources, sales, service, procurement, manufacturing, asset management, supply chain, and R&D.

**SAP S/4HANA Cloud** – SAP’s flagship next-generation Cloud ERP suite for large enterprises and their subsidiaries. It provides functionality that allows companies to run integrated and intelligent digital businesses in real time.

**SAP S/4HANA Finance** – A global financial solution powered by SAP HANA offering a complete choice of deployment (cloud, on premise, hybrid). It is part of the modular SAP S/4HANA Line-of-Business (LoB) Solutions.

**SAP Service and Support** – See “SAP Digital Business Services.”

**SAP solutions for small businesses and midsize companies** – Category of solutions that combine business management and business intelligence software for small and midsize enterprises (SMEs). It currently includes SAP Anywhere, Cloud ERP solutions, Edge editions of SAP BusinessObjects BI solutions, and other SME services. As with large enterprises, SMEs seek to streamline business processes, cut costs, drive growth, and increase profitability by receiving the right information at the right time – across all operations.

**SAP Standard Support** – Support option offering a reliable response to technical disruptions and for maintaining system health and integrity. This basic support offering features updates, problem resolution, knowledge transfer, quality management, and more to keep IT landscapes up-to-date and stable.

**SAP SuccessFactors** – Unified brand and portfolio of offerings resulting from the acquisition of SuccessFactors in August 2013. All cloud HR assets of SAP and SuccessFactors are consolidated under the SAP SuccessFactors brand. SAP SuccessFactors solutions help businesses sell more goods, services, and digital content through every touch point, channel, and device.

**SAP SuccessFactors Employee Central** – This solution is the foundation of the SAP SuccessFactors HCM Suite, offering core HR software delivered securely as a service from the cloud. It offers one global system of record, complete workforce overview combining HR and talent data, powerful analytics, and social collaboration fine-tuned to meet local needs.

**SAP SuccessFactors HCM Suite** – Suite of HR solutions for talent management, core HR, collaboration, and workforce analytics. The cloud-based suite provides solutions to bridge the gap between strategy and execution with tools to hire, reward, and develop the right people with the right skills to grow a business sustainably.

**SAP Supplier Relationship Management (SAP SRM)** – Procurement application that helps organizations in all industries improve their centralized sourcing and contract management and interact with suppliers through multiple channels. SAP SRM is designed to accelerate and optimize the entire end-to-end procure-to-pay process by supporting integrated processes and by enforcing contract compliance, which can result in realizable savings.

**SAP Supply Chain Management (SAP SCM)** – Application that helps companies adapt their supply chain processes to a rapidly changing competitive environment. SAP SCM helps transform traditional supply chains from linear, sequential processes into open, configurable, responsive supply networks in which customer-centric, demand-driven companies can monitor and respond more smartly and quickly to demand and supply dynamics across a globally distributed environment.

**SAP University Alliances** – Program that introduces students to the exciting technologies shaping business today, and designed to connect students around the world interested in SAP solutions, careers, and research opportunities. Students participate in classroom sessions, app development, networking opportunities, events, and more. The SAP University Alliances community provides connections between university leaders and students, SAP customers and partners, and SAP internal experts. Also see “SAP Next-Gen.”

**SAP Value Assurance** – A program that encourages customer migration to SAP software by communicating an assurance that SAP is committed to the success of the customer’s migration. Service packages offer dedicated planning, design support, and safeguarding services orchestrated by a technical quality manager. SAP Value Assurance does not provide any implementation or execution services. For SAP-led projects, also see “SAP Advanced Deployment.”

**SAP Ventures** – see “Sapphire Ventures.”

**Scope 1 (emissions)** – Direct greenhouse gas emissions from sources that are owned or controlled by the reporting company, for example, fuel burned in corporate cars.

**Scope 2 (emissions)** – Indirect greenhouse gas emissions from consumption of purchased electricity, heat, or steam.

**Scope 3 (emissions)** – Indirect emissions that are a consequence of the activities of the reporting company, but occur from sources owned or controlled by another company, such as business flights.

**service** – A service provided to a customer by SAP (or SAP partners). Examples include consulting or data management services.

**software as a service (SaaS)** – Software that is provided literally “as a service.” Software applications are delivered and managed remotely over a secure Internet connection and a standard Web browser. Access is charged on a subscription basis usually on a dedicated time basis and with expandable feature access options. Typically a defined level of support is included. See “cloud computing.”

**solution** – Business software that enables a customer to meet a challenge or take advantage of an opportunity and are built or assembled by flexibly combining software products and technology. SAP solutions may include support for best business practices and be aided by consulting and ongoing support. They may also be enhanced or extended by applications and services from partners.

**standard-related custom development project (SCDP)** – Customer-specific development with a contractually binding commitment for at least a partial retrofit.

**SuccessFactors** – See “SAP SuccessFactors.”

**sustainability** – A method to create social, environmental, and economic value for long-term business success and responsible global development.

## T

**technology platform** – The technical foundation for a business-driven software architecture that increases the adaptability, flexibility, openness, and cost-efficiency of IT operations and enables organizations to become more agile in responding to change.

**total energy consumed** – The sum of all energy consumed through SAP’s own operations, including energy from renewable sources and energy consumed by external data centers delivering our cloud offerings.

## U

**United Nations Global Compact (UN Global Compact)** – A policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labor standards, environment, and anti-corruption.

**UN Protect, Respect and Remedy** – A framework provided by the United Nations which offers states and companies guidance regarding the fulfillment of their duty to protect, respect and remedy human rights.

**UN Sustainable Development Goals (SDGs or UN Global Goals)** – A set of 17 global development goals by the United

Nations which are aimed to ensure an environmentally, socially, and economically sustainable future by tackling adverse challenges to humanity like poverty, hunger, and inequality.

**user experience (UX)** – In general terms, UX represents the quality of a user’s interaction with and perceptions of a system. UX at SAP is a characteristic of solutions or products that use SAP Fiori UX technology and follow SAP Fiori UX guidelines to offer a next-generation experience to our users. See “SAP Fiori user experience.”

## W

**women in management** – Phrase used to refer to the percentage of women in management positions (managing teams, managing managers, executive boards) as compared to the total number of managers, expressed by the number of individuals and not full-time equivalents (FTEs).

**works council** – As dictated by the German Works Council Constitution Act, a works council is a legal body for representing employees’ interests to the employer and codetermining the works in private companies. On June 21, 2006, the SAP AG employees working in Germany elected its first works council. A European works council was created in the spring of 2012. The SAP AG works council evolved to become the SAP SE works council in 2014 to reflect the legal entity of SAP SE.

# Financial Calendar and Addresses

## Financial Calendar

### 2018

**April 24**

Results for the first quarter of 2018

**May 17**

Annual General Meeting of Shareholders,  
Mannheim, Germany

**May 22**

Dividend payment

**July 19**

Results for the second quarter of 2018

**October 18**

Results for the third quarter of 2018

## Addresses

### Group Headquarters

SAP SE  
Dietmar-Hopp-Allee 16  
69190 Walldorf  
Germany

Tel. +49 6227 74 74 74  
Fax +49 6227 75 75 75  
E-mail [info@sap.com](mailto:info@sap.com)  
Web site [www.sap.com](http://www.sap.com)

The addresses of all our international subsidiaries and sales partners are available on our public Web site at <https://www.sap.com/directory/main.html>.

For more information about the matters discussed in the report, contact:

### Investor Relations

Tel. +49 6227 76 73 36  
Fax +49 6227 74 08 05  
E-mail [investor@sap.com](mailto:investor@sap.com)  
Web site [www.sap.com/investor](http://www.sap.com/investor)

### Press

Tel. +49 6227 74 63 15  
E-mail [press@sap.com](mailto:press@sap.com)  
Web site [www.sap.com/press](http://www.sap.com/press)



# Financial and Sustainability Publications

We present our financial, social, and environmental performance in the SAP Integrated Report 2017, which is available at <http://www.sapintegratedreport.com>. This Excerpt from the Integrated Report 2017 comprises all of the information required by accounting and disclosure standards applicable to us.

The following publications are available in English at [www.sap.com/investor](http://www.sap.com/investor), or in German at [www.sap.de/investor](http://www.sap.de/investor):

- Annual Report on Form 20-F (IFRS, in English)
- SAP Integrated Report in PDF format
- SAP SE Statutory Financial Statements and Review of Operations (HGB, in German)
- Interim Reports (in English and German)
- XBRL versions of the annual and interim reports
- SAP INVESTOR, SAP's quarterly shareholder magazine ([www.sap-investor.com](http://www.sap-investor.com), in English and German)

Complete information on the governance of SAP is available at [www.sap.com/corpgovernance](http://www.sap.com/corpgovernance). Materials include:

- Information about the management of the company, including the members of the Executive and Supervisory Board and their curriculum vitae
- Details of the directors' dealings in SAP shares
- Shareholder meeting documents and ballot results
- Articles of Incorporation
- Agreement on the Involvement of Employees in SAP SE
- German Code of Corporate Governance
- Declaration of Implementation pursuant to the German Stock Corporation Act, Section 161
- Code of Business Conduct for Employees
- Corporate Governance Statement pursuant to the German Commercial Code, Section 289f
- Corporate Governance Report
- Rules of Procedure for the Supervisory Board
- Profile of Skills and Expertise for the Supervisory Board

Additional SAP policies are made public at [www.sap.com/corporate-sustainability](http://www.sap.com/corporate-sustainability):

- SAP Human Rights Commitment
- SAP Global Health and Safety Management Policy
- SAP Environmental Policy
- SAP Supplier Code of Conduct
- SAP Partner Code of Conduct

# Publication Details

## Publisher

SAP SE  
Investor Relations

## Concept and Realization

SAP Integrated Report project team with the support of  
SAP software

## Photography Executive Board

Andreas Pohlmann, Munich, Germany

## Printing

ABC Druck, Heidelberg, Germany

## Copyright

SAP SE  
Dietmar-Hopp-Allee 16  
69190 Walldorf  
Germany

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**Group Headquarters**

SAP SE  
Dietmar-Hopp-Allee 16  
69190 Walldorf  
Germany

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