# 2015 SAP Annual Report on Form 20-F



### UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

# **FORM 20-F**

	REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934	
	OR	
Ø	ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934	
	For the fiscal year ended December 31, 2019	
_	OR	
	OF THE SECURITIES EXCHANGE ACT OF 1934	
	OR  SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d)	
	OF THE SECURITIES EXCHANGE ACT OF 1934	
	Date of event requiring this shell company report  For the transition period fromto	
	Commission file number: 1-14251	
	SAP SE	
	(Exact name of Registrant as specified in its charter)	
	SAP EUROPEAN COMPANY	
	(Translation of Registrant's name into English)	
	Federal Republic of Germany	
	(Jurisdiction of incorporation or organization)	
	Dietmar-Hopp-Allee 16	
	69190 Walldorf Federal Republic of Germany	
	(Address of principal executive offices)	
	Wendy Boufford	
	c/o SAP Labs	
	3410 Hillview Avenue, Palo Alto, CA, 94304, United States of Ame	erica
	650-849-4000 (Tel), 650-843-2041 (Fax)	
	(Name, Telephone, Email and/or Facsimile number and Address of Company Contact F	
	Securities registered or to be registered pursuant to Section 12(b) of	
		xchange on which registered
Ame	American Depositary Shares, each Representing one Ordinary Share, without nominal value New York	Stock Exchange
		0
		Stock Exchange*
	Securities registered or to be registered pursuant to Section 12(g) of the	
Indi	Securities for which there is a reporting obligation pursuant to Section 15(d) Indicate the number of outstanding shares of each of the issuer's classes of capital or common st	
	the annual report:	ock as of the close of the period covered
	Ordinary Shares, without nominal value: 1,228,504,232 (as of December 31, 2019)**	
	dicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the	Securities Act
maicate	Yes ✓ No □	, decarties / tet.
If this re	this report is an annual or transition report, indicate by check mark if the registrant is not required	to file reports pursuant to Section 13 or
	of the Securities Exchange Act of 1934.	to me reporte paredant to decide 120 c.
20(0) 0	Yes □ No ☑	
Not	Note — Checking the box above will not relieve any registrant required to file reports pursuant	to Section 13 or 15(d) of the Securities
	change Act of 1934 from their obligations under those Sections.	` '
	Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section	on 13 or 15(d) of the Securities Exchange
Act of 1	ct of 1934 during the preceding 12 months (or for such shorter period that the registrant was require	ed to file such reports), and (2) has been
	ubject to such filing requirements for the past 90 days.	
	Yes ☑ No □	
	Indicate by check mark whether the registrant has submitted electronically, if any, every Intera-	
	ursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 mont	hs (or for such shorter period that the
registra	gistrant was required to submit such files.)	
	Yes ☑ No □	
	Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a nor	
	ompany. See definition of "accelerated filer," "large accelerated filer," and "emerging growth comp	pany" in Rule 12b-2 of the Exchange Act.
(Check	Check one):	
		erging growth company
	If an emerging growth company that prepares its financial statements in accordance with U.S.	
	gistrant has elected not to use the extended transition period for complying with any new or i	revised financial accounting standards
provide	ovided pursuant to Section 13(a) of the Exchange Act.	

has elected to follow.  Item 17 □ Item 18 □  If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes □ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.	' 1	ne term - new or revised financial accounting standard - refers to any update issued by the Financial Accounting Standards Board to its
U.S. GAAP ☐ International Financial Reporting Standards as issued by the International Accounting Standards Board ☑ Other ☐ If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registran has elected to follow.  Item 17 ☐ Item 18 ☐  If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes ☐ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.	Ac	counting Standards Codification after April 5, 2012.
If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registran has elected to follow.  Item 17 □ Item 18 □  If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes □ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.		Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:
has elected to follow.  Item 17 □ Item 18 □  If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes □ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.	Į	J.S. GAAP 🔲 International Financial Reporting Standards as issued by the International Accounting Standards Board 🗹 Other 🗆
Item 17 □ Item 18 □  If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes □ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.		If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant
If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  Yes □ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.	ha	s elected to follow.
Yes ☐ No ☑  * Listed not for trading or quotation purposes, but only in connection with the registration of American Depositary Shares representing such ordinary shares pursuant to the requirements of the Securities and Exchange Commission.		ltem 17 □ ltem 18 □
pursuant to the requirements of the Securities and Exchange Commission.	lf t	
** Including 34 854 354 treasury shares	*	
moraling of the theory of the con-	**	Including 34,854,354 treasury shares.

[THIS PAGE INTENTIONALLY LEFT BLANK]

Introduction	4
Forward-Looking Statements	
Performance Management System	6
PART I	12
ITEM 1. IDENTITY OF DIRECTORS. SENIOR MANAGEMENT AND ADVISERS	12
ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE	
ITEM 3. KEY INFORMATION	
Selected Financial Data	
Exchange Rates	13
Dividends	13
Risk Factors	
ITEM 4. INFORMATION ABOUT SAP	
Strategy and Business Model	
Seasonality	
Products, Research & Development, and Services	
Security, Data Protection, and Privacy	
Customers  Energy and Emissions	
Intellectual Property, Proprietary Rights and Licenses	
Description of Property	
ITEM 4A. UNRESOLVED STAFF COMMENTS	
ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS	
Operating Results (IFRS)	
Foreign Currency Exchange Rate Exposure	
Liquidity and Capital Resources	
Off-Balance Sheet Arrangements	
Contractual Obligations	58
Research and Development	59
Critical Accounting Estimates	
New Accounting Standards not yet Adopted	
Expected Developments	
ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES	
Compensation Report	
Employee	
Share-Based Compensation Plans	
ITEM 7. MAJOR SHAREHOLDERS AND RELATED-PARTY TRANSACTIONS	
ITEM 8. FINANCIAL INFORMATION	
ITEM 9. THE OFFER AND LISTING	
ITEM 10. ADDITIONAL INFORMATION	
ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	97
ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES	97
PART II	98
ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES	
ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS	
ITEM 15. CONTROLS AND PROCEDURES	
ITEM 16. [RESERVED]	
ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT	
ITEM 16B. CODE OF ETHICS	99
ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES	
ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES	
ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS	
ITEM 16F. CHANGES IN REGISTRANT'S CERTIFYING ACCOUNTANT	
ITEM 16G. DIFFERENCES IN CORPORATE GOVERNANCE PRACTICES	100
PART III	103
ITEM 17. FINANCIAL STATEMENTS	103
ITEM 18. FINANCIAL STATEMENTS	
ITEM 19. EXHIBITS	103
Signatures	105
Index to the consolidated Financial Statements	
Report of Independent Registered Public Accounting Firm	
Consolidated Financial Statements IFRS	F-5

### Introduction

SAP SE is a European Company (Societas Europaea, or "SE") and is referred to in this report, together with its subsidiaries, as SAP, or as "Company," "Group," "we," "our," or "us."

In this report: (i) references to "US\$," "\$," or "dollars" are to U.S. dollars; (ii) references to "€" or "euro" are to the euro. Our financial statements are denominated in euros, which is the currency of our home country, Germany. Certain amounts that appear in this report may not add up because of differences due to rounding.

Unless otherwise specified herein, euro financial data have been converted into dollars at the noon buying rate in New York City for cable transfers in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York (the "Noon Buying Rate") on December 31, 2019, which was US\$1.1227 per €1.00. No representation is made that such euro amounts actually represent such dollar amounts or that such euro amounts could have been or can be converted into dollars at that or any other exchange rate on such date or on any other date. On February 7, 2020, the Noon Buying Rate for converting euro to dollars was US\$1.0950 per €1.00.

Unless the context otherwise requires, references in this report to ordinary shares are to SAP SE's ordinary shares, without nominal value. References in this report to "ADRs" are to SAP SE's American Depositary Receipts, each representing one SAP ordinary share. References in this report to "ADSs" are to SAP SE's American Depositary Shares, which are the deposited securities evidenced by the ADRs.

SAP, ABAP, Adaptive Server, Advantage Database Server, Afaria, Business ByDesign, BusinessObjects, ByDesign, Crystal Reports, Expenselt, PartnerEdge, PowerBuilder, PowerDesigner, Quadrem, Qualtrics, R/3, Replication Server, SAP Ariba, SAP BusinessObjects Explorer, SAP Business Workflow, SAP BW.4HANA, SAP C/4HANA, SAP Concur, SAP EarlyWatch, SAP Fieldglass, SAP Fiori, SAP HANA, SAP Jam, SAP Leonardo, SAP Lumira, SAP NetWeaver, SAP S/4HANA, SAP SuccessFactors, SAP Vora, SAPPHIRE, SAPPHIRE NOW, SQL Anywhere, The Best Run SAP, Triplt, TripLink, TwoGo, Web Intelligence and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries.

Throughout this report, whenever a reference is made to our website, such reference does not incorporate by reference into this report the information contained on our website.

We intend to make this report and other periodic reports publicly available on our web site (<a href="www.sap.com">www.sap.com</a>) without charge immediately following our filing with the U.S. Securities and Exchange Commission (SEC). Such reports are also available on the website maintained by the SEC (<a href="www.sec.gov">www.sec.gov</a>). We assume no obligation to update or revise any part of this report, whether as a result of new information, future events or otherwise, unless we are required to do so by law.

# Forward-Looking Statements

This 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. A broad range of uncertainties and risks, many of which are beyond our control, could cause our actual results and performance to differ materially from any projections expressed in or implied by our forward-looking statements. The uncertainties and risks include, but are not limited to:

- 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.
- 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.
- Claims and lawsuits against us, such as for IP infringements, or our inability to obtain or maintain adequate licenses for thirdparty 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.
- Non-compliance with increasingly complex and stringent, sometimes even conflicting, applicable data protection and privacy laws or failure to adequately meet the contractual 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, and could have a material adverse effect on our financial performance and our business in general.
- Unethical behavior and non-compliance with our integrity standards by employees, other individuals, partners or entities associated with SAP could seriously harm our business, financial position, profit, and reputation.
- A cybersecurity attack or breach, or cybersecurity vulnerabilities in our products, infrastructure, or services, or economic espionage could result in significant legal and financial exposure and have a material adverse effect on our customers, partners, financial position, performance, profit, cash flows, operations, brand, reputation, competitive position, the perception of our products and services by current and prospective customers, and our business in general.

We describe these and other risks and uncertainties in the *Risk Factors* section.

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.

The words "aim," "anticipate," "assume," "believe," "continue," "could," "counting on," "is confident," "development," "estimate," "expect," "forecast," "future trends," "guidance," "intend," "may," "might," "outlook," "plan," "predict," "project," "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 section; Risk Factors section; and other forwardlooking 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 Integrated Report 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, the ECB, the 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, the ECB, the 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 Factor* 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.

# **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 to Manage Our Financial Performance

# Measures to Manage Our Operating Financial Performance

In 2019, we used the following key measures to manage our operating financial performance:

**Cloud revenue (non-IFRS):** This revenue driver comprises the main revenues of our fast-growing cloud business. Revenue from cloud is derived from fees earned from providing customers with any of the following:

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (laaS)
- Premium cloud support beyond regular support embedded in cloud offerings.

For more information regarding cloud revenue and a description of these services, see the Notes to the Consolidated Financial Statements, *Note (A.1)*.

We use the cloud 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 revenue plus software licenses and support revenue. Cloud 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 support revenue after the software sale. Support contracts cover standardized support services and unspecified future software updates and enhancements. Cloud and software revenue also tends 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 total revenue (non-IFRS) to measure our growth at both actual currencies and constant currencies. The total of cloud revenue and 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 revenue. For new cloud bookings we take into consideration committed deals only, meaning utilization-based payments are not included in this measure. In this

way, it is an indicator of cloud-related sales success in a given period and of secured future cloud 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 expected future cloud revenue 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 gross margin (non-IFRS): We use our cloud gross margin (non-IFRS) to measure our process efficiency in our cloud business. Cloud gross margin (non-IFRS) is the ratio of our cloud gross profit (non-IFRS) to cloud 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.

Starting in 2020, new cloud bookings will be replaced by **current** cloud backlog (CCB), both in actual and at constant currencies, to manage our operating financial performance. We intend to use that measure to evaluate our overall go-to-market success in the committed cloud business. CCB is the contractually committed cloud revenue we expect to recognize over the upcoming 12 months as of a specific key date. Thus, it is a subcomponent of our overall remaining performance obligations following IFRS 15.120. For CCB, we take into consideration committed deals only. CCB can be regarded as a lower boundary for cloud revenue to be recognized over the next 12 months, as it excludes utilization-based models without pre-commitments and committed deals closed after the key date. For our committed cloud business, we believe the expansion of CCB over a period is a valuable indicator of go-tomarket success, as it reflects both new contracts closed as well as existing contracts renewed.

# Measures 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. DSO 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 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, as well as payments for lease liabilities.

# Measures to Manage Our Non-Financial Performance

In 2019, we used the following key measures to manage our nonfinancial 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 ongoing customer surveys and identifies, on a scale of 0-10, whether a customer is likely to recommend SAP to friends or colleagues, is neutral, or is unwilling to recommend. 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 NPS methodology that we use to compute the Customer NPS.

Starting in 2020, we will also use **carbon emissions** to manage our non-financial performance. It is used as a metric to strengthen our ambitious short-term and long-term carbon reduction targets. We measure our net carbon emissions according to the Greenhouse Gas (GHG) Protocol. The net carbon emissions are calculated by deducting emission savings such as renewable energy and carbon offsets from our gross carbon emissions.

### 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 "Intelligent Spend Management"; 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, Intelligent Spend Group segment and Qualtrics 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 assessment of the Executive Board's performance, are handled at the Board area level if the Board area is part of a segment, or at the segment level if the Board area comprises several segments. It is then the individual Board member's responsibility to break down the allocated budget adjustments within the segment budget boundary. 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), operating margin (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 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 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 for intangibles acquired in business combinations and certain stand-alone acquisitions of intellectual property (including purchased inprocess 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), Cloud Gross Margin (Non-IFRS), Operating Margin (Non-IFRS), Effective Tax Rate (Non-IFRS), and Earnings per Share (Non-IFRS)

Operating profit, cloud gross margin, operating margin, effective tax rate, and earnings per share identified as operating profit (non-IFRS), cloud gross margin (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. Constant currency measures on revenue backlog use the closing exchange

rate from the previous year's corresponding keydate instead of the average exchange rate.

### **Free Cash Flow**

Among other measures, we use free cash flow to manage our overall financial performance. We have modified the free cash flow metric by subtracting payments of leasing liabilities in order to eliminate the impact of increasing net cash flows from operating activities, following the adoption of IFRS 16.

€ millions	2019	2018	∆ in %
Net cash flows from operating activities	3,496	4,303	-19
Purchase of intangible assets and property, plant, and equipment (without acquisitions)	-817	-1,458	-44
Payments of lease liabilities	-403	0	NA
Free cash flow	2,276	2,844	-20

### 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 2019 and 2018

€ millions, unless otherwise stated					2019			2018
	IFRS	Adj.	Non-IFRS	Currency Impact	Non-IFRS Constant Currency	IFRS	Adj.	Non-IFRS
Revenue measures								
Cloud	6,933	81	7,013	-240	6,773	4,993	33	5,027
Software licenses	4,533	0	4,533	-101	4,431	4,647	0	4,647
Software support	11,547	0	11,548	-263	11,285	10,981	0	10,982
Software licenses and support	16,080	0	16,080	-364	15,716	15,628	0	15,629
Cloud and software	23,012	81	23,093	-604	22,489	20,622	33	20,655
Services	4,541	0	4,541	-124	4,417	4,086	0	4,086
Total revenue	27,553	81	27,634	-728	26,906	24,708	33	24,741
Operating expense measures								
Cost of cloud	-2,534	305	-2,228			-2,068	213	-1,855
Cost of software licenses and support	-2,159	141	-2,018			-2,092	130	-1,962
Cost of cloud and software	-4,692	446	-4,247			-4,160	343	-3,817
Cost of services	-3,662	254	-3,408			-3,302	151	-3,151
Total cost of revenue	-8,355	700	-7,655		_	-7,462	494	-6,969
Gross profit	19,199	781	19,979			17,246	527	17,773
Research and development	-4,292	438	-3,854		••••	-3,624	219	-3,406
Sales and marketing	-7,693	909	-6,784			-6,781	589	-6,192
General and administration	-1,629	477	-1,152		••••	-1,098	106	-992
Restructuring	-1,130	1,130	0			-19	19	0
Other operating income/expense, net	18	0	18			-20	0	-20
Total operating expenses	-23,081	3,654	-19,426	474	-18,953	-19,005	1,426	-17,579
Profit numbers								
Operating profit	4,473	3,735	8,208	-255	7,953	5,703	1,459	7,163
Other non-operating income/expense, net	-74	0	-74			-56	0	-56
Finance income	787	0	787			371	0	371
Finance costs	-589	0	-589			-418	0	-418
Financial income, net	198	0	198			-47	0	-47
Profit before tax	4,596	3,735	8,331			5,600	1,459	7,059
Income tax expense	-1,226	-954	-2,180			-1,511	-349	-1,860
Profit after tax	3,370	2,781	6,152			4,088	1,111	5,199
Attributable to owners of parent	3,321	2,781	6,102			4,083	1,111	5,193
Attributable to non-controlling interests	50	0	50			6	0	6
Key ratios								
Operating margin (in %)	16.2		29.7		29.6	23.1	·	29.0
Effective tax rate (in %)	26.7		26.2			27.0	·	26.3
Earnings per share, basic (in €)	2.78		5.11			3.42		4.35

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

### Non-IFRS Adjustments by Functional Areas

€ millions					2019					2018
	IFRS	Acqui- sition- Related	SBP <sup>1)</sup>	Restruc- turing	Non-IFRS	IFRS	Acqui- sition- Related	SBP <sup>1)</sup>	Restruc- turing	Non-IFRS
Cost of cloud and software	-4,692	308	138	0	-4,247	-4,160	264	78	0	-3,817
Cost of services	-3,662	9	246	0	-3,408	-3,302	9	142	0	-3,151
Research and development	-4,292	9	429	0	-3,854	-3,624	9	210	0	-3,406
Sales and marketing	-7,693	348	562	0	-6,784	-6,781	277	312	0	-6,192
General and administration	-1,629	16	461	0	-1,152	-1,098	18	88	0	-992
Restructuring	-1,130	0	0	1,130	0	-19	0	0	19	0
Other operating income/expense, net	18	0	0	0	18	-20	0	0	0	-20
Total operating expenses	-23,081	689	1,835	1,130	-19,426	-19,005	577	830	19	-17,579

 $<sup>^{1)}</sup>$  Share-based payments

# **PART I**

# ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

# ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

# **ITEM 3. KEY INFORMATION**

### **Selected Financial Data**

The following table sets forth our selected consolidated financial data as of and for each of the years in the five-year period ended December 31, 2019. The consolidated financial data has been derived from, and should be read in conjunction with, our Consolidated Financial Statements prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRS), presented in "Item 18. Financial Statements" of this report.

Our selected financial data and our Consolidated Financial Statements are presented in euros, unless otherwise stated.

### SELECTED FINANCIAL DATA: IFRS

€ millions, unless otherwise stated	2019	2018	2017	2016	2015
Income Statement Data: Years ended December 31,					
Cloud revenue	6,933	4,993	3,769	2,993	2,286
Software licenses and support revenue	16,080	15,628	15,780	15,431	14,928
Cloud and software revenue	23,012	20,622	19,549	18,424	17,214
Total revenue	27,553	24,708	23,461	22,062	20,793
Operating profit	4,473	5,703	4,877	5,135	4,252
Profit after tax	3,370	4,088	4,046	3,629	3,056
Profit attributable to owners of parent	3,321	4,083	4,008	3,642	3,064
Earnings per share <sup>(1)</sup>					
Basic in €	2.78	3.42	3.35	3.04	2.56
Diluted in €	2.78	3.42	3.35	3.04	2.56
Other Data:					
Weighted-average number of shares outstanding					
Basic	1,194	1,194	1,197	1,198	1,197
Diluted	1,194	1,194	1,198	1,199	1,198
Statement of Financial Position Data: At December 31,					
Cash and cash equivalents	5,314	8,627	4,011	3,702	3,411
Total assets	60,215	51,502	42,484	44,262	41,390
Current financial liabilities <sup>(2)</sup>	3,273	1,125	1,561	1,813	841
Non-current financial liabilities <sup>(2)</sup>	12,923	10,553	5,034	6,481	8,681
Issued capital	1,229	1,229	1,229	1,229	1,229
Total equity	30,822	28,877	25,515	26,382	23,295

 $<sup>(1)</sup> See \textit{Note} \textit{(C.6)} \ to our Consolidated Financial Statements for more information on earnings per share.$ 

<sup>(2)</sup> The balances include primarily bonds, private placements and bank loans. See Note (E.3) to our Consolidated Financial Statements for more information on our financial liabilities.

# **Exchange Rates**

The sales prices for our ordinary shares traded on German stock exchanges are denominated in euro. Fluctuations in the exchange rate between the euro and the U.S. dollar affect the dollar equivalent of the euro price of the ordinary shares traded on the German stock exchanges and, as a result, may affect the price of the ADRs traded on the NYSE in the United States. See "Item 9. The Offer and Listing" for a description of the ADRs. In addition, SAP SE pays cash dividends, if any, in euro. As a result, any exchange rate fluctuations will also affect the dollar amounts received by the holders of ADRs on the conversion into dollars of cash dividends paid in euro on the ordinary shares represented by the ADRs. Deutsche Bank Trust Company Americas is the depositary (the Depositary) for SAP SE's ADR program. The deposit agreement with respect to the ADRs requires the Depositary to convert any dividend payments from euro into dollars as promptly as practicable upon receipt. For additional information on the Depositary and the fees associated with SAP's ADR program see "Item 12. Description of Securities Other Than Equity Securities — American Depositary Shares."

For details on the impact of exchange rate fluctuations see "Item 5. Operating and Financial Review and Prospects — Foreign Currency Exchange Rate Exposure".

### **Dividends**

### **Dividend Distribution Policy**

Dividends are jointly proposed by SAP SE's Supervisory Board (Aufsichtsrat) and Executive Board (Vorstand) based on SAP SE's year-end stand-alone statutory financial statements, subject to approval by the Annual General Meeting of Shareholders. Dividends are officially declared for the prior year at SAP SE's Annual General Meeting of Shareholders. SAP SE's Annual General Meeting of Shareholders usually convenes during the second quarter of each year. Beginning with the dividends payable for the 2017 fiscal year and in accordance with a change of the German Stock Corporation Act that aims to implement joint market standards in Europe for corporate actions processing, dividends are remitted to the custodian bank on behalf of the shareholders on the third business day following the Annual General Meeting of Shareholders. Record holders of the ADRs on the dividend record date will be entitled to receive payment of the dividend declared in respect of the year for which it is declared. Cash dividends payable to such holders will be paid to the Depositary in euro and, subject to certain exceptions, will be converted by the Depositary into U.S. dollars.

Dividends paid to holders of the ADRs may be subject to German withholding tax. See "Item 8. Financial Information — Other Financial Information — Dividend Policy" and "Item 10. Additional Information — Taxation," for further information.

### **Annual Dividends Paid and Proposed**

The following table sets forth in euro the annual dividends paid or proposed to be paid per ordinary share in respect of each of the years indicated. One SAP ADR currently represents one SAP SE ordinary share. Accordingly, the final dividend per ADR is equal to the dividend for one SAP SE ordinary share and is dependent on the euro/U.S. dollar exchange rate. The table does not reflect tax credits that may be available to German taxpayers who

receive dividend payments. If you own our ordinary shares or ADRs and if you are a U.S. resident, refer to "Item 10. Additional Information — Taxation," for further information.

	Dividend Paid per Ordinary Share			
Year Ended December 31,	€	US\$		
2015	1.15	1.30(1)		
2016	1.25	1.37 <sup>(1)</sup>		
2017	1.40	1.65 <sup>(1)</sup>		
2018	1.50	1.68 <sup>(1)</sup>		
2019 (proposed)	1.58 <sup>(2)</sup>	1.73 <sup>(2),</sup> <sup>(3)</sup>		

<sup>&</sup>lt;sup>(1)</sup> Translated for the convenience of the reader from euro into U.S. dollars at the Noon Buying Rate for converting euro into U.S. dollars on the dividend payment date. The Depositary is required to convert any dividend payments received from SAP as promptly as practicable upon receipt.

The amount of dividends paid on the ordinary shares depends on the amount of profits to be distributed by SAP SE, which depends in part upon our financial performance. In addition, the amount of dividends received by holders of ADRs may be affected by fluctuations in exchange rates (see "Item 3. Key Information — Exchange Rates"). The timing, declaration, amount and payment of any future dividend will depend upon our future earnings, capital needs and other relevant factors, in each case as proposed by the Executive Board and the Supervisory Board of SAP SE and approved by the Annual General Meeting of Shareholders.

In light of SAP's strong financial performance and healthy balance sheet, the Supervisory Board of SAP SE approved, on November 4, 2019, the Executive Board's plan for enhanced capital return in 2020. Under this new program, the Company intends to repurchase shares and/or issue a special dividend with a combined volume of €1.5 billion by December 31, 2020.

 $<sup>^{(2)}</sup>$  Subject to approval at the Annual General Meeting of Shareholders of SAP SE currently scheduled to be held on May 15, 2020.

<sup>(3)</sup> Translated for the convenience of the reader from euro into U.S. dollars at the Noon Buying Rate for converting euro into U.S. dollars on February 7, 2020 of US\$1.0950 per €1.00. The dividend paid may differ due to changes in the exchange rate.

### **Risk Factors**

### Economic, Political, Social, and Regulatory Risks

Global Economic and Political Environment: 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 external factors that are difficult to predict and beyond our influence and control. Any of these factors could have a significant adverse effect on the overall economy as well as on our business.

The following potential events, among others, could bring risks to SAP's business:

- General economic, political, social, environmental, market conditions, and unrest (for example, United States-China supply chain restrictions, United States-North Korea conflicts, western pressure on Iran, UK/Brexit, unrest in Hong Kong, and so on)
- Continued deterioration in global economic conditions (impact on accurate forecast) or budgetary constraints of national governments
- Confrontations, frictions, trade or tariff conflicts such as that between the United States and China, with potential global implications as indicated by signs of a widespread economic slowdown, maybe even leading to a recession
- 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, civil unrest, natural disasters, or pandemic diseases impacting our business
- Regional conflicts, which may affect data centers as critical infrastructure assets

Any of these events could limit our ability to reach our targets as they could have a negative effect on our business operations, financial position, profit, and cash flows.

International Laws and Regulations: 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. 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 more than 180 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 external reporting standards and tax laws including, but not limited to, conflict and overlap among tax regimes as well as the introduction of new tax concepts that harm digitized business models
- Discriminatory, protectionist, or conflicting fiscal policies and tax laws, such as certain protectionist measures included in the U.S.
   Tax Reform which was enacted at the end of 2017, with some provisions still awaiting final regulations to provide guidance on compliance
- 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 or China), counter or even conflicting sanctions (such as in the United States and 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, as for example the EU General Data Protection Regulation (GDPR) or China's Cyber Security Law, 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)) or other compliance requirements (such as Service Organization Controls (SOC))
- 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 sanctions violations. For more information relating to the potential sanctions' violations noted above, see the Notes to the Consolidated Financial Statements, *Note (G.3)*.

As we expand into new countries and markets and/or extend our business activities in these markets, including emerging and highrisk 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.

Legal and IP: 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 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 might be brought against us, including claims and lawsuits involving customers or 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.

Data Protection and Privacy: Non-compliance with increasingly complex and stringent, sometimes even conflicting, applicable data protection and privacy laws or failure to adequately meet the contractual 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, and could have a material adverse effect on our financial performance and our business in general.

As a global software and service provider, SAP is required to comply with local laws wherever SAP does business. One of the latest major harmonizations of European data protection laws has been the General Data Protection Regulation (GDPR).

Furthermore, evolving regulations and new laws globally (such as the California Consumer Privacy Act and the EU's proposed e-Privacy Regulation) regarding data protection and privacy or other standards increasingly aimed at the use of personal information, such as for marketing purposes and the tracking of individuals' online activities, may impose additional burdens for SAP due to increasing compliance standards that could restrict the use and adoption of SAP's products and services (in particular cloud services) and make it more challenging and complex to meet customer expectations.

This could lead to increased risks for SAP, which could harm SAP's business and limit SAP's growth.

Non-compliance with applicable data protection and privacy laws by SAP and/or any of the sub-processors engaged by SAP within 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, or unlimited fines
- Damage claims by customers
- Harm to SAP's reputation
- Increased complexity in times of digitalization with regards to legal requirements in the context of cross-border data transfer
- Lack of digital frameworks such as in the context of machine learning or artificial intelligence could lead to distortion of individual data or information.

In addition, the German Federal Office for the Protection of the Constitution and security industry experts have warned of risks

related to a globally growing number of cybersecurity attacks aimed at obtaining or violating company data including personal data. We anticipate cyberattack techniques to continue to evolve and increase in sophistication, which could make it difficult to anticipate, prevent, detect, and mitigate attacks and intrusions, thus leading, for example, to risks described in the *Security, Data Protection, and Privacy* section, including risks in the following areas, among others:

 A globally increasing number of threat actor attacks aimed at obtaining or violating Company data including personal data as observed in recent prominent cases of cyberattacks where the use of ransomware was the preferred method of threat actors

Any one or more of these events could have a material adverse effect on our business, financial position, profit, and cash flows.

### Corporate Governance and Compliance Risks

Unauthorized Disclosure of Information: 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.

Ethical Behavior: Unethical behavior and non-compliance with our integrity standards by employees, other individuals, partners, or entities associated with SAP 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. This commitment is formalized in SAP's CoBC and supporting guidelines.

However, we might for instance encounter the following risks:

- 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 conduct
- Unethical and fraudulent behavior by individual employees, other individuals, partners, or entities associated with SAP leading to criminal charges, fines, and claims by affected parties
- Collusion with external third parties, for example by aiding in securing business

- Fraud and corruption, especially in countries with a low Corruption Perceptions Index score and particularly in emerging markets
- Increased scrutiny of public sector transactions in territories exposed to a high risk of corruption
- Increased exposure and impact on business activities in highly 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.

SAP has encountered situations that required clear messaging and strong action on non-compliance in the context of corrupt behavior that has the potential to harm our business and reputation. In South Africa, SAP is continuing to investigate its dealings with the public sector. For more information relating to the alleged antibribery law violations noted above, see the Notes to the Consolidated Financial Statements, *Note (G.3)*.

Environment and Sustainability: 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 targets for greenhouse gas emissions
- Failure to maintain our rating in sustainable investment indexes

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.

U.S. Judgments: U.S. judgments may be difficult or impossible to enforce against us or our Board members.

Currently, except for Jennifer Morgan all members of SAP SE's Executive Board, and except for Diane Greene, Aicha Evans and Dr. Gunnar Wiedenfels, all members of the Supervisory Board, are non-residents of the United States. A substantial portion of the assets of SAP and our Board members are located outside the United States. As a result, it may not be possible to effect service of process within the United States upon non-U.S. resident persons or SAP or to enforce against non-U.S. resident persons judgments obtained in U.S. courts predicated upon the civil liability provisions of the securities laws of the United States. In addition, awards of punitive damages in actions brought in the United States or elsewhere might be unenforceable in Germany.

### Financial Risks

Sales and Revenue Conditions: 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 typically ranges from one to three years, and goes up to five years
- Changes in customer budgets or seasonality of technology purchases by customers, or customer solvency challenges due for example to political instability
- Decreased software sales that could have an adverse effect on related maintenance and services revenue growth
- 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

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.

# Liquidity: 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.

Use of Accounting Policies and Judgment: In our accounting, management uses policies and applies estimates. This could negatively affect our business, financial position, profit, and cash flows.

To comply with IFRS, management is required to establish and apply accounting policies as well as to apply judgment, including but not limited to making and using estimates and assumptions. The policies and judgment affect our reported financial figures.

This use of policies and judgment could lead to risks in the following areas, among others:

- New pronouncements by standard setters and regulators as well
  as changes in common practice or common interpretations of
  existing standards might force us to change existing policies.
   Where such changes trigger significant changes to our processes,
  we might struggle to implement the changes in a timely manner.
- The facts and circumstances, as well as the assumptions on which our management bases its judgment might change over time, requiring us to change the judgment previously applied.

Both of the above risks could result in significant changes to our reported financials, and could have an adverse effect on our business, financial position, profit, and cash flows.

Currency, Interest Rate, and Share Price Fluctuation: 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 2019, approximately 72.6% 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, or risks related to currency devaluation (legal and/or administrative changes to currency regimes)
- 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.

# Insurance: 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 that 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.

# Venture Capital: We could incur significant losses in connection with venture capital investments.

Through Sapphire 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/or 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.

# Market Price Volatility: The market price for our ADRs and ordinary shares may be volatile.

The market prices of our ADRs and ordinary shares have experienced and may continue to experience significant volatility in response to various factors including, but not limited to:

- unauthorized or inadvertent premature disclosure of confidential information, including information concerning pending acquisition negotiations or acquisition rumors;
- fines, penalties or civil liabilities as a result of potential compliance violations in the context of alleged facts in ongoing or future investigations;
- proposed and completed acquisitions or other significant transactions by us or our competitors;
- the announcement of new products or product enhancements by us or our competitors;
- technological innovation by us or our competitors;
- quarterly variations in our results or our competitors' results of operations or results that fail to meet market expectations;
- changes in revenue and revenue growth rates on a consolidated basis or for specific geographic areas, business units, products or product categories;
- changes in our externally communicated outlook and our midterm ambitions;
- changes in our capital structure, for example due to the potential future issuance of additional debt instruments;
- general market conditions specific to particular industries;
- litigation to which we are a party;
- cybersecurity attacks and breaches;
- general and country specific economic or political conditions (particularly wars, terrorist attacks, etc.); and general market conditions.

Many of these factors are beyond our control. In the past, companies that have experienced volatility in the market price of their stock have been subject to shareholder lawsuits, including securities class action litigation. Any such lawsuits against us, with or without merit, could result in substantial costs and the diversion

of management's attention and resources, resulting in a decline in our results of operations and our stock price.

### **Human Capital Risks**

Human Workforce: 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 retention and expansion of our highly skilled and specialized workforce in identified strategic areas, are key success factors for our transition to become the Experience Company powered by the Intelligent Enterprise. 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 achievement 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.

### Operational Business Risks

Sales and Services: Sales and implementation of SAP software and services, including cloud, are 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. 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, maybe even exceeding maintenance cycles of solutions in scope
- Insufficient or incorrect information provided by the customer, subsequently leading to requirement or technology mismatches
- 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
- Challenges to achieve a seamlessly integrated and aligned service delivery in complex deliveries or implementations, for example due to lack of insights especially in the event of limited project involvement of SAP
- 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 or customer solvency challenges
- Inadequate contracting and consumption models based on subscription models for services, support, and application management
- Deviations from standard terms and conditions, which may lead to an increased risk exposure
- Statements on solution developments might be misperceived by customers as commitments on future software functionalities

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

# Partner Ecosystem: 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, which 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 or 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 or 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, SAP C/4HANA, and SAP Cloud Platform.
- Partners might not adhere to applicable legal and compliance regulations.
- Partners and their products might not meet quality requirements expected by our customers or SAP.
- 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 comply with 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 vendors, which could have an adverse effect on our reputation, business, financial position, profit, and cash flows.

Cloud Operations: We may not be able to properly protect and safeguard our critical information and assets, business operations, cloud offerings and portfolio presentation, 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 impacting successful cloud operations, such as:

- Capacity shortage and SAP's inability to deliver and operate cloud services in a timely and efficient manner as expected by or committed to our customers
- Customer concerns about the ability to scale operations for large enterprise customers
- Incomplete cloud portfolio representation or strategic directions of cloud operations that may not fully meet customer demands and potentially lead to a disconnected customer orientation
- Lack of hyperscaler availability and/or infrastructure stability, which may lead to challenges in meeting Service Level Agreement (SLA) commitments
- Lack of sufficient 'future skills' for delivering and operating hybrid environments
- Lack of tools to manage and optimize operations while providing a seamless end-to-end experience to customers
- Local legal requirements or changes to data sovereignty may lead to customers considering a reallocation of their primary or disaster recovery landscapes to a different data center
- Defects or disruption to data center operations or system stability and availability
- The certification provisioning may not always be exhaustively published in the SAP Trust Center and subsequently lead to incorrect customer perceptions

- Interruptions in the availability of SAP's cloud applications portfolio could potentially impact customer service level agreements
- 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 incompletion 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) for SAP
- Customers' cloud service demands might not match our data center capacity investments
- 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 a material adverse effect on our business, financial position, profit, and cash flows.

Cybersecurity and Security: A cybersecurity attack or breach, or cybersecurity vulnerabilities in our products, infrastructure, or services, or economic espionage could result in significant legal and financial exposure and have a material adverse effect on our customers, partners, financial performance, profit, cash flows, operations, brand, reputation, competitive position, the perception of our products and services by current and prospective customers, and our business in general.

As we continue to grow organically and through acquisitions, deliver a full portfolio of solutions via the cloud, host or manage elements of our customers' businesses in the cloud, process large amounts of data and offer more mobile solutions to users, in each case either directly or through partners and other third parties, we face a progressively more complex and threatening cybersecurity environment. The severity of the challenges posed by this cybersecurity environment is amplified due to the increasingly sophisticated and malicious global cybersecurity threat landscape in which we operate, including third-party data, products, and services that we incorporate into SAP products and services, and the continually evolving and increasingly advanced techniques employed by threat actors targeting IT products and businesses in general. Such threat actors include, but are not limited to, highly sophisticated parties such as nation-states and organized criminal syndicates. As a leading cloud company and service provider to some of the largest and best-known customers in the world, we are naturally a prominent target for cybersecurity attacks. We have observed increased threat activity to our products and systems, and we experience cybersecurity attacks of varying types and degrees on a regular basis. When we become aware of unauthorized access to our systems, we take steps intended to identify and remediate the source and impact of the incursions, and steps to comply with related necessary notification and disclosure obligations. To date, none of the incursions we have identified has had a material adverse effect on our business. However, we do not have visibility into all unauthorized incursions, and our systems may be experiencing ongoing incursions of which we are not aware. In addition, while we are continually taking steps to enhance our cybersecurity defenses,

increased investments, coordination, and resources are required to achieve our objective of ensuring over time that our cybersecurity infrastructure meets or exceeds evolving industry standards. Achieving this objective will require continued effort and vigilance, including sustained investment of money and management resources in order to support the ongoing development and maintenance of systems that meet these standards. As a result, we are subject to risks and associated consequences in the following areas, among others:

- Identified or undetected cybersecurity defects and vulnerabilities
- Increased complexity and risk of exploitation due to utilization of open-source software components
- Exposure of our business operations and service delivery due to a number of threats, including virtual attack, disruption, damage, and/or unauthorized access, theft, destruction, industrial and/or economic espionage, serious or organized crime, and other illegal activities, as well as violent extremism and terrorism
- Abuse of data, social engineering, misuse, or trespassers in our facilities, or systems being rendered unusable
- State-driven economic espionage or competitor-driven industrial espionage, and criminal activities including, but not limited to, cyberattacks and breaches against cloud services and hosted onpremise software, whether managed by us or our customers, partners, or other third parties
- Disruptions to back-up, disaster recovery, or business continuity management processes
- Disruptions due to exposure of our network systems to cybersecurity attacks via defects and vulnerabilities in the IT systems of our customers, or in the systems of third parties that facilitate our business activities such as cloud service providers, including those that are beyond SAP's cybersecurity infrastructure and protocols
- Failure to securely and successfully deliver cloud services by any cloud service provider could have a negative impact on customer trust in cloud solutions
- Cybersecurity threats for SAP and customers due to delayed or insufficient responses to identified cybersecurity issues attributable to complexity, interdependencies or other factors
- Challenges in effectively synchronizing cybersecurity processes across our various lines of business in a heterogeneous environment
- Insufficient or ineffective asset management potentially endangering secure operations
- Customer systems or systems operated by SAP being compromised by vulnerabilities due to threat actor exploitation
- Operational disruptions due to an increasing number of destructive malware, ransomware, or other cybersecurity attacks
- Breach of cybersecurity measures due to, for example but not limited to, employee error or wrongdoing, system vulnerabilities, malfunctions, or attempts of third parties to fraudulently induce employees, users, partners, or customers to gain access to our systems, data, or customers' data
- Failure to maintain a sufficient complement of personnel with sufficient levels of knowledge, experience, and training in cybersecurity matters necessary to support SAP's evolving cybersecurity needs and commensurate with the increasingly complex and sophisticated threat landscape
- Increased challenges due to an expanding and morphing cyberattack surface attributable to interconnected technologies such as Internet of Things (IoT) accompanied by an elevation of entry and endpoints

- Expansion of cybersecurity attack surface due to increased connectivity of operational data
- Material recovery costs as well as significant contractual and legal claims by customers, partners, authorities (including state, federal, and non-U.S.), and third-party service providers which could expose us to significant expense and liability and/or result in the issuance of orders, judgments, or consent decrees that could require us to modify our business practices
- Material costs to attempt to detect, prevent, and mitigate any successful attacks, including but not limited to the costs of thirdparty legal and cybersecurity experts and consultants, insurance costs, additional personnel and technologies, organizational changes, and incentives to customers and partners to compensate for any losses and/or retain their business
- Increasing sophistication, proliferation, and escalation in frequency, severity, and impact of cybersecurity attacks
- Inability to discover a cybersecurity breach or a loss of information either fully, in a timely manner, for a significant amount of time after the breach, or at all
- Inability to anticipate attacks or implement sufficient mitigating measures
- Insufficient investment, coordination, or resources to achieve our objective of ensuring over time that our cybersecurity infrastructure meets or exceeds evolving industry standards, and defending against the ever-evolving and emerging threat landscape
- Material costs and time associated with enhancing our cybersecurity infrastructure, which may impact the ongoing pace of development and delivery of our products and services, and our financial performance
- Failure to integrate SAP's cybersecurity infrastructure and protocols with other network systems obtained through acquisition, including addressing cybersecurity defects and vulnerabilities in acquired systems
- Failure to maintain SAP's cybersecurity infrastructure and protocols in connection with the divestiture of businesses and network systems from SAP
- Inaccurate or incomplete third-party or SAP audit results, certifications, or representations concerning the adequacy of our cybersecurity infrastructure and protocols
- Customer concerns and loss of confidence in the current or future security and reliability of our products and services, including cloud solutions, and the resulting termination of key contracts by customers and partners

Any one or more of these events could have a material adverse effect on our business, financial position, profit, and cash flows.

Technology and Products: 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
- Software products and services from acquired companies might not fully comply with SAP quality standards
- 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 might contain defects or might 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 of algorithms to correctly adapt to evolving circumstances may lead to adverse decision-making processes in the context of artificial intelligence related technologies
- 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.

### Strategic Risks

Market Share and Profit: 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, as well as for us to attract new customers. Additionally, we need to bring new solutions based on the SAP HANA business data platform, new technologies, as well as SAP Cloud Platform to the market in line with demands and ahead of our competitors. In particular, innovative applications supporting the Intelligent Enterprise such as SAP S/4HANA, SAP C/4HANA, or newer technologies such as Internet of Things, machine learning, robotic process automation (RPA), which automates rule-based, repetitive tasks, digital assistants (including voice recognition and interaction), and blockchain.

Factoring in the aforementioned, this could lead to risks in the following areas, among others:

- Inability to successfully engage with on-premise customers on their cloud transformation journey with fully suitable solutions and transformation services
- Inability to successfully execute our strategy for integrating hyperscalers
- 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, as well as failures during the execution of our intelligent enterprise strategy in the context of our portfolio for solutions and services 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 they might consider cloud offerings from our competitors.
- Existing customers might cancel or not renew their contracts (such as maintenance or cloud subscriptions) 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 growthrelated 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 and hyperscalers
- Inability to achieve the planned margin increase in time as planned

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

# Mergers and Acquisitions: 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 doing so 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 the 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 information or assumptions during the due diligence process for the acquisition (including information or assumptions related to the business environment and/or business and licensing models)
- Failure to integrate acquired technologies or solutions successfully and profitably into SAP's solution portfolio and strategy
- Failure to successfully integrate acquired entities, operations, cultures, or languages, all within the constraints of applicable local laws
- Unfulfilled needs of the acquired company's customers or partners
- Material unidentified liabilities of acquired companies (including legal, tax, IP)
- Failure in implementing, restoring, or maintaining internal controls, disclosure controls and 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 or successfully integrate the acquired company's research and development (R&D), sales, marketing activities, and security and cybersecurity protocols
- Debt incurrence or significant unexpected cash expenditures
- Non-compliance with existing SAP standards including applicable product standards such as our open source product standards

- Impairment of goodwill and other intangible assets acquired in business combinations
- Non-compliance of the acquired company with regulatory requirements, for example accounting standards, export control laws, and trade sanctions, for which SAP with and by the acquisition assumes responsibility and liability, including potential fines and the obligation to remedy the non-compliance

Any one or more of these events could have an adverse effect on our business, financial position, profit, and cash flows.

Innovation: 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 on 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 increasing 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:

- Inability to bring new business models, solutions, solution enhancements, intelligent technologies, integrations and interfaces, and/or services to market before our competitors or at equally favorable terms
- Inability to develop and sell new cloud products spanning various organizations on time and in line with market demands due to complexity in heterogeneous technical environments
- Inability 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, SAP C/4HANA, and SAP Cloud Platform) to support the intelligent enterprise strategy
- 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
- Lower level of adoption of our new solutions, technologies, business models, and flexible consumption models, or no adoption at all
- 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 competing solutions in the market, or our strategy might not match customers' expectations, specifically in the context of expanding the product portfolio into additional markets
- 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.

# ITEM 4. INFORMATION ABOUT SAP

Our legal corporate name is SAP SE. SAP SE is translated in English to SAP European Company (Societas Europaea, or "SE"). SAP SE is organized in the Federal Republic of Germany under German and European law, see "Item 10. Additional Information," Where the context requires in the discussion below, SAP SE also refers to our predecessor or previous legal forms and names, as the case may be, i.e. Systemanalyse und Programmentwicklung GbR (1972-1976), SAP Systeme, Anwendungen, Produkte in der Datenverarbeitung GmbH (1976-1988), "SAP Aktiengesellschaft Systeme, Anwendungen, Produkte in der Datenverarbeitung" (1988 – 2005) and "SAP AG" (2005 – 2014). Our principal executive offices, headquarters and registered office are located at Dietmar-Hopp-Allee 16, 69190 Walldorf, Germany. Our telephone number is +49-6227-7-47474.

For (i) a description of our principal capital expenditures and divestitures and the amount invested (including interests in other companies) since January 1, 2019 until the date of this report and (ii) information concerning our principal capital expenditures and divestitures currently in progress, including the distribution of these investments geographically and the method of financing, see "Item 4. Information About SAP – Description of Property – Capital Expenditures."

The following table sets forth our most significant subsidiaries based on total revenues of SAP group in 2019. All of these subsidiaries are wholly owned by SAP SE.

Name of Subsidiary	Country of Incorporation
Germany	
SAP Deutschland SE & Co. KG, Walldorf	Germany
Rest of EMEA	
LLC SAP CIS, Moscow	Russia
SAP (Schweiz) AG, Biel	Switzerland
SAP (UK) Limited, Feltham	United Kingdom
SAP España – Sistemas, Aplicaciones y Productos en la Informática, S.A., Madrid	Spain
SAP France, Levallois Perret	France
SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., Vimercate	Italy
SAP Nederland B.V., 's-Hertogenbosch	The Netherlands
United States	
Ariba, Inc., Palo Alto	USA
Concur Technologies, Inc., Bellevue	USA
SAP America, Inc., Newtown Square	USA
SAP Industries, Inc., Newtown Square	USA
SAP National Security Services, Inc., Newtown Square	USA
SuccessFactors, Inc., South San Francisco	USA
Qualtrics, LLC, Wilmington	USA
Rest of Americas	
SAP Brasil Ltda., São Paulo	Brazil
SAP Canada, Inc., Toronto	Canada
Japan	
SAP Japan Co., Ltd., Tokyo	Japan
Rest of APJ	
SAP Australia Pty Ltd., Sydney	Australia
SAP China Co., Ltd., Shanghai	China
SAP India Private Limited, Bangalore	India

# **Strategy and Business Model**

### **Overview of SAP**

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>1</sup> and also the leading experience management, analytics, and business intelligence company. The SAP Group has a global presence and employs more than 100,000 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 and TecDAX as well as the Dow Jones EURO STOXX 50, the Dow Jones Sustainability Index World, and the Dow Jones Sustainability Index Europe. As at December 31, 2019, SAP was the most valuable company in the DAX and the 49th most valuable company globally based on market capitalization. SAP was ranked as the most sustainable software company in the Dow Jones Sustainability Indices for the thirteenth consecutive year.

SAP SE is the parent company of the SAP Group. As at December 31, 2019, the SAP Group comprised 264 companies 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 (G.9).

### **Our Purpose**

At SAP, our purpose is to "help the world run better and improve people's lives" by empowering our customers to create a better economy, society, and environment for the world.

In line with our purpose, we are committed to supporting the United Nations Sustainable Development Goals (UN SDGs). Technology-driven innovation underpins how SAP, together with our customers and our partner ecosystem, can execute initiatives across all 17 of the UN SDGs. Our goal is to lead the evolution of technology while also helping ensure that the focus remains on taking responsibility for its outcomes and societal effects. Examples of how we are doing this include the focus of social investments on building digital skills and our guiding principles for artificial intelligence and governance.

### Our Strategy

SAP's strategy is to be the Experience Company powered by the Intelligent Enterprise. We believe every digital interaction is an opportunity for a company to positively influence a customer. Through these interactions, companies can measure "experiences" – such as customer satisfaction, employee engagement, partner collaboration, and brand impact. These interactions are also opportunities for companies to understand how end users and customers perceive a vendor or a product. We want to help every SAP customer thrive in today's "experience economy" by equipping them with the technologies to become intelligent enterprises.

Our vision for the intelligent enterprise, an event-driven, realtime business, focuses on three key objectives:

- Create a new end-to-end customer experience through a
  platform for Experience Management that allows businesses to
  collect, understand, and act on feedback across their customers,
  employees, products, and brands in real time. In particular, we
  enable companies to enhance feedback with analytics, so they
  not only can understand what is being said, but also why.
- Achieve a step change in productivity through the next level of automation in business processes powered by artificial intelligence/machine learning (AI/ML) embedded in every part of the business process (across financials, supply chain, manufacturing, procurement, travel, and human resources). Al is defined as algorithms that learn from data without being explicitly programmed, thus empowering enterprises to scale by automating business processes. The key to doing so is improving the cycle time of business processes and injecting speed and increasing quality wherever possible.
- Help companies engage their workforces by delivering total workforce engagement across full-time and contingent labor.

At SAP, our commitment to our customers is to help them meet today's challenges and prepare for anticipated challenges of the future. SAP aims to deliver on these objectives by leveraging the power of data in SAP software with technologies such as AI/ML to build powerful intelligent applications.

# Becoming the "Experience Company powered by the Intelligent Enterprise"

Our software, technologies, and services address the three core elements of the intelligent enterprise for the 25 industries and the 12 lines of business (LoBs) we serve:

- An intelligent suite of LoB applications that includes enterprise resource planning (ERP) and digital supply chain management, as well as solutions for customer experience, intelligent spend management, and human experience management. The intelligent suite is integrated and differentiated through industryspecific business processes for end-to-end scenarios.
- A business technology platform to help customers manage data orchestration across their entire application footprint. This includes real-time visibility into distributed data silos using data management solutions and an open cloud platform as a business platform for integration and business process innovation.
- An Experience Management (XM) platform, bringing together experience data (X-data) and operational data (O-data) to help organizations manage four core experiences – customer, employee, product, and brand. This includes using API-based integration between XM and the intelligent suite to connect Xdata with relevant O-data.

For more information about the products and solutions offered as part of our strategy framework, see the *Products, Research & Development, and Services* section.

Our people are critical to delivering our strategy, as they are key in delivering innovations to help our customers transform. For more information, see the *Employees* section.

<sup>&</sup>lt;sup>1</sup> Enterprise application software is computer software specifically developed to support and automate business processes

<sup>&</sup>lt;sup>2</sup> An "intelligent enterprise" is an event-driven, real-time business powered by technology that includes machine learning, blockchain, the Internet of Things, and analytics capabilities to help scale innovation.

### **Acquisitions**

We will continue to focus on organic investments in technology and innovations that ensure sustainable growth of our solution portfolio to drive our short-term, mid-term, and long-term ambitions. Additionally, we may make targeted acquisitions to complement our solution offerings and improve coverage in key strategic markets.

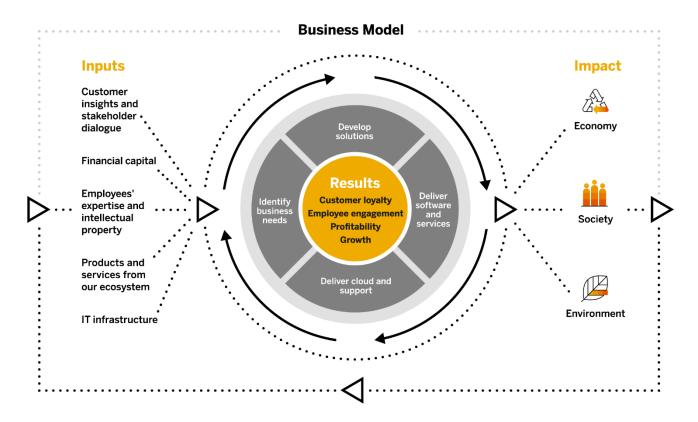
In January 2019, we acquired **Qualtrics International, Inc.**, a leader in the Experience Management (XM) software category that enables organizations to thrive in today's economy. The acquisition closed on January 23, 2019. Together, SAP and Qualtrics are working to accelerate the new XM category by combining experience data and operational data to power the experience economy. For more information about the Qualtrics segment, see the Notes to the Consolidated Financial Statements, *Note (C.1)*.

For more information about the acquisition of Qualtrics International Inc., see the Notes to the Consolidated Financial Statements, *Note (D.1)*.

### **Sapphire Ventures**

In addition to our investments in organic growth and acquisitions, SAP also supports entrepreneurs that aspire to build industry-leading businesses, through venture capital funds managed by Sapphire Ventures. Sapphire Ventures manages over US\$3.5 billion and has invested in more than 160 companies. These include growth-stage technology companies and early-stage venture capital funds. 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. In addition to our venture investments through Sapphire Ventures, SAP also has the **SAP.iO Fund**, managed by Sapphire Ventures, that focuses on strategic early-stage investments in enterprise software startups. As a part of the SAP.iO Fund, SAP has also committed to invest up to 40% of the investable capital in underrepresented groups in enterprise software to foster diversity and inclusion, such as startups founded or led by female entrepreneurs.

### **SAP's Impact**



We innovate software and technology solutions that help empower our customers to become intelligent enterprises. For us, delivering an intelligent enterprise and helping our customers thrive in the experience economy are essential for a better, more productive world. By helping unlock the potential of innovation, we support businesses and governments with having a positive impact on the economies, societies, and environments in which they exist. In this way, we aim to fulfill our purpose of helping the world run better and improving people's lives.

### Our Business Model

We create value by identifying the business needs of our customers, then developing and delivering software, services, and support that address these business needs. Through close collaboration with our customers and partners, we aim to ensure that our software creates value for our customers. By obtaining customer feedback, we strive to continuously improve our solutions, identify further business needs, and deliver enhanced value to our customers.

### Results

By developing software, providing our software and services to our customers, and engaging them in feedback, we generate results for SAP such as growth, profitability, employee engagement, and customer loyalty.

### Inputs

This process does not happen in a vacuum. It is enabled by internal and external inputs, most importantly customer insights and broader stakeholder dialogue, financial capital, employees'

expertise, and intellectual property, products and services from our partner ecosystem, as well as the IT infrastructure we rely on.

### Impact

Our solutions enable impact at our customers and – through them – in the world. The following are some examples of our impact in various areas.

### **Economy**

SAP software supports the UN SDGs 8 (Decent Work and Economic Growth); 9 (Industry, Innovation, and Infrastructure); 10 (Reduced Inequalities); and 12 (Responsible Consumption and Production) by helping companies provide jobs and strengthening industries and infrastructure. For example, SAP software helps:

- Companies work better to bring economic prosperity and fairly paid jobs to people around the world.
- Organizations optimize resource utilization, aspiring for a world with zero waste.

### Society

SAP software supports the UN SDGs 1 (No Poverty); 2 (Zero Hunger); 3 (Good Health and Well-Being); 4 (Quality Education); 5 (Gender Equality); 7 (Affordable and Clean Energy); 11 (Sustainable Cities and Communities); and 16 (Peace, Justice, and Strong Institutions) by helping create a peaceful and just society through better healthcare, education, and access to technology. For example:

- We are also deeply committed to empowering the world's youth, working adults, differently-abled people, and the unemployed with the right skills to thrive in the digital economy.
- Cities are facing growing populations and aging infrastructures.
   SAP solutions for the Internet of Things can help manage and monitor resources so that cities can run more sustainably and help citizens enjoy more enjoyable, safer lives.

### **Environment**

SAP software supports the UN SDGs 6 (Clean Water and Sanitation); 13 (Climate Action); 14 (Life Below Water); and 15 (Life on Land) and helps protect the environment by addressing the need for water, clean energy, and responsible development. For example:

- We are all affected by climate change. SAP technology is helping our customers increase their overall resource productivity and transform their businesses to reduce carbon outputs.
- With the world population growing steadily, humanity will need to provide water, food, and shelter to billions of people in the coming years. SAP solutions help our customers reduce water

waste and support sustainable management of water and sanitation for all.

Furthermore, we know there is power in collaboration and we engage in a wide range of partnerships to address SDG 17 (Partnerships for the Goals).

### Trade-Offs

At the same time, we are aware of potential negative impacts of our business activities and strive to mitigate these. For example:

- An acceleration of the digital divide could decouple societal groups from entire segments of the economy, impacting employment potential. SAP focuses our social investment activities on providing digital skills to underprivileged people.
- We expect increasing energy consumption due to our own growth and increasing digitization globally. We offer a green cloud to help reduce CO₂ footprint. For more information, see the Energy and Emissions section.

### **Measuring Our Success**

We use the following financial and non-financial objectives to steer our company:

- Growth
- Profitability
- Customer loyalty
- Employee engagement

The table below provides an overview of the specific key performance indicators (KPIs) used to measure performance within these objectives and compares this performance with our goals. In addition, we are committed to become carbon neutral in 2025 and therefore regularly report and analyze the reduction in our carbon footprint.<sup>3</sup>

### **Outlook and Results for 2019**

Strategic Objective	KPI	2019 Outlook* (non-IFRS, at constant currencies)	2019 Results (non-IFRS, at constant currencies)
	Cloud revenue	€6.7 billion to €7.0 billion	€6.77 billion
Growth	Cloud and software revenue	€22.4 billion to €22.7 billion	€22.49 billion
	Total revenue	Strong increase, at a rate lower than operating profit	€26.91 billion
Profitability	Operating profit	€7.85 billion to €8.05 billion	€7.95 billion
Customer Loyalty	Customer Net Promoter Score	+1	-6
Employee Engagement	Employee Engagement Index	84% to 86%	83%
Carbon Impact	Net greenhouse gas emissions	285 kt	300 kt

<sup>\*</sup> The outlook was communicated in January 2019 and financial targets were raised in April. The 2019 outlook numbers above reflect the raised outlook from April 2019. Note: A reconciliation of non-IFRS results to IFRS equivalent is available in the *Performance Management System* section.

 $<sup>^{3}</sup>$  Carbon emissions are part of the short-term incentive in Executive Board compensation as of fiscal year 2020.

### **Outlook for 2020**

Strategic Objective	КРІ	<b>2019 Results</b> (non-IFRS)	2020 Outlook (non-IFRS, at constant currencies)
	Cloud revenue	€7.01 billion	€8.7 billion to €9.0 billion
Growth	Cloud and software revenue	€23.09 billion	€24.7 billion to €25.1 billion
	Total revenue	€27.63 billion	€29.2 billion to €29.7 billion
Profitability	Operating profit	€8.21 billion	€8.9 billion to €9.3 billion
Customer Loyalty	Customer Net Promoter Score	-6.0	Increase by three to five points
Employee Engagement	Employee Engagement Index	83%	84% to 86%
Carbon Impact	Net greenhouse gas emissions	300 kt	238 kt

Note: A reconciliation of non-IFRS results to IFRS equivalent is available in the Performance Management System section.

### **Ambitions for 2023**

Strategic Objective	KPI	2023 Ambition (non-IFRS)
Growth	Cloud revenue	More than triple compared to 2018
Growth	Total revenue	More than €35 billion
Profitability	Operating margin	Increase the non-IFRS operating margin by one percentage point per year on average, representing a total expansion of approximately 500 basis points compared to 2018
Customer Loyalty	Customer Net Promoter Score	Steadily increase
Employee Engagement	Employee Engagement Index	84% to 86%
Carbon Impact	Net greenhouse gas emissions	95 kt, with the goal of becoming carbon neutral by 2025

Note: A reconciliation of non-IFRS results to IFRS equivalent is available in the Performance Management System section.

# Seasonality

Our business has historically experienced the highest revenue in the fourth quarter of each year, due primarily to year-end capital purchases by customers. Such factors have resulted in 2019, 2018, and 2017 first quarter revenue being lower than revenue in the prior year's fourth quarter. We believe that this trend will continue in the near future and that our total revenue will continue to peak in the fourth quarter of each year and decline from that level in the first quarter of the following year. Unlike our on-premise software revenues, our on-premise support revenues and cloud revenues are less subject to seasonality.

# **Products, Research & Development, and Services**

### The Intelligent Enterprise Framework

The Intelligent Enterprise Framework illustrates a high-level view of our product portfolio.



# **Bringing Experience Management to the Intelligent Enterprise**

### **Product Innovation Strategy**

SAP invests in the following three types of innovation:

- Continuous innovation involves incremental improvements to existing offerings.
- Adjacent innovation describes enhancements to the existing portfolio using new technologies or applying existing knowledge to new markets to gain new customers.
- Transformative innovation occurs as a result of new trends, technologies, and business models.

### Experience

Experience Management (XM) refers both to the discipline of seeking out and closing the gaps found in the four core experiences of business – customer, product, employee, and brand – as well as technology. **Qualtrics XM Platform** represents the technology that came to SAP with the acquisition of Qualtrics International, Inc., in 2019.

Qualtrics XM Platform includes the following:

- Qualtrics CoreXM provides a foundation for XM and aims to help analyze experience data (X-data).
- Qualtrics CustomerXM brings new capabilities to support specific use cases and help process customer feedback.
- Qualtrics EmployeeXM delivers new capabilities to gather employee feedback and propose actions for human resources (HR) to help improve the employee experience.
- Qualtrics ProductXM identifies consumers' favorite products based on feedback from users.
- Qualtrics BrandXM aims to make visible consumer sentiment towards a brand.

### Intelligence

The Business Technology Platform was introduced in 2019. It provides solutions across four key technology areas: database and data management (SAP HANA); analytics (SAP Analytics Cloud); application development and integration (SAP Cloud Platform); and

intelligent technologies (Internet of Things, machine learning, and blockchain) on an open cloud platform, running in SAP data centers and on selected hyperscalers. The platform's business-centric technologies are designed to enable integration and innovation across the entire intelligent suite.

### **Database and Data Management**

### SAP HANA

The innovative architecture in SAP HANA allows both transactional processing for data capture and retrieval, and analytical processing for business intelligence and reporting. It enables businesses to process and analyze live data and make business decisions based on the most up-to-date information. SAP HANA is available both on premise and as a service in the cloud with SAP Cloud Platform across multiple cloud environments. In 2019, we released the latest SAP HANA innovations including enhanced capabilities in our data anonymization functionality and hyperconverged infrastructure (HCI) certification. SAP HANA is also the first major database optimized for Intel Optane DC persistent memory. As part of SAP's own digital transformation, SAP completed the move of SAP SuccessFactors solutions to SAP HANA in 2019.

### **Enterprise Information Management**

SAP solutions for enterprise information management (EIM) provide capabilities to understand, integrate, cleanse, manage, associate, and archive data. This includes the on-premise solution SAP Data Hub and the cloud service SAP Data Intelligence, which have been designed to help businesses connect their siloed data assets and manage the discovery, refinement, governance, and orchestration of all data across a distributed data landscape. The data landscape can include SAP software systems (such as SAP S/4HANA, SAP C/4HANA, and SAP BW/4HANA) as well as third-party systems. SAP Data Intelligence also includes machine learning (ML) services and tooling.

### **Analytics**

Business analytics tools from SAP help customers get insights to enable them to adapt their businesses in real time.

### **SAP Analytics Cloud**

SAP Analytics Cloud is a cloud analytics solution running on SAP HANA that brings together the domains of business intelligence, predictive capabilities, and enterprise planning. Customers can discover, analyze, plan, and predict in one solution and make decisions. It provides a single user experience across all devices to help customers make end-to-end business decisions.

### SAP BusinessObjects Business Intelligence

SAP BusinessObjects Business Intelligence (BI) suite is a set of flexible and scalable self-service BI tools, designed to give customers discovery and insights in real time.

### SAP Data Warehouse Cloud

Released in 2019, SAP Data Warehouse Cloud is a cloud data warehouse solution designed for business and IT users with capabilities for data integration, database, data warehousing, and analytics. It is an open solution built on SAP HANA.

### SAP BW/4HANA

SAP BW/4HANA is our on-premise data warehouse solution built entirely on SAP HANA. It includes an analytics layer that processes data directly in-memory on the database, instead of at the application layer, as is the case with traditional analytical engines.

### **Application Development and Integration**

Our open Business Technology Platform helps customers extend and integrate SAP applications with third-party solutions and build new business applications with intelligent capabilities at scale.

### **SAP Cloud Platform**

SAP Cloud Platform provides an integration and extension platform that allows customers to build solutions as cloud services, with intuitive tools and support to address industry and line-of-business (LoB) processes.

### **Intelligent Technologies**

SAP uses the term intelligent technologies to describe tools and technology designed to turn intelligence into business outcomes such as ML, Al, Internet of Things (IoT), and blockchain. Intelligent technologies are embedded within our operations suite of applications and applied to processes that integrate both SAP and third-party data and applications.

### SAP Leonardo Internet of Things

The SAP Leonardo IoT solution provides industry-specific business services and capabilities, designed to embed device and telemetry data into SAP applications. It also offers prepackaged scenarios in the SAP Field Service Management solution in the SAP C/4HANA suite, business scenario content templates, and interoperability with hyperscalers, such as Amazon Web Services IoT Core and Microsoft Azure IoT Hub.

### SAP Leonardo Artificial Intelligence

The SAP Leonardo Artificial Intelligence (AI) functionality has already been integrated in the SAP portfolio, providing intelligent capabilities in SAP S/4HANA, SAP C/4HANA, SAP Concur, SAP Fieldglass, and SAP SuccessFactors solutions, among others.

### SAP Leonardo Blockchain

SAP Leonardo Blockchain capabilities are designed to enable open business collaboration across company boundaries in

decentralized networks. These blockchain technologies are integrated into SAP Cloud Platform.

### Operations

Integrated with SAP S/4HANA and built on an open cloud platform to enable integration across heterogeneous environments, our operations offerings can connect to third-party applications and data. Following the acquisition of Qualtrics in 2019, we added Experience Management (XM) capabilities to our operations solutions.

### Customer

### SAP C/4HANA

SAP C/4HANA is our customer experience suite. All five cloud areas – commerce, marketing, service, sales, and customer data – have been recognized by industry analysts as leaders in their respective categories.

XM capabilities from Qualtrics have been integrated across the suite, specifically within our commerce, marketing, sales, and service offerings.

### SAP S/4HANA

SAP S/4HANA is our next-generation Intelligent ERP suite. Running on SAP HANA, SAP S/4HANA includes intelligent technologies and integrated business processes with real-time analytics to support rapid decision-making. Approximately 13,800 customers across 25 industries have chosen SAP S/4HANA. This represents a 24% increase year over year, up from 8,500 in 2017 and 11,100 in 2018. The suite provides software capabilities for human resources, sales, service, procurement, manufacturing, asset management, as well as research and development. In Q4/2019, SAP updated the definition of SAP S/4HANA to more closely reflect categories commonly covered by ERP. These categories include elements of digital supply chain management, finance/controlling, and risk management. SAP S/4HANA is built with an open architecture to connect to the entire SAP portfolio and beyond.

### Flexible Deployment Options

SAP offers a choice of SAP S/4HANA deployments – software as a service (SaaS), on premise, in a private cloud, or as a hybrid deployment. SAP S/4HANA Cloud offers the advantages of SaaS, such as scalability and quarterly innovation updates, whereas SAP S/4HANA on premise delivers updates on an annual cycle.

In 2019, we also announced a go-to-market partnership with Microsoft called "Embrace" to accelerate customer adoption of SAP S/4HANA and SAP Cloud Platform on Microsoft Azure.

### Supply Chain

The SAP Digital Supply Chain portfolio offers an integrated suite of solutions to help plan, design, manufacture, deliver, and operate products.

### Integrated Business Planning

SAP Integrated Business Planning for Supply Chain is a cloudbased solution powered by SAP HANA and designed to deliver realtime supply chain planning capabilities for sales and operations, demand, response and supply planning, and inventory optimization.

### Manufacturing

SAP Intelligent Asset Management solutions aim to help define, plan, and monitor a service and maintenance strategy for physical products and assets along the manufacturing lifecycle.

### **Human Resources (HR)**

### SAP SuccessFactors

SAP SuccessFactors solutions aim to increase the value of a workforce by developing, managing, engaging, and empowering people. In 2019, SAP changed the name of SAP SuccessFactors HCM Suite to SAP SuccessFactors Human Experience Management (HXM) Suite, as XM functionality from Qualtrics has been integrated into the software. Further, HXM solutions from SAP provide offerings for core HR and payroll, talent management, employee experience, people analytics, and workforce planning.

### **Procurement**

Our Intelligent Spend Management program brings together SAP Ariba, SAP Concur, and SAP Fieldglass solutions. In 2019, we strengthened integration between these solutions and SAP S/4HANA to help customers manage the three primary categories of supplier spending: procurement of indirect and direct goods; travel and expense; and external workforce management.

### SAP Ariba

SAP Ariba solutions offer an online business-to-business marketplace. In 2019, we announced partnerships with Barclaycard Commercial Payments, American Express, and Standard Chartered Bank, establishing new payment and financial supply chain solutions on Ariba Network.

### SAP Fieldglass

SAP Fieldglass solutions are cloud-based applications for contingent workforce management and services procurement.

### **SAP Concur**

SAP Concur solutions aim to deliver a connected spend management system that encompasses travel, expense, invoice, compliance, and risk.

### SAP Digital Business Services

In addition to software and technology, SAP provides an entire portfolio of services and support offerings designed to help customers maximize the value of their SAP solutions in on-premise, cloud, and hybrid environments. In 2019, we continued a process that began in 2017 to simplify the SAP services and support portfolio and expand our range of intelligent tools to underpin services and support offerings for the intelligent enterprise, including XM services. This simplification established three portfolio categories to address customers' needs for as long as they use SAP software – premium success, project success, and continuous success.

### **Premium Success**

Our premium success services support large-scale transformation initiatives through a single, strategic, and customized on-site engagement. Our team of SAP experts help customers design, deploy, adopt, and operate SAP solutions on premise, hybrid, or in the cloud. The offerings differ based on size of customer and intensity of engagement.

### **Project Success**

Our project success services support the adoption of SAP products and technologies. These include services to help deliver a digital business strategy, preconfigured content for multiple industries or lines of business, best practices, methodologies, and tools. Further, these offerings also support the use of emerging

technologies and the implementation of or transition to SAP S/4HANA.

### **Continuous Success**

Our continuous success services support our cloud solutions and on-premise software. We offer services to provide proactive, predictive, and preventive support across hybrid landscapes to help customers move to the cloud and make SAP S/4HANA their Intelligent ERP of choice as well as bundled customer success activities to accelerate cloud adoption.

### Intelligent Tools

We also provide intelligent tools to help guide and deliver application management and administrative support for our service offerings.

### **Ecosystem**

### **Extending Our Reach Through a Broad Ecosystem**

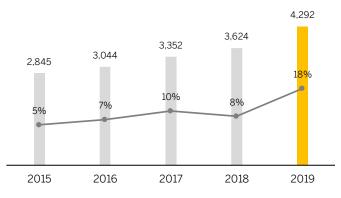
SAP's ecosystem consists of more than 20,000 partners worldwide that build, sell, service, and run SAP solutions and technology.

Our partner ecosystem drives the bulk of SAP's presence among small and midsize enterprise (SME) customers. In 2019, SAP announced a new initiative, **Next-Generation Partnering**, aimed to make partnerships simpler and more profitable for the ecosystem. Next-Generation Partnering emphasizes partner innovation and monetization through **SAP App Center**, where customers can discover, try, buy, manage, and deploy trusted partner applications that extend their existing SAP technology and solutions.

### Investment in R&D

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

€ millions | change since previous year



In 2019, our IFRS R&D ratio, reflecting R&D expenses as a portion of total operating expenses, decreased by 0.5 percentage points (pp) to 18.6% (2018: 19.1%). Our non-IFRS R&D ratio increased by 0.4pp to 19.8% year over year (2018: 19.4%). At the end of 2019, our total full-time equivalent (FTE) headcount in development work was 27,634 (2018: 27,060). Measured in FTEs, our R&D headcount was 28% of total headcount (2018: 28%).

Total R&D expense not only includes our own personnel costs but also the external costs 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, 2019, SAP held a total of more than 10,270 validated patents worldwide. Of these, 924 were granted and validated in 2019.

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, Data Protection, and Privacy

# 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 when 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 chief security officer and our data protection officer (DPO) monitor the compliance of all activities in these areas. In 2019, the chief security officer and the DPO both reported to SAP's chief financial officer (CFO). Starting in 2020, the chief security officer will report directly to our Co-CEO Christian Klein.

To meet and ensure consistent data protection compliance and security, SAP has implemented a formal governance model in both areas that assigns clear responsibilities across the SAP Group. Relevant security topics are discussed during steering committee meetings attended by individual or multiple board members numerous times each year. Our chief security officer also reports regularly to the Audit Committee of the Supervisory Board of SAP.

### **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 exposed endpoints vulnerable to attack. Moreover, the sheer number and sophistication of attacks facing businesses are at an all-time high and are increasing. We are seeing the "commercialization of hacking," while at the same time, 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.

Several of our security measures extend across the entire 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 operate on a security strategy that is based on three cornerstones concentrating on the security of our applications, operations, and organization:

# Secure Applications: Championing Application Security

Businesses use SAP applications to process mission-critical data, which can be highly attractive to cyberattackers. Our secure

applications approach focuses on security processes and controls intended to ensure the secure design and architecture of our applications. These processes are vital to avoid or detect and mitigate vulnerabilities at the earliest possible time and 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 properties and capabilities into our applications, following a risk-based approach. We strive to align our secure software development lifecycle to the recommendations of the ISO/IEC 27034-1 standard for application security. Furthermore, for all solutions included in SAP's innovation cycle, our process framework for developing standard software as well as our controls for developing secure software are certified to comply with the ISO 27001:2013 and ISO 9001 standards.

# Secure Operations Strategy: Running Secure Operations

Our secure operations strategy focuses on the security principles of "confidentiality, integrity, and availability" to support the overall protection of our business and our customers' businesses. To help us achieve our mission to become the Experience Company powered by the Intelligent Enterprise, we seek to mitigate cybersecurity challenges through a comprehensive IT operations security framework. This includes system and data access, system security configuration, and security patch management, as well as proactive security event management, threat hunting, and incident handling.

Our secure operations strategy 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 that are performed by third parties as well as SAP employees.

SAP's security compliance strategy is also focused on integrating the increasingly complex cybersecurity and data privacy-related laws and regulations around the world. SAP has established an internal control framework for DevOps and is undergoing many external certification audits, such as System and Organization Control (SOC) and International Organization for Standardization audits (ISO 9001, 27001, 27017, 27018, and 22301). This is important for us to build the necessary trust level for SAP's customers and regularly increase the security and compliance level through the organization.

# Secure Company: 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 are an information security management system and a security governance model that bring together different aspects of security. These include the following three main areas:

 Security culture: Training, assessments, and reporting on these efforts foster awareness and compliance with our security policy and standards

- Secure environments: Industry-standard 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: We maintain a corporate continuity
  framework aimed at having robust governance in place at all
  times and we review this framework on an annual basis to adapt
  to new or changed business needs.

In addition to these important measures, our security mechanisms, such as authentication, authorization, and encryption, serve as a first line of defense. To secure the SAP software landscape, we offer a 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 solution portfolio, also available for customers, includes identity and access management tools, a tool for detecting potential threats, an ABAP code vulnerability scanner, and solutions for governance, risk, and compliance.

Furthermore, our SAP Trust Center site provides transparency for our customers about how SAP helps to improve security, privacy, and compliance in cloud and on-premise landscapes. The site also provides secure feedback mechanisms, for example to report a potential security issue and invoke our incident or vulnerability management processes.

### Shifting Customer and Regulatory Requirements Demand an Integrated and Sophisticated Approach

The progressing transition from on premise to cloud-based business transfers additional responsibility to SAP and forms a higher sensitivity for security in our customer base, especially in light of shifting national and international regulatory requirements. As a result, we are evolving our strategy to focus even more on the following strategic commitments going forward, and we have begun taking steps to implement them. These commitments include (but are not limited to):

- Fundamentals secured: We will enhance incident, crisis, and disaster resiliency capabilities.
- Customer focused: Among other enhancements, we will further define and build a standard set of security features across products.
- Services driven: We enable security through a simple but thorough service catalog based on agile practices and increased automation.
- Cloud readiness: We will focus on cloud-centricity, both internally and externally, through secure by design agile product development across all SAP areas.
- Transparent and risk-based approach: We strive to manage and communicate SAP's current and future cyberstates based on a risk-based approach. This includes the creation of an end-to-end supplier security assessment framework mitigating third party risks.
- Talent and execution excellence: We build new skill sets and awareness among security experts, non-security experts, and non-technical professionals.

# Complying with Data Protection and Privacy Legislation

SAP respects and protects the fundamental right to data protection and privacy when processing the personal data of employees, applicants, customers, suppliers, and partners. SAP must comply with relevant laws when processing personal data. While implementing appropriate security measures, we develop and pursue our data protection and privacy strategy in accordance with our business strategy. This strategy consists of four pillars that have been implemented to help meet compliance with applicable data protection laws.

Our global data protection and privacy policy, mandatory global data protection and privacy training for employees, global data protection and privacy coordinator network, and the global data protection management system (DPMS) are designed to ensure that we comply with applicable data protection laws.

Our policy outlines a group-wide minimum standard for data-protection-compliant processing of personal data. It defines requirements for business processes that involve personal data and assigns clear responsibilities. The principles established by this policy take into account the requirements of the EU General Data Protection Regulation (GDPR). They apply generally and globally to all SAP Group affiliates. Additional data protection and privacy requirements, if applicable, are adopted on a local level as necessary. We actively monitor changes to applicable laws and regulations so that we can update our standards on an ongoing basis.

With our mandatory global data protection and privacy training established across SAP, covering all lines of businesses, we aim to drive data protection and privacy awareness of our employees.

Furthermore, we have renewed our global data protection and privacy coordinator network ("DPPC network") across all SAP entities that process personal data. This DPPC network is designed to ensure data protection and privacy compliance on local level. Additional regional data protection and privacy coordinators support the DPPC network in the assigned region to help drive compliance with local data protection and privacy laws while monitoring changes to applicable laws.

Our DPMS conforms to the targets of the globally-recognized standard for data protection management systems, BS 10012:2017. Initially implemented at our global support organization, the DPMS has been successively rolled out and is now in place in all areas critical to data protection. It covers almost all areas and countries in which SAP has operations and will be introduced in all acquired companies. It is audited and certified on a yearly basis by the British Standards Institute and this audit last took place in 2019.

We have implemented a wide range of measures intended to protect data controlled by SAP and SAP customers from unauthorized access and processing, as well as from accidental loss or destruction. Also, we are developing our products to support our customers in applying data protection requirements, including GDPR.

In 2019, SAP experienced three significant incidents in processing personal data – on our own behalf and on behalf of our customers – that were subject to GDPR or other applicable data protection laws and were reported to the competent authorities.

#### **Customers**

#### Approaching Our Customers with Empathy

We want our customers to see SAP as a company that listens and responds to their needs. We want to design and develop with their needs in mind. We want them to experience a constantly improving

To achieve this, we have implemented extensive programs to deepen our relationship with our customers to ensure we understand what works well and what can be improved in their partnership with SAP.

Measuring customer loyalty is a part of this program, and we use the Customer Net Promoter Score (Customer NPS) as one feedback mechanism to do so. This allows us to directly understand what our customers are thinking and identify key pain points for action.

Reflecting the importance of customers to SAP, it is only logical that Customer NPS is one of our main KPIs.

In 2019, 68% of customers gave us a score of 7 or higher. This means that a large majority of customers are satisfied or highly satisfied with SAP. Because the percentage of customers that rated us 9 or 10 is slightly smaller than the percentage of customers who rated us 6 or below, our Customer NPS for 2019 is -6 (2018: -5). We did not reach our target of +1 in 2019. While we have reported Customer Net Promoter Score since 2012, we revamped our program in 2018 with 2019 as the first full year of results. For 2019, SAP set a very aggressive target against a stringent metric. As we gather more insight on how the number reacts to the improvements we are making, we will continue to get better in forecasting the results. With our Experience Management (XM) innovations from Qualtrics, we have more information from our customers than ever and can react to it faster, helping us make changes that customers can see and feel in their interactions with SAP and our software.

As we continue to receive open and direct feedback from our customers, we are also incorporating XM across the company. In particular, programs such as **Customer First**, **Build Customers for Life**, and **Insights to Action** will continue to drive improvements. We expect this continuous feedback to help us achieve our goal of improving customer loyalty. Therefore, we aim to increase Customer NPS by three to five points in 2020 and to steadily increase the score through 2023 and beyond.

Starting in 2020, Customer NPS is included as a KPI in Executive Board remuneration as part of the short-term incentive component. For more information about executive compensation, see the *Compensation Report* section.

For more information about the Customer NPS, see the *Performance Management System* section.

#### **Building Programs to Facilitate Customer Feedback**

The **Build Customers for Life** program helps harmonize the customer experience in postsales with ongoing implementation projects, including customer success management, customer service management, outage management, and one customer portal.

With our global cross-Board initiative **Customer First**, efforts have been made to improve the way we work and care for our customers by supporting the organization in providing a consistent, positive, end-to-end experience.

Integrating XM across the organization, we significantly increased our capabilities to take actions from customer insights to deliver business change. We launched the Insights to Action program, a comprehensive collaboration that identified over 20 initiatives to address systemic customer feedback.

#### **Energy and Emissions**

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

SAP takes its environmental responsibilities seriously and strives to be a role model for sustainable business operations by running our own operations cleaner and greener. In addition, we aim to enable our customers to reduce their overall carbon emissions 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.

The SAP Executive Board sponsor for sustainability, including climate change, is our chief financial officer (CFO). Our chief sustainability officer and our dedicated sustainability organization coordinate our response to climate change, which includes assessing and managing climate-related risks and opportunities. 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 and risks in quarterly management reviews.

To be able to innovate and embed sustainability further, we regularly engage with various stakeholder groups such as non-governmental organizations (NGOs), non-profit organizations (NPOs), and academia. This notably includes an external sustainability advisory panel comprised of expert representatives from our customers, investors, partners, NGOs, and academia.

To enable continuous improvement and to protect the environment, we are gradually introducing an ISO 14001-certified environmental management system (EMS) at SAP sites worldwide. In 2019, our global EMS covered 55 sites in 30 countries. In 2025, SAP aims to run an ISO 14001-certified EMS at 100% of its company-owned sites. An energy management system certified by the ISO 50001 standard is integrated with the existing environmental management system at SAP's headquarters in Germany.

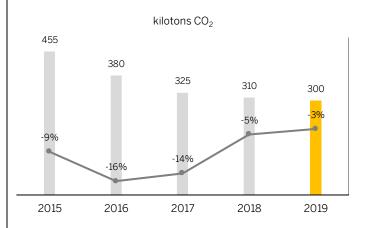
#### **Cutting Carbon Emissions**

We are committed to making our operations carbon neutral by 2025. This target includes all direct emissions from running our business as well as a selected subset of indirect emissions from supply chains and services.

Furthermore, in 2017, SAP joined the Science Based Targets initiative (SBTi) as the first German company to do so. We comply with the initiative's ambitious requirements and are committed to reducing emissions by 85% by 2050 compared to the base-year level 2016, including energy consumption of our products in use at our customers. This target reflects the level of decarbonization required to keep the global temperature increase below 1.5°C compared to pre-industrial temperatures.

A number of initiatives harness innovative technologies to help us run our operations in a way that reduces 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.

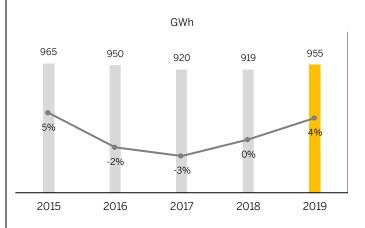
#### **Total Net Carbon Emissions**



In addition to our commitment to carbon neutrality, we have derived annual targets for our internal operational steering. Compared to 2018, our carbon emissions slightly decreased, although our number of employees increased by 5.5%. While we continued our strategy to avoid and reduce our emissions wherever possible, we did see a significant increase in business flights, due to business growth, which we only partially compensated for with carbon offsets. In 2019, our carbon emissions target of 285 kilotons (kt) was exceeded by 15 kt.

Our focus on carbon emissions has contributed to a cumulative cost avoidance of  $\[ \in \]$  298.6 million in the past three years, compared to a business-as-usual scenario based on 2007. We achieved 34% of this cost avoidance in 2019. In 2020, we plan to re-evaluate the calculation approach.

#### **Total Energy Consumption**



#### 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 emissions. Given the increasing data center capacity and an

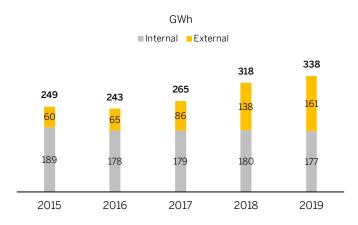
increasing energy consumption, our data centers have become a primary focus of our carbon reduction efforts. The term data center refers to both SAP-owned and external data centers (co-location and hypercale data centers).

We have introduced initiatives to drive efficiency and innovation with respect to our buildings, data center operations, and infrastructure. This allowed us to maintain an efficient power usage effectiveness (PUE) of 1.36 in our data centers in St. Leon-Rot, Germany. The PUE is a ratio that describes the efficiency of a data center, with 1.0 being the ideal. Furthermore, in 2019, SAP opened its new state-of-the-art data center in Walldorf, Germany.

#### 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 RECs with very high quality standards, which support renewable energy projects that meet robust criteria in terms of environmental integrity, stakeholder inclusivity, and reporting and verification.

#### **Total Data Center Electricity**



#### Helping Our Customers Run Greener Operations

The vast majority of our overall carbon emissions result from the use of our software. When our customers run SAP software on their hardware and on their premises, the resulting carbon emissions are about 40 times the size of our own net carbon emissions. 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, such as SAP Environment, Health, and Safety Management, enable our customers to manage their resources, such as electricity, more efficiently

The SAP HANA platform contributes to helping our customers cut their energy consumption. By combining the worlds of analytic and transactional data into one real-time, in-memory platform, it can

help to simplify system landscapes, increase their efficiency, and create leaner operations.

With the new SAP Profitability and Performance Management application powered by SAP HANA, we have integrated value chain sustainability management and carbon footprint management to support our customers on their path to increased transparency and help them combine non-financial and financial data into their reporting and steering. For example, customers can improve their real-time energy demand response for power demand management.

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, consolidate business applications, and 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 2019 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 a high-quality, internationally recognized not-for-profit ecolabel for energy. It certifies electricity from renewable energy installations that fulfill additional sustainability criteria. Through the purchase of EKOenergy-certified electricity, we also contribute to EKOenergy's Climate Fund, which finances 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 carbon 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 9.6% at the end of 2019 (2018: 7%) to 20% by the end of 2020. Our aim is that by 2025, one-third of all company cars will be more eco-friendly vehicles, such as electric or fuel cell cars.

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. Furthermore, we continously expand and enhance the charging infrastructure for our employees (2019: 750 charging stations; 2018: 550 charging stations).

#### Internal Carbon Pricing for Business Flights

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.

We only invest in carbon offset projects with Gold Standard or other high-quality standards. In 2019, our offset effort resulted in a compensation of 240 kt of emissions.

#### Investment in Carbon Credits

In 2019, we continued to realize the benefits of our investment in the Livelihoods Fund. Several years ago, we made a commitment to invest  $\mathfrak S$  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 now also invest in a second Livelihoods Fund, committing another  $\mathfrak S$  million over the next 30 years and thus increasing our commitment to sustainable initiatives. In 2019, the carbon credits we received from these funds helped us to offset our carbon emissions by 30 kt.

At the beginning of 2018, SAP pledged to plant five million trees by 2025 in collaboration with various non-governmental organizations. In 2019, we invested in 500,000 trees as part of our carbon offsetting initiatives.

#### Intellectual Property, Proprietary Rights and Licenses

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. For further details on risks related to SAP's intellectual property rights, see "Item 3. Key Information — Risk Factors — Operational Risks."

We may be dependent in the aggregate on technology that we license from third parties that is embedded into our products or that we resell to our customers. We have licensed and will continue to license numerous third-party software products that we incorporate into and/or distribute with our existing products. We endeavor to protect ourselves in the respective agreements by obtaining certain rights in case such agreements are terminated.

We are a party to patent cross-license agreements with several third parties.

We are named as a defendant or plaintiff in various legal proceedings for alleged intellectual property infringements. See *Note* (G.3) to our Consolidated Financial Statements for a more detailed discussion relating to certain of these legal proceedings.

#### **Description of Property**

Our principal office is located in Walldorf, Germany, where we own and occupy approximately 460,000 square meters of office and datacenter space including our facilities in neighboring St. Leon-Rot. We also own and lease office space in various other locations in Germany, totaling approximately 165,000 square meters. In approximately 75 countries worldwide, we occupy roughly 1,850,000 square meters. The space in most locations other than our principal office in Germany is leased. We also own certain real properties in Newtown Square, Palo Alto and Colorado Springs (United States); Bangalore (India); Sao Leopoldo (Brazil); London (UK); Ra'anana (Israel) and a few other locations in and outside of Germany.

The office and datacenter space we occupy includes approximately 380,000 square meters in the EMEA region, excluding Germany, approximately 425,000 square meters in the region North and Latin America, and approximately 420,000 square meters in the APJ Region.

The space is being utilized for various corporate functions including research and development, our data centers, customer support, sales and marketing, consulting, training, administration and messaging. Substantially all our facilities are being fully used or sublet. For a discussion on our non-current assets by geographic region see *Note (D.6)* to our Consolidated Financial Statements. Also see, "*Item 6. Directors, Senior Management and Employees*." which discusses the numbers of our employees, in FTE's, by business area and by geographic region, which may be used to approximate the productive capacity of our workspace in each region.

We believe that our facilities are in good operating condition and adequate for our present usage. We do not have any significant encumbrances on our properties. We do not believe we are subject to any environmental issues that may affect our utilization of any of our material assets. We are currently undertaking construction activities in various locations to increase our capacity for future expansion of our business. Our significant construction activities are described below, under the heading "Principal Investments and Divestitures Currently in Progress."

#### **Investments**

### Principal Investments and Divestitures Currently in Progress

In 2019, we finalized various construction projects and continued and started new construction activities in several locations. 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 12/31/2019	Estimated Completion Date
Germany	Berlin	New office building for approx. 1,000 employees	40	2	October 2022
Germany	Munich	New office building for approx. 600 employees	90	0	March 2023
Brazil	São Leopoldo	New office building for approx. 700 employees	33	2	March 2021
Bulgaria	Sofia	New office building for approx. 1,200 employees	46	1	October 2022
India	Bangalore	New office building for approx. 4,000 employees	84	0	December 2022
US	Seattle	New office building for approx. 1,850 employees	28	1	July 2020

For more information about planned investment expenditures, see the *Investment Goals* section. There were no material divestitures within the reporting period.

### Principal Investments and Divestitures for the Last Three Years

Our principal investments for property, plant, and equipment (other than from business combinations) amounted to €1,067 million in 2019 (2018: €1,302 million; 2017: €1,196 million). Principal investments in 2019 for property, plant, and equipment decreased compared to 2018. The investments relate primarily to replacement and purchase of information technology equipment and the construction and leasing of buildings and data centers. The increase from 2017 to 2018 was mainly due to replacement and purchase of IT infrastructure (data centers, etc.) and the construction of new buildings.

Our investments for intangible assets such as acquired technologies and customer relationships amounted to \$\epsilon\$1,954 million in 2019 compared to \$\epsilon\$791 million in 2018 (2017: \$\epsilon\$227 million). Our investments allocated to goodwill increased to \$\epsilon\$5,017 million in 2019 from \$\epsilon\$1,620 million in 2018 (2017: \$\epsilon\$205 million). The increase in 2019 mainly results from the Qualtrics acquisition (see Note (D.1) for additional information). The respective increase in 2018 was mainly due to the Callidus acquisition. For further details on investments related to acquisitions, see Notes (D.2) and (D.3) to our Consolidated Financial Statements.

For further information regarding the principal markets in which SAP conducts business, including a breakdown of total revenues by category of activity and geographic market for each of the last three years, see "Item 5. Operating and Financial Review and Prospects — Operating Results (IFRS)" of this report.

### ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

# ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

#### Overview

For information on our principal sources of revenue and how the different types of revenue are classified in our income statement refer to Note (A.1) to our Consolidated Financial Statements.

See "Item 4. Information about SAP — Products, Research & Development, and Services" for a more detailed description of the products and services we offer.

The following discussion is provided to enable a better understanding of our operating results for the periods covered, including:

- the factors that we believe impacted our performance in 2019;
- our outlook for 2019 compared to our 2019 actual performance (non-IFRS);
- a discussion of our operating results for 2019 compared to 2018 and for 2018 compared to 2017;
- the factors that we believe will impact our performance in 2020;
   and
- our financial targets and prospects.

The preceding overview should be read in conjunction with the more detailed discussion and analysis of our financial condition and results of operations in this Item 5, "Item 3. Key Information — Risk Factors" and "Item 18. Financial Statements."

#### **Economy and the Market**

#### Global Economic Trends

According to the European Central Bank (ECB), global economic growth decreased during the first half of 2019, marking the weakest period since the global financial crisis, but signs of stabilization started to emerge towards the end of the year. In our 2019 half-year report, we mentioned that the ECB had expected a longer phase until recovery. Escalating trade tensions and Brexit-related uncertainties, however, continued to impair economic growth during the second half of the year.

For the Europe, Middle East, and Africa (EMEA) region, the ECB reports that growth in the euro area remained weak throughout the year at 1.2%. Some initial signs of stabilization – in line with previous expectations – materialized only toward the end of the year. In central and eastern Europe, economic activity continued to be supported by solid consumer spending despite tight labor markets. The Russian economy performed better than expected in the third quarter of 2019.

In the Americas region, the ECB saw economic activity expand steadily in the United States due to a strong labor market and supportive financial conditions. The resumption of trade

negotiations between the United States and China in the last quarter of 2019 brought about a first trade deal and hopes of de-escalation, but trade tensions between the United States on the one side and the EU and Latin America on the other side remained unsolved. In Brazil, despite some improvements in early 2019 and against expectations, growth remained fragile throughout the year.

In the Asia Pacific Japan (APJ) region, the Japanese economy expanded on a steady but muted level all year, reports the ECB. Solid domestic demand especially ahead of the value-added tax increase effective October 1, 2019, posed as the main stabilizer of growth. In China, economic activity slowed gradually over the year, caused by lower-than-expected investment and the trade conflict with the United States.

#### The IT Market

At the end of 2019, technology required for digital transformation was no longer expensive and restricted to those businesses that could afford it. Instead, enterprise applications had become fundamental, says International Data Corporation (IDC), a U.S.-based market research firm, in recent publications. Enterprises were now required to continuously adapt to or drive disruptive changes in their operations, customers, and markets. They had to balance digital and physical competencies and master them at scale, creating new business models and digitally enabled products and services. <sup>3)</sup>

Furthermore, IDC describes a "platform economy" fueled by tools, capabilities, and frameworks based upon the power of information, cognitive computing, and ubiquitous access. In 2019, leading organisations shifted to platform thinking in order to evolve their business models and manage their technology architecture. At the same time, several "megaplatforms" competed to own infrastructure and developmental environments for providing infrastructure as a service (laaS).<sup>4)</sup>

The driving factors of these developments in 2019, according to IDC, were data, analytics, and machine learning. They revolutionized operations, providing major increases in productivity and efficiency and thus value. Real-time data from mobile devices, the Internet of Things (IoT), and other devices at the edge, combined with historical data, global information, artificial intelligence (AI), and machine learning, continually enabled organizations to spread intelligence from the core to the edge and maximize their business outcomes.<sup>3)</sup>

#### Sources:

<sup>1)</sup> European Central Bank, Economic Bulletin, Issue 8/2019, Publication Date: December 27, 2019

(https://www.ecb.europa.eu/pub/pdf/ecbu/eb201908.en.pdf)

<sup>2)</sup> IDC FutureScape: Worldwide IT Industry 2020 Predictions, Doc #US45599219, October 2019

 $^{3)}$  IDC FutureScape: Worldwide Digital Transformation 2020 Predictions, Doc #US45569118, October 2019

 $^{\rm 4)}$  IDC FutureScape: Worldwide Intelligent ERP 2020 Predictions, Doc US44646019, October 2019

#### Impact on SAP

Despite macroeconomic uncertainties, SAP again demonstrated resilience, enjoying sustained growth and continued market adoption. Benefitting from the ongoing digital transformation of its customers, the rich portfolio of solutions, innovative and advanced technologies as well as the freedom of choice for customers to run their business in the cloud, on-premise or in a hybrid model, resulted in a remarkable full-year performance.

### Performance Against Our Outlook for 2019 (Non-IFRS)

As in previous years, our 2019 operating profit-related goals and published outlook were based on our non-IFRS financial measures at constant currencies. For this reason, in the following section we discuss performance against our outlook only in terms of non-IFRS numbers at constant currencies 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 2019 (Non-IFRS)

In light of our first-quarter 2019 results and SAP's new initiatives to accelerate its operational excellence and value creation, we adjusted, in April 2019, our outlook for full-year non-IFRS operating profit for 2019 upward to range between €7.85 billion and €8.05 billion at constant currencies. This range represents a growth rate of 9.5% to 12.5% at constant currencies. In addition, SAP expected total revenues to increase strongly, albeit at a rate lower than operating profit (previously: slightly lower). Our projections for cloud revenue (non-IFRS, at constant currencies) and for cloud and software revenue (non-IFRS, at constant currencies) remained unchanged.

#### 2019 Actual Revenue and Profit Performance Compared to Outlook (Non-IFRS)

We hit the raised outlook for revenue and operating profit that we published in April.

#### Comparison of Outlook and Results for 2019

	Outlook for 2019 (as Reported in Integrated Report 2018)	Revised Outlook for 2019 (Q1 Quarterly Statement)	Results for 2019
Cloud revenue (non-IFRS, at constant currencies)	€6.70 billion to €7.00 billion	€6.70 billion to €7.00 billion	€6.77 billion
Cloud and software revenue (non-IFRS, at constant currencies)	€22.40 billion to €22.70 billion	€22.40 billion to €22.70 billion	€22.49 billion
Total revenue (non-IFRS, at constant currencies)	strong increase, at slightly lower rate than operating profit	strong increase, albeit at lower rate than operating profit	€26.91 billion
Operating profit (non-IFRS, at constant currencies)	€7.70 billion to €8.00 billion	€7.85 billion to €8.05 billion	€7.95 billion
Effective tax rate (IFRS)	26.5% to 27.5%		26.7%
Effective tax rate (non-IFRS)	26.0% to 27.0%		26.2%

Despite economic and diplomatic tensions, arising particularly from the trade conflict between China and the United States, and uncertainties regarding the possible outcome and effects of the Brexit negotiations, our new and existing customers in 2019 continued to show a strong willingness to invest in our solutions and services.

At constant currencies, non-IFRS cloud revenue grew from  $\$ 5.03 billion in 2018 to  $\$ 6.77 billion in 2019 and therefore ended in our guidance range of  $\$ 6.70 billion to  $\$ 7.00 billion. That represents an increase of 35% at constant currencies.

Our new cloud bookings, which are one of our measures for cloud-related sales success and for future cloud revenue, increased in 2019 to  $\mathord{\in}2.27$  billion (2018:  $\mathord{\in}1.81$  billion). This is an increase of 25% (21% on a constant currency basis). In addition to this strong growth, our cloud backlog (unbilled future revenue based on existing cloud contracts) reached  $\mathord{\in}12.4$  billion (2018:  $\mathord{\in}10.1$  billion). This is an increase of 23% (20% on a constant currency basis).

Cloud and software revenue (non-IFRS) grew 9% at constant currencies to €22.49 billion (2018: €20.66 billion), and thus ended within our guidance range for 2019. This increase was mainly driven by strong cloud revenue growth as mentioned before. Software licenses revenue decreased by 5% at constant currencies.

Our total revenue (non-IFRS) on a constant currency basis rose 9% in 2019 to €26.91 billion (2018: €24.74 billion). Total revenue (non-IFRS) therefore grew at a rate lower than operating profit (non-IFRS) as forecasted, which increased 11% at constant currencies in 2019

Operating expenses (non-IFRS) in 2019 on a constant currency basis were €18.95 billion (2018: €17.58 billion), an increase of 8%.

Our expense base in 2019 continued to be impacted by our transformation to a fast-growing cloud business. In our outlook for 2019, we continued to expect to see the benefits from efficiency-based investments, and thus an increasing cloud gross margin. The cloud gross margin for 2019 was 68%, an increase of 5.0pp on a constant currency basis year over year. Despite continued investment in our business transformation, the margin improvement was primarily driven by increasing efficiency of our cloud offerings.

All cloud gross margins on our various cloud offerings developed positively in 2019:

The cloud gross margin (non-IFRS) on our Intelligent Spend Group segment improved slightly by 0.2pp (on a constant currency basis), resulting in 78% for 2019.

The cloud gross margin (non-IFRS) on our infrastructure as a service (laaS) cloud offering continued to develop well in 2019. The corresponding gross margin improved by 16.4pp on a constant currency basis in 2019 to achieve a cloud gross margin (non-IFRS) of 29%.

Profitability in our software as a service/platform as a service (SaaS/PaaS) cloud offering was 68% at constant currencies (non-IFRS) for 2019. Despite ongoing investments in the further development and harmonization of our various software as a service/platform as a service offerings on a single platform, we were able to increase the margin by 8.5pp.

We saw efficiency improvements in both our cloud and traditional on-premise business, which drove continued operating profit expansion. Non-IFRS operating profit in 2019 was €7.95 billion on a constant currency basis (2018: €7.16 billion), reflecting an increase of 11%. As a result, we were able to surpass our excellent results from 2018, despite our continued investment in our business transformation during the reporting year. The positive development of our operating profit was largely influenced by investment decisions focused on customers and products which, among other things, resulted in an increase in our overall headcount by 3,832 fulltime equivalents (thereof 1,719 organic), primarily in research and development, services, 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 €7.95 billion was within our outlook range raised in April (€7.85 billion to €8.05 billion).

We achieved an effective tax rate (IFRS) of 26.7% and an effective tax rate (non-IFRS) of 26.2%, which is at the lower end of the range of 26.5% to 27.5% (IFRS) and 26.0% to 27.0% (non-IFRS).

#### **Operating Results (IFRS)**

This section on operating results (IFRS) discusses results only in terms of IFRS measures.

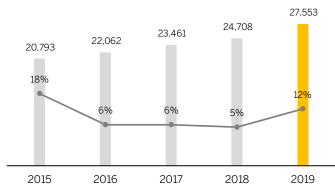
### Our 2019 Results Compared to Our 2018 Results (IFRS)

#### Revenue

#### **Total Revenue**

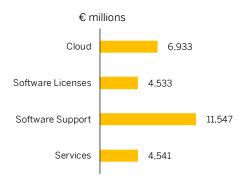
Total revenue increased from €24,708 million in 2018 to €27,553 million in 2019, representing an increase of €2,845 million, or 12%.

€ millions | change since previous



The growth in revenue resulted primarily from a €1,939 million increase in cloud revenue to €6,933 million. Cloud and software revenue represented 84% of total revenue in 2019 (2018: 83%). Service revenue increased 11% from €4,086 million in 2018 to €4,541 million in 2019, which was 16% of total revenue (2018: 17%).

#### **Revenue by Revenue Type**



For more information about our regional performance, see the *Revenue by Region* section below.

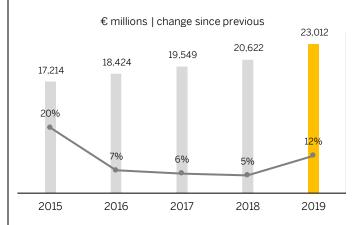
#### **Cloud and Software Revenue**

Cloud revenue 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 licenses revenue results from the fees earned from selling or licensing software to customers. Support revenue represents fees earned

from providing customers with technical support services and unspecified software upgrades, updates, and enhancements. For more information about our revenue types, see the Notes to the Consolidated Financial Statements, *Note (A.1)*.

Cloud and software revenue grew from €20,622 million in 2018 to €23,012 million in 2019, an increase of 12%.

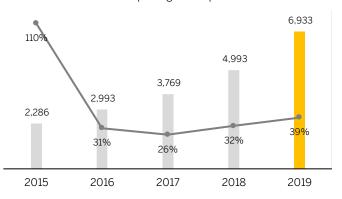
#### **Cloud and Software**



Cloud revenue increased from €4,993 million in 2018 to €6,933 million in 2019.

#### **Cloud Revenue**

€ millions | change since previous



Our software licenses revenue declined by  $\[ \le \]$ 114 million from  $\[ \le \]$ 4,647 million in 2018 to  $\[ \le \]$ 4,533 million in 2019. Our customer base continued to expand in 2019. Based on the number of contracts concluded, 13% of the orders we received for software licenses in 2019 were from new customers (2018: 15%). The total value of software licenses orders received decreased 5% year over year. The total number of contracts signed for new software licenses decreased 10% to 52,584 (2018: 58,530), with an average order value of  $\[ \le \]$ 87 thousand in 2019 (2018:  $\[ \le \]$ 82 thousand). Of all our software licenses orders received in 2019, 32% were attributable to deals worth more than  $\[ \le \]$ 5 million (2018: 29%), while 35% were attributable to deals worth less than  $\[ \le \]$ 1 million (2018: 39%).

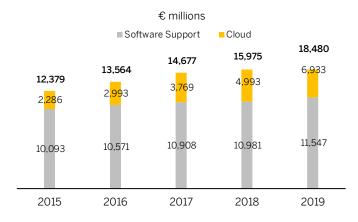
Our stable customer base, the continued demand for our software throughout 2019 and the previous years, and the continued interest in our support offerings resulted in an increase in support revenue from €10,981 million in 2018 to €11,547 million in 2019. The SAP Enterprise Support offering was the largest contributor to our

software support revenue. The €566 million, or 5%, growth in software support revenue is primarily attributable to our SAP Product Support for Large Enterprises services and our SAP Enterprise Support services.

Software licenses and software support revenue rose €452 million, or 3%, from €15,628 million in 2018 to €16,080 million in 2019.

We define more predictable revenue as the sum of our cloud revenue and our software support revenue. Compared to the previous year, our more predictable revenue increased from €15,975 million in 2018 to €18,480 million in 2019. This reflects a rise of 16%. More predictable revenue accounted for 67% of our total revenue in 2019 (2018: 65%).

#### More Predictable Revenue



#### **Services Revenue**

Services revenue combines revenue from consulting services, premium support services, and other services such as training services and messaging services. Consulting services primarily relate to the implementation of our cloud subscriptions and onpremise software products. Our premium support offering consists of high-end support services tailored to customer requirements. Messaging services are primarily the transmission of electronic text messages from one mobile phone provider to another.

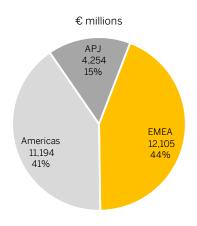
Services revenue increased €455 million, or 11%, from €4.086 million in 2018 to €4.541 million in 2019.

A solid market demand led to a 10% increase of  $\le$ 340 million in consulting revenue and premium support revenue from  $\le$ 3,356 million in 2018 to  $\le$ 3,696 million in 2019. In 2019, consulting and premium support revenue contributed 81% of the total services revenue (2018: 82%) and 13% of total revenue (2018: 14%).

Revenue from other services increased  $\[ \le 114 \]$  million, or 16%, to  $\[ \le 845 \]$  million in 2019 (2018:  $\[ \le 731 \]$  million).

#### Revenue by Region

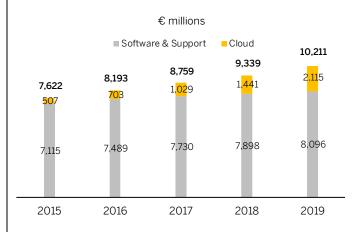
(based on customer location)



#### **EMEA Region**

In 2019, the EMEA region generated  $\[ \le \] 12,105 \]$  million in revenue (2018:  $\[ \le \] 11,104 \]$  million), which was 44% of total revenue (2018: 45%). This represents a year-over-year increase of 9%. Revenue in Germany increased 8% to  $\[ \le \] 3,948 \]$  million (2018:  $\[ \le \] 3,658 \]$  million). Germany contributed 33% (2018: 33%) 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  $\[ \le \] 11 \]$  million (2018:  $\[ \le \] 9,339 \]$  million). That was 84% of all revenue from the region (2018: 84%).

#### **EMEA: Cloud and Software Revenue**



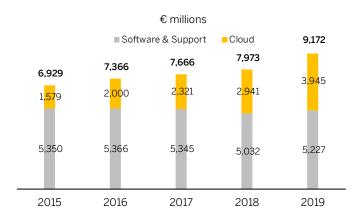
Cloud revenue in the EMEA region rose 47% to €2,115 million in 2019 (2018: €1,441 million). Software licenses and software support revenue rose 3% to €8,096 million in 2019 (2018: €7,898 million).

#### **Americas Region**

In 2019, 41% of our total revenue was generated in the Americas region (2018: 39%). Total revenue in the Americas region increased 15% to  $\[ \in \]$ 1,194 million; revenue generated in the United States increased 15% to  $\[ \in \]$ 9,085 million. The United States contributed 81% (2018: 81%) of all revenue generated in the Americas region. In the remaining countries of the Americas region, revenue increased 15% to  $\[ \in \]$ 2,109 million. 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 €9,172 million (2018: €7,973 million). That was 82% of all revenue from the region (2018: 82%).

#### **Americas: Cloud and Software Revenue**

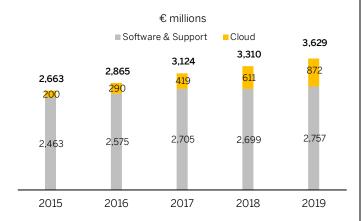


Cloud revenue in the Americas region rose 34% to €3,945 million in 2019 (2018: €2,941 million). Software licenses and software support revenue was €5,227 million in 2019 (2018: €5,032 million).

#### **APJ Region**

In 2019, 15% (2018: 16%) of our total revenue was generated in the APJ region. Total revenue in the APJ region increased 9% to €4,254 million. In Japan, revenue increased 23% to €1,180 million. Revenue from Japan was 28% (2018: 25%) of all revenue generated in the APJ region. In the remaining countries of the APJ region, revenue increased 5%. Revenue in the remaining countries of the APJ region was generated primarily in Australia, China, and India. Cloud and software revenue in the APJ region totaled €3,629 million (2018: €3,310 million). That was 85% of all revenue from the region (2018: 85%).

#### **APJ: Cloud and Software Revenue**



Cloud revenue in the APJ region rose 43% to €872 million in 2019 (2018: €611 million). Software licenses and software support revenue increased from €2,699 million in 2018 to €2,757 million in 2019. This reflects a rise of 2%.

#### Operating Profit and Operating Margin

SAP posted record revenues in 2019, particularly in Cloud and Services. Total revenue grew 12% to €27,553 million (2018: €24,708 million), representing an increase of €2,845 million.

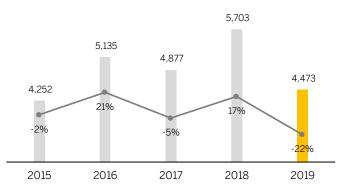
On the other hand, our operating expenses increased  $\[ \] 4,076 \]$  million, or 21%, to  $\[ \] 23,081 \]$  million (2018:  $\[ \] 19,005 \]$  million). The main contributors to that increase were the costs of the SAP restructuring program, totaling  $\[ \] 1,130 \]$  million (2018:  $\[ \] 19 \]$  million), our continued investment in research and development, and our revenue-related cloud subscriptions and support activities. We also continued our investments in the Services area in line with the increased revenue. Acquisition-related charges of  $\[ \] 689 \]$  million (2018:  $\[ \] 577 \]$  million) and share-based compensation of  $\[ \] 1,835 \]$  million (2018:  $\[ \] 830 \]$  million), arising chiefly from the acquisition of Qualtrics, also had a negative impact on operating profit. Our employee headcount (measured in full-time equivalents, or FTEs) grew by 3,832 FTEs year over year to 100,330.

We see the increased operating expenses largely as investments in the future that will help secure our operating profit in the long term

As a result of these effects, our operating profit decreased by 22% to  $\le$ 4,473 million (2018:  $\le$ 5,703 million) and our operating margin decreased by 6.9pp to 16.2% (2018: 23.1%).

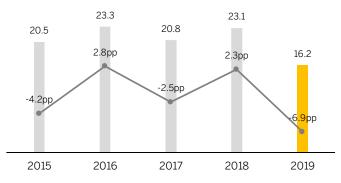
#### **Operating Profit**

€ millions | change since previous



#### **Operating Margin**

Percent | change since previous year



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 costs for deploying and operating cloud solutions, the cost of developing custom solutions that address customers' specific business requirements and customer support costs.

In 2019, the cost of cloud and software increased 13% to  $\le$ 4,692 million (2018:  $\le$ 4,160 million).

A 3% increase in software licenses and software support revenue to €16,080 million (2018: €15,628 million) and a corresponding increase of 3% in the software licenses and software support costs to €2,159 million (2018: €2,092 million) saw our software licenses and software support margin remain constant at 86.6% (2018: 86.6%) The gross margin on cloud and software, defined as cloud and software profit as a percentage of cloud and software revenue, narrowed by 0.2pp in 2019 to 79.6% (2018: 79.8%). This decline was mainly driven by the change in the revenue mix, which now has a higher proportion of cloud revenues. Due to infrastructure costs, these revenues currently deliver a lower margin simultaneously with 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 courses and the cost of bought-in consulting and training resources.

We were able to increase our services revenue by 11% year over year to  $\[ \le \]$ 4,541 million in 2019 (2018:  $\[ \le \]$ 4,086 million). As our service business trends away from traditional software licensing and consulting revenue toward more subscription revenue from cloud solutions, we continue to invest by expanding capacities to meet the higher demand. As a result, cost of services rose 11% to  $\[ \le \]$ 3,662 million (2018:  $\[ \le \]$ 3,302 million). Our gross margin on services, defined as services profit as a percentage of services revenue, increased slightly to 19.4% (2018: 19.2%).

#### **Research and Development**

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 4% increase on average for the year in our R&D headcount, and due to a higher proportion of employees in more cost-intensive countries as a result of the acquisition of Qualtrics, our R&D expense rose by 18% to €4,292 million in 2019 from €3,624 million in 2018. R&D expense as a percentage of total revenue thus increased to 15.6% in 2019 (2018: 14.7%). 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 13% from €6,781 million in 2018 to €7,693 million in 2019. This increase is mainly attributable to the expansion of the global sales force, partly as a result of acquiring Qualtrics, and to greater expenditure on bonus payments prompted by strong revenue growth.

Accordingly, the ratio of sales and marketing expense to total revenue, expressed as a percentage, rose to 27.9% in 2019 (2018: 27.4%), an increase of 0.5pp.

#### **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 rose 48% from €1,098 million in 2018 to €1,629 million in 2019, despite careful cost management. 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. The ratio of general and administration expense to total revenue rose by 1.5pp year over year to 5.9% (2018: 4.4%).

#### Segment Information

At the end of 2019, SAP had three reportable segments: Applications, Technology & Services segment; Intelligent Spend Group segment; and Qualtrics segment. Since we acquired Qualtrics on January 23, 2019, financial data for the Qualtrics segment is only presented from this acquisition date onwards. For more information about our segment reporting and the changes in the composition of our reportable segments in 2019, see the Notes to the Consolidated Financial Statements, *Notes (C.1)* and *(C.2)*, and the *Performance Management System* section.

#### **Applications, Technology & Services Segment**

€ millions, unless otherwise stated (Non-IFRS)		2019	2018	∆ in %	∆ in %
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud revenue – SaaS/PaaS <sup>1)</sup>	3,243	3,152	2,347	38	34
Cloud gross margin – SaaS/PaaS <sup>1)</sup> (in %)	65.3	65.4	59.6	5.7pp	5.8pp
Cloud revenue – IaaS <sup>2)</sup>	695	673	488	43	38
Cloud gross margin – laaS <sup>2)</sup> (in %)	29.1	28.5	12.2	16.9pp	16.4pp
Cloud revenue	3,938	3,825	2,835	39	35
Cloud gross margin (in %)	58.9	58.9	51.4	7.4pp	7.4pp
Segment revenue	23,544	22,980	21,753	8	6
Segment gross margin (in %)	73.5	73.5	73.2	0.3pp	0.3pp
Segment profit	9,868	9,597	8,922	11	8
Segment margin (in %)	41.9	41.8	41.0	0.9pp	0.7pp

<sup>1)</sup> Software as a service/platform as a service

The Applications, Technology & Services segment recorded a strong increase in cloud revenue in 2019. SaaS/PaaS revenue within the segment increased 38% (34% at constant currencies), primarily as a result of high demand in our Intelligent ERP solutions.

Our software support revenue improved slightly in 2019. It rose 5% (3% at constant currencies) to \$11,532 million. Including software licenses revenue, which remained 3% (5% at constant currencies) below the prior-year level due to the shift toward cloud revenue, we achieved a total software licenses and support revenue of \$16,054 million in 2019.

Overall, the revenue share of more predictable revenue streams in this segment increased 2.3pp from 63.5% in 2018 to 65.7% in 2019.

The segment's cost of revenue during the same period increased 7% (5% at constant currencies) to €6.228 million (2018: €5.823 million). This increase in expenses was primarily the result of greater investment in expanding our cloud infrastructure and in providing and operating our cloud applications. This applied to both the SaaS/PaaS and the laaS business, whose cloud gross margins nevertheless increased owing to the growth in revenue. Whereas the SaaS/PaaS cloud gross margin within the Applications, Technology & Services segment grew 5.7pp (5.8pp at constant currencies), our laaS business ended the fiscal year with a cloud gross margin growth of 16.9pp (16.4pp at constant currencies).

#### **Intelligent Spend Group Segment**

€ millions, unless otherwise stated		2019	2018	∆ in %	∆in %
(Non-IFRS)	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud revenue – SaaS/PaaS <sup>1)</sup>	2,693	2,585	2,178	24	19
Cloud gross margin – SaaS/PaaS <sup>1)</sup> (in %)	78.1	78.0	77.8	0.2pp	0.2pp
Cloud revenue	2,693	2,585	2,178	24	19
Cloud gross margin (in %)	78.1	78.0	77.8	0.2pp	0.2pp
Segment revenue	3,184	3,057	2,629	21	16
Segment gross margin (in %)	70.1	69.9	69.1	1.0pp	0.9pp
Segment profit	696	661	531	31	25
Segment margin (in %)	21.9	21.6	20.2	1.7pp	1.4pp

<sup>1)</sup> Software as a service/platform as a service

The Intelligent Spend Group segment, which comprises cloud solutions from SAP Ariba, SAP Concur, and SAP Fieldglass, was able to improve its cloud gross margin by 0.2pp to 78.1%. The segment's cost of revenue increased 17% in 2019 (13% at constant currencies) to €953 million (2018: €813 million). Segment revenue increased by

21% (16% at constant currencies) to €3,184 million. As a result, the Intelligent Spend Group segment achieved a segment gross margin of 70.1% (69.9% at constant currencies) in 2019, reflecting an increase of 1.0pp (0.9pp at constant currencies).

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

#### **Qualtrics Segment**

€ millions, unless otherwise stated		2019	2018 <sup>2)</sup>	∆ in %	∆in %
(Non-IFRS)	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud revenue – SaaS/PaaS <sup>1)</sup>	371	353	NA	NA	NA
Cloud gross margin – SaaS/PaaS <sup>1)</sup> (in %)	91.1	91.1	NA	NA	NA
Cloud revenue	371	353	NA	NA	NA
Cloud gross margin (in %)	91.1	91.1	NA	NA	NA
Segment revenue	508	483	NA	NA	NA
Segment gross margin (in %)	78.3	78.1	NA	NA	NA
Segment profit	8	9	NA	NA	NA
Segment margin (in %)	1.6	2.0	NA	NA	NA

<sup>1)</sup> Software as a service/platform as a service

We acquired Qualtrics on January 23, 2019, as the leading provider of Experience Management (XM) solutions. The product portfolio comprises the Qualtrics XM Platform, which is designed to help organizations measure, prioritize, and optimize the four core experiences of business – customer, product, employee, and brand – on one platform. The Qualtrics segment, however, does not comprise the full impact of the acquisition since some functions of Qualtrics have already been integrated into SAP's corporate functions.

#### **Reconciliation of Cloud Revenues and Margins**

€ millions, unless otherwise stated			2019	2018	∆ in %	∆ in %
(Non-IFRS)		Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
	Intelligent Spend Group segment	2,693	2,585	2,178	24	19
Cloud revenue – SaaS/PaaS <sup>1)</sup>	Other <sup>3)</sup>	3,625	3,515	2,361	54	49
	Total	6,318	6,100	4,539	39	34
Cloud revenue – IaaS <sup>2)</sup>		695	673	488	43	38
Cloud revenue	-	7,013	6,773	5,027	40	35
	Intelligent Spend Group segment	78.1	78.0	77.8	0.2pp	0.2pp
Cloud gross margin – SaaS/PaaS <sup>1)</sup> (in %)	Other <sup>3)</sup>	68.4	68.5	60.0	8.4pp	8.5pp
	Total	72.5	72.5	68.6	4.0pp	3.9pp
Cloud gross margin – laaS <sup>2)</sup> (in %)		29.1	28.5	12.2	16.9pp	16.4pp
Cloud gross margin (in %)		68.2	68.1	63.1	5.1pp	5.0pp

<sup>&</sup>lt;sup>1)</sup> Software as a service/platform as a service

<sup>&</sup>lt;sup>2)</sup>There are no prior-period numbers for the Qualtrics segment presented, since we acquired Qualtrics in 2019.

<sup>&</sup>lt;sup>2)</sup> Infrastructure as a service

<sup>&</sup>lt;sup>3)</sup> Other includes Applications, Technology & Services segment, Qualtrics segment, and miscellaneous. The individual revenue and margin numbers for the Applications, Technology & Services segment and the Qualtrics segment are disclosed on the previous pages.

#### Financial Income, Net

Financial income, net, changed to €198 million (2018: -€47 million). Our finance income was €787 million (2018: €371 million) and our finance costs were €589 million (2018: €418 million).

Finance income mainly consists of gains from disposal of equity securities and IFRS 9-related fair value adjustments, mainly of Sapphire Ventures investments, totaling  ${\in}596$  million (2018:  ${\in}227$  million), interest income from loans and receivables, and other financial assets (cash, cash equivalents, and current investments) totaling  ${\in}75$  million (2018:  ${\in}62$  million), and income from derivatives totaling  ${\in}77$  million (2018:  ${\in}77$  million).

#### Income Taxes

The effective tax rate in 2019 was 26.7% (2018: 27.0%). For more information about income taxes, see the Notes to the Consolidated Financial Statements, *Note* (*C.5*).

### Our 2018 Results Compared to Our 2017 Results (IFRS)

#### **Total Revenue**

Total revenue increased from €23,461 million in 2017 to €24,708 million in 2018, representing an increase of €1,247 million, or 5%. The growth in revenue resulted primarily from a €1,224 million increase in cloud revenue to €4,993 million. Cloud and software revenue represented 83% of total revenue in 2018 (2017: 83%). Service revenue increased 4% from €3,912 million in 2017 to €4,086 million in 2018, which was 17% of total revenue (2017: 17%).

For more information about our regional performance, see the *Revenue by Region* section below.

#### **Cloud and Software Revenue**

Cloud and software revenue grew from €19,549 million in 2017 to €20,622 million in 2018, an increase of 5%.

#### Cloud

Cloud revenue increased from  $\ensuremath{\mathfrak{C}}$ 3,769 million in 2017 to  $\ensuremath{\mathfrak{C}}$ 4,993 million in 2018.

#### **Cloud and Software**

Impacted by currency headwinds, our software revenue declined by €225 million from €4,872 million in 2017 to €4,647 million in 2018. Our customer base continued to expand in 2018. Based on the number of contracts concluded, 15% of the orders we received for software in 2018 were from new customers (2017: 15%). The total value of software orders received decreased 9% year over year. The total number of contracts signed for new software decreased 1% to 58,530 (2017: 59,147), with an average order value of €82 thousand in 2018 (2017: €89 thousand). Of all our software orders received in 2018, 29% were attributable to deals worth more than €5 million (2017: 30%), while 39% were attributable to deals worth less than €1 million (2017: 40%).

Our stable customer base, the continued demand for our software throughout 2018 and the previous years, and the continued interest in our support offerings resulted in an increase in support revenue from  ${\le}10,908$  million in 2017 to  ${\le}10,981$  million in 2018. The SAP Enterprise Support offering was the largest contributor to our support revenue. The  ${\le}73$  million, or 1%, growth in support revenue is primarily attributable to our SAP Product Support for Large Enterprises services and our SAP Enterprise Support services. The acceptance rate for SAP Enterprise Support among new customers remained very high in 2018 at 98% (2017: 99%).

Software and support revenue decreased €152 million, or 1%, from €15,780 million in 2017 to €15,628 million in 2018.

We define more predictable revenue as the sum of our cloud revenue and our software support revenue. Compared to the previous year, our more predictable revenue increased from  $\le$ 14,677 million in 2017 to  $\le$ 15,975 million in 2018. This reflects a rise of 9%. More predictable revenue accounted for 65% of our total revenue in 2018 (2017: 63%).

#### **Services Revenue**

Services revenue increased €175 million, or 4%, from €3,912 million in 2017 to €4,086 million in 2018.

A solid market demand led to a 4% increase of  $\leqslant$ 141 million in consulting revenue and premium support revenue from  $\leqslant$ 3,215 million in 2017 to  $\leqslant$ 3,356 million in 2018. In 2018, consulting and premium support revenue contributed 82% of the total service revenue (2017: 82%) and 14% of total revenue (2017: 14%).

Revenue from other services increased  $\le 34$  million, or 5%, to  $\le 731$  million in 2018 (2017:  $\le 697$  million).

#### **Revenue by Region**

#### **EMEA Region**

Cloud revenue in the EMEA region rose 40% to €1,441 million in 2018 (2017: €1,029 million). Software licenses and software support revenue rose 2% to €7,898 million in 2018 (2017: €7,730 million).

#### **Americas Region**

In 2018, 39% of our total revenue was generated in the Americas region (2017: 40%). Total revenue in the Americas region increased 4% to  ${\it \leqslant}9,713$  million; revenue generated in the United States increased 6% to  ${\it \leqslant}7,880$  million. The United States contributed 81% (2017: 80%) of all revenue generated in the Americas region. In the remaining countries of the Americas region, revenue decreased 4% to  ${\it \leqslant}1,832$  million, induced by a challenging macroeconomic situation in Latin America. 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  ${\it \leqslant}7,973$  million (2017:  ${\it \leqslant}7,666$  million). That was 82% of all revenue from the region (2017: 82%).

Cloud revenue in the Americas region rose 27% to €2,941 million in 2018 (2017: €2,321 million). Software licenses and software

support revenue decreased to €5,032 million in 2018 (2017: €5,345 million).

#### **APJ Region**

In 2018, 16% (2017: 16%) of our total revenue was generated in the APJ region. Total revenue in the APJ region increased 5% to  $\[ \in \]$  3,891 million. In Japan, revenue increased 9% to  $\[ \in \]$  963 million. Revenue from Japan was 25% (2017: 24%) of all revenue generated in the APJ region. In the remaining countries of the APJ region, revenue increased 4%. 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  $\[ \in \]$  3,124 million). That was 85% of all revenue from the region (2017: 84%).

Cloud revenue in the APJ region rose 46% to €611 million in 2018 (2017: €419 million). Software licenses and software support revenue slightly decreased from €2,705 million in 2017 to €2,699 million in 2018, reflecting a year-over-year growth of 0%.

#### **Operating Profit and Operating Margin**

SAP posted record revenues in 2018, particularly in Cloud and Services. Total revenue grew 5% to  $\le$ 24,708 million (2017:  $\le$ 23,461 million), representing an increase of  $\le$ 1,247 million.

On the other hand, our operating expenses increased €421 million or 2% to €19,005 million (2017: €18,584 million). The main contributors to that increase were our continued investment in research and development as well as our revenue-related cloud activities. We also continued our investments in the Services area in line with the increased revenue. Concurrently, the decreased share price in 2018 lead to declining costs of share-based compensation of €830 million (2017: €1,120 million). Restructuring expenses decreased further to €19 million (2017: €182 million). Our employee headcount (measured in full-time equivalents, or FTEs) increased by 7,955 FTEs year over year to 96,498.

Overall, our growth in revenue exceeded the increase in expenses, leading to a 17% increase in operating profit to  $\le$ 5,703 million (2017:  $\le$ 4,877 million).

As an overall result of these effects on operating profit, our operating margin widened 2.3pp to 23.1% in 2018 (2017: 20.8%). Our revenues and results in 2018 were influenced by positive business developments as well as the following special effects (for the impacts on our non-IFRS results at constant currencies, see the *Performance Against Our Outlook for 2018* section in our 2018 Annual Report on Form 20-F):

- In 2018, the adoption of IFRS 15 had a positive effect on software license and support revenue of €170 million. Combined with other counter-effects, this resulted in a total effect on our revenues of €158 million. Our operating expenses benefited by €239 million and our operating profit was positively impacted by €399 million. For more information about the adoption of IFRS 15, see the Notes to the 2018 Consolidated Financial Statements, Note (A.5).
- The acquisition of Callidus Software Inc. (CallidusCloud) had a
  positive impact since the closing date of €126 million on our
  cloud revenue, and a negative impact on our operating profit of
  €70 million. For more information about our acquisitions in 2018,
  see the Notes to the 2018 Consolidated Financial Statement,
  Note (D.1).
- The financial recognition of hyperinflation in Argentina and Venezuela resulted in a decrease in our total revenue of €19 million and in a decrease in our operating profit of €12 million. For

more information about currency conversion and hyperinflation, see the Notes to the 2018 Consolidated Financial Statements, *Note (IN.1)*.

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

#### Cost of Cloud and Software

In 2018, the cost of cloud and software increased 7% to  $\pounds$ 4,160 million (2017:  $\pounds$ 3,893 million).

The main impact on costs was an additional €408 million year over year for delivering and operating cloud applications in response to the strength of customer demand. These investments contributed to revenue growth. Our margin on cloud widened by 2.6pp from 56.0% in 2017 to 58.6% in 2018. This improvement in margin is attributable to strong growth in cloud revenue of 32% to €4,993 million (2017: €3,769 million) with a lower increase in corresponding costs for cloud of 25% to €2,068 million (2017: €1,660 million)

In 2018, a 1% decrease in software license and support revenue to €15,628 million (2017: €15,780 million) and a corresponding decrease of 6% in the software license and support costs to €2,092 million (2017: €2,234 million) enabled us to widen our software license and support margin by 0.8pp to 86.6% (2017: 85.8%). The gross margin on cloud and software, defined as cloud and software profit as a percentage of cloud and software revenue, narrowed by 0.3pp in 2018 to 79.8% (2017: 80.1%). This decline was mainly driven by the change in the cloud and software revenue mix, which now has a higher proportion of cloud revenues. Due to infrastructure costs, these revenues currently deliver a lower margin simultaneously with a declining proportion of higher-margin software and support revenues.

#### **Cost of Services**

We were able to increase our service revenue by 4% year over year to  $\le$ 4,086 million in 2018 (2017:  $\le$ 3,912 million). As our service business trends away from traditional software licensing and consulting revenue toward more subscription revenue from cloud solutions, we continue to invest by expanding capacities to meet the increased demand. As a result, cost of services rose 5% to  $\le$ 3,302 million (2017:  $\le$ 3,158 million). Our gross margin on services, defined as services profit as a percentage of services revenue, remained for the most part stable at 19.2% (2017: 19.3%).

#### **Research and Development Expense**

Due to growing personnel costs driven by a 9% increase on average for the year in our R&D headcount, our R&D expense increased by 8% to  $\le$ 3,624 million in 2018 from  $\le$ 3,352 million in 2017. R&D expense as a percentage of total revenue thus increased to 14.7% in 2018 (2017: 14.3%). For more information, see the *Products, Research & Development, and Services* section.

#### Sales and Marketing Expense

Our sales and marketing expense decreased 2% from  $\$  6,924 million in 2017 to  $\$  6,781 million in 2018. This decrease is mainly attributable to the adoption of the new IFRS 15 accounting standard and the resulting capitalization of sales commissions. For more information, see the Notes to the 2018 Consolidated Financial Statements, *Note (A.5)*. Accordingly, the ratio of sales and marketing expense to total revenue, expressed as a percentage, fell to 27.4% in 2018 (2017: 29.5%), a decrease of 2.1pp.

#### **General and Administration Expense**

General and administration expense increased 2% from  $\[ \le \]$ 1,075 million in 2017 to  $\[ \le \]$ 1,098 million in 2018. 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 improved by 0.1pp year over year to 4.4% (2017: 4.6%).

#### Segment Information

The segment information below for 2018 and 2017 is presented based on the reportable segments Applications, Technology & Services and Intelligent Spend Group. Since we acquired Qualtrics on January 23, 2019, there is no financial data for the Qualtrics segment presented for the years 2018 and 2017.

For more information about our segment reporting, see the Notes to the Consolidated Financial Statements, *Notes (C.1)* and *(C.2)*, and the *Performance Management System* section.

#### **Applications, Technology & Services Segment**

	2018	2017	∆ in %	∆ in %
Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
2,347	2,424	1,593	47	52
59.6	59.1	57.6	2.0pp	1.5pp
488	506	328	49	54
12.2	12.9	7.2	5.0pp	5.7pp
2,835	2,929	1,922	48	52
51.4	51.1	49.0	2.5pp	2.1pp
21,753	22,859	20,857	4	10
73.2	73.0	74.1	-0.8pp	-1.1pp
8,922	9,359	8,587	4	9
41.0	40.9	41.2	-0.2pp	-0.2pp
	Currency 2,347 59.6 488 12.2 2,835 51.4 21,753 73.2 8,922	Actual Currency Currency  2,347 2,424  59.6 59.1  488 506  12.2 12.9  2,835 2,929  51.4 51.1  21,753 22,859  73.2 73.0  8,922 9,359	Actual Currency         Constant Currency         Actual Currency           2,347         2,424         1,593           59.6         59.1         57.6           488         506         328           12.2         12.9         7.2           2,835         2,929         1,922           51.4         51.1         49.0           21,753         22,859         20,857           73.2         73.0         74.1           8,922         9,359         8,587	Actual Currency         Constant Currency         Actual Currency         Actual Currency           2.347         2.424         1,593         47           59.6         59.1         57.6         2.0pp           488         506         328         49           12.2         12.9         7.2         5.0pp           2,835         2,929         1,922         48           51.4         51.1         49.0         2.5pp           21,753         22,859         20,857         4           73.2         73.0         74.1         -0.8pp           8,922         9,359         8,587         4

<sup>1)</sup> Software as a service/platform as a service

The Applications, Technology & Services segment recorded a strong increase in cloud revenue in 2018. Because of high demand in our digital core offering, Customer Experience, and database and data management solutions as well as the growing success of our SAP Cloud Platform in the market, SaaS/PaaS revenue within the segment increased 47% (52% at constant currencies). We also saw SAP S/4HANA Cloud and SAP Leonardo, our strategic offerings for the future, develop very positively and achieve strong growth rates.

Our software support revenue improved slightly in 2018. It rose 1% (5% at constant currencies) to  $\[ \le \]$ 10,969 million. Including software licenses revenue, which remained slightly below the prioryear level due to the shift toward cloud revenue (0% at constant currencies), we achieved a total software licenses and support revenue of  $\[ \le \]$ 15,614 million in 2018. Overall, the revenue share of

more predictable revenue streams in this segment increased 2.0pp from 61.4% in 2017 to 63.5% in 2018.

The segment's cost of revenue during the same period increased 8% (14% at constant currencies) to €5,823 million (2017: €5,412 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 applied both to the SaaS/PaaS business and to the laaS business. Yet, cloud gross margin was improved for both businesses. The SaaS/PaaS business within the Applications, Technology & Services segment increased its cloud gross margin by 2.0pp (1.5pp at constant currencies) whereas the laaS business ended the fiscal year with a cloud gross margin growth of 5.0pp (5.7pp at constant currencies).

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

#### **Intelligent Spend Group Segment**

€ millions, unless otherwise stated (Non-IFRS)	2018		2017	$\Delta$ in %	$\Delta$ in %
(Non in No)	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud revenue – SaaS/PaaS <sup>1)</sup>	2,178	2,265	1,840	18	23
Cloud gross margin – SaaS/PaaS¹¹ (in %)	77.8	77.8	76.7	1.1pp	1.1pp
Cloud revenue	2,178	2,265	1,840	18	23
Cloud gross margin (in %)	77.8	77.8	76.7	1.1pp	1.1pp
Segment revenue	2,629	2,733	2,261	16	21
Segment gross margin (in %)	69.1	69.0	67.9	1.1pp	1.1pp
Segment profit	531	545	388	37	40
Segment margin (in %)	20.2	19.9	17.2	3.0pp	2.8pp

<sup>1)</sup> Software as a service/platform as a service

The Intelligent Spend Group segment increased its cloud gross margin in 2018 by 1.1pp again, to 77.8%. The segment's cost of revenue increased 12% in 2018 (17% at constant currencies) to €813 million (2017: €725 million). The segment revenue increased

by 16% (21% at constant currencies) to €2,629 million. As a result, the Intelligent Spend Group segment improved in 2018 and achieved a segment gross margin of 69.1% (2017: 67.9%).

#### **Reconciliation of Cloud Revenues and Margins**

€ millions, unless otherwise stated			2018	2017	Δ in %  Actual  Currency	Δ in % Constant Currency
(Non-IFRS)		Actual Constant Currency Currency		Actual Currency		
	Intelligent Spend Group segment	2,178	2,265	1,840	18	23
Cloud revenue – SaaS/PaaS <sup>1)</sup>	Other <sup>3)</sup>	2,361	2,434	1,604	47	52
	Total	4,539	4,700	3,443	32	36
Cloud revenue – laaS <sup>2)</sup>		488	506	328	49	54
Cloud revenue		5,027	5,205	3,771	33	38
	Intelligent Spend Group segment	77.8	77.8	76.7	1.1pp	1.1pp
Cloud gross margin – SaaS/PaaS <sup>1)</sup> (in %	o) Other <sup>3)</sup>	60.0	59.3	56.7	3.3pp	2.5pp
	Total	68.6	68.2	67.4	1.2pp	0.8pp
Cloud gross margin – laaS <sup>2)</sup> (in %)		12.2	12.9	7.2	5.0pp	5.7pp
Cloud gross margin (in %)		63.1	62.8	62.2	0.9рр	0.7рр

<sup>1)</sup> Software as a service/platform as a service

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

<sup>&</sup>lt;sup>3)</sup> Other includes Application, Technology & Services segment and miscellaneous. The individual revenue and margin numbers for the Application, Technology & Services segment are disclosed on the previous pages.

#### Financial Income, Net

Financial income, net, changed in 2018 to -€47 million (2017: €188 million). Our finance income was €371 million (2017: €476 million) and our finance costs were €418 million (2017: €288 million).

Finance costs mainly consist of interest expense on financial liabilities amounting to \$\epsilon\$106 million (2017: \$\epsilon\$89 million), negative effects from derivatives amounting to \$\epsilon\$206 million (2017: \$\epsilon\$116 million), and losses from disposal or IFRS 9-related fair value adjustments of Sapphire Ventures investments totaling \$\epsilon\$45 million (2017: \$\epsilon\$27 thousands). For more information about financing instruments, see the 2018 Annual Report on Form 20-F, Part III, Notes to the Consolidated Financial Statement, *Note* (*E.3*).

#### **Income Taxes**

The effective tax rate in 2018 was 27.0% (2017: 19.5%). The year-over-year increase in the effective tax rate mainly resulted from the absence of one-time tax benefits realized in 2017 relating to an intragroup transfer of intellectual property rights to SAP SE and the U.S. tax reform, and tax effects relating to intercompany financing, 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 2018 Annual Report on Form 20-F, Part III, Notes to the Consolidated Financial Statement, *Note (C.5)*.

### **Foreign Currency Exchange Rate Exposure**

Although our reporting currency is the euro, a significant portion of our business is conducted in currencies other than the euro. Since the Group's entities usually conduct their business in their respective functional currencies, our risk of exchange rate fluctuations from ongoing ordinary operations is not considered significant. However, occasionally we 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 (F.1)* to our Consolidated Financial Statements. Also see *Note (F.1)* for additional information on foreign currencies.

Approximately 73% of our total revenue in 2019 (2018: 72%) was attributable to operations in non-euro participating countries. We translated that revenue into euros for financial reporting purposes. Fluctuations in the exchange value of the euro had a favorable impact of  $\ensuremath{\in}$  724million on our total revenue for 2019, an unfavorable impact of  $\ensuremath{\in}$  1,219 million on our total revenue for 2018 and an unfavorable impact of  $\ensuremath{\in}$  301 million on our total revenue for 2017.

The impact of foreign currency exchange rate fluctuations discussed in the preceding paragraph is calculated by translating current period figures in local currency to euros at the monthly average exchange rate for the corresponding month in the prior year.

Our revenue analysis, included within the "Operating Results" section of Item 5, discusses at times the effect of currency movements which are calculated in the same manner.

### Liquidity and Capital Resources

#### 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 financial obligations at all times. Most SAP entities 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 (F.1)* and *(F.2)*.

#### **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, 2019, 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. Our investments in financial assets of issuers with a credit rating lower than BBB were not material in 2019.

We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs in 2020 and, together with expected cash flows from operations, will support debt repayments, currently planned capital expenditure requirements, and capital returns to our shareholders 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, to maintain flexibility, and/or 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.

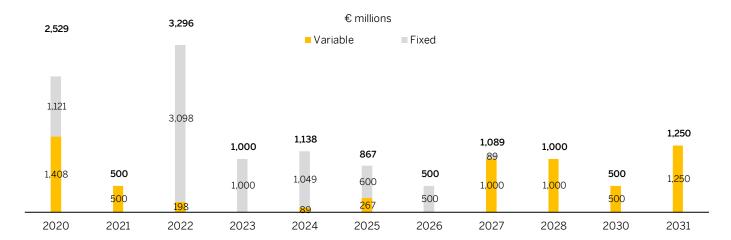
For more information about the capital structure and its analysis, see the Notes to the Consolidated Financial Statements, *Note (E.1)*.

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

The Company intends to repurchase shares with a volume of €1.5 billion by December 31, 2020. The timing and the instruments of capital returns will be determined by SAP based on its evaluation of market conditions, company performance, and other factors. The enhanced capital return will be in addition to SAP's regular dividend policy. Further capital returns in subsequent years will be decided on an annual basis in line with SAP's capital allocation priorities. Financial Debts

Financial debt is defined as the nominal volume of bank loans, commercial papers, private placements, and bonds.

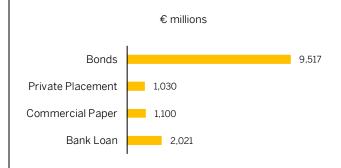
#### **Maturity Profile of Financial Debts**



Nominal volume of financial debt on December 31, 2019, included amounts in euros ( $\[ \le \]$ 12,362 million) and U.S. dollars ( $\[ \le \]$ 1,297 million). On December 31, 2019, approximately 54% of the financial debt was held at variable interest rates, partially swapped from fixed into variable using interest rate swaps.

For information about the intended repayments, see the goals for liquidity and finance in the *Financial Targets and Prospects* section.

#### **Financial Debt by Instrument**



For more information about our financial debt, see the Notes to the Consolidated Financial Statements, *Note (E.3)*.

#### Cash Flows and Liquidity

#### 2019 Actual Cash Flow and Liquidity Performance Compared to Outlook

We met or exceeded the revised outlook for capital expenditure, share-based payment payouts, and income tax payouts that we published in November 2019. Due to higher payouts, we did not meet our outlook for restructuring payouts, operating cash flow, and free cash flow.

€ billions	Results 2018	Outlook (as reported in the Integrated Report)	Revised Outlook (Q2 Quarterly Statement)	Revised Outlook (November)	Results 2019
Operating cash flows	4.3	broadly in line	slightly lower		3.5
Capital expenditure	-1.5	unchanged level	-1.2	-1.0	-0.8
Free cash flow	2.8	decrease moderately	decrease moderately		2.3
Share-based payment payouts	-1.0	additional 0.3	additional 0.4	-1.4	-1.3
Restructuring payouts	-0.1	additional 0.55 to 0.75	additional 0.55 to 0.75	-0.6 to -0.8	-0.9
Income taxes payouts	-1.7	additional 0.3	additional 0.6	-2.2 to -2.4	-2.3
Net debt (-)	-2.5			-8	-8.3
Ratio of net debt divided by operating profit plus depreciation and amortization	0.4			>1.2	1.3

#### **Group Liquidity and Net Debt**

€ millions	2019	2018	Δ
Cash and cash equivalents	5,314	8,627	-3,313
Current time deposits and debt securities	67	211	-144
Group liquidity	5,382	8,838	-3,456
Current financial debt	-2,529	-759	-1,770
Non-current financial debt	-11,139	-10,572	-567
Financial debt	-13,668	-11,331	-2,337
Net debt (-)	-8,286	-2,493	-5,793
Lease liability	-2,203	NA	
Net debt including lease liability	-10,489	NA	

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, time deposits and debt securities 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. Group liquidity on December 31, 2019, primarily comprised amounts in euros and U.S. dollars.

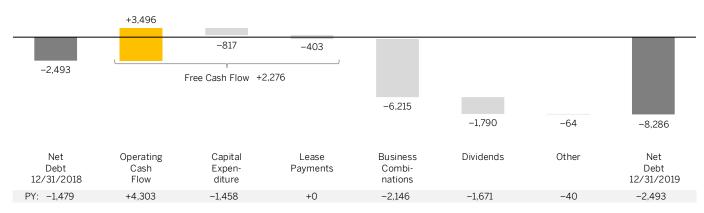
The decrease in group liquidity compared to 2018 was mainly due to the cash outflows for the Qualtrics acquisition, while the cash inflow from borrowings for the Qualtrics acquisition already took place in 2018. They were partly offset by cash inflows from our operations.

Net debt is financial debt less group liquidity. For more information about our liquidity, see the Notes to the Consolidated Financial Statements, *Note* (*E.3*).

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.

#### **Development of Net Debt**

#### € millions



#### **Analysis of Consolidated Statements of Cash Flows**

millions Years ended December 31,								
	2019	2018	2017	Δ in % 2019 vs. 2018	Δ in % 2018 vs. 2017			
Net cash flows from operating activities	3,496	4,303	5,045	-19	-15			
Net cash flows from investing activities	-7,021	-3,066	-1,112	>100	>100			
Net cash flows from financing activities	102	3,283	-3,406	-97	<-100			

### Analysis of Consolidated Statements of Cash Flows: 2019 compared to 2018

Following the new lease accounting rules (IFRS 16), we had a positive impact on operating cash flow from the reclass of leasing payments into cash flows from financing of €0.4 billion.

Cash outflows from investing activities were €7,021 million in 2019 (2018: €3,066 million). We paid, net of cash received, a total of €6.1 billion for the Qualtrics acquisition in 2019, compared to €2.1 billion in 2018, mainly for Callidus. Instead of investing in the expansion of our data centers, there was a strong focus on improving capacity utilization, resulting in a decrease in capital expenditures on purchases of intangible assets and property, plant, and equipment by €642 million to €817 million. For more information about current and planned capital expenditures, see the *Investment Goals* section.

Net cash inflows from financing activities were €102 million in 2019, compared to €3,283 million in 2018. In 2019, we drew €2.5 billion of an acquisition term loan for Qualtrics. We refinanced €0.5 billion of the acquisition term loan through the issuance of the same amount under a commercial paper program (Commercial Paper) we launched in September 2019. This program enables SAP SE to issue short-term notes up to €2.5 billion. The cash outflows resulted from repayments of €0.75 billion in Eurobonds when they matured, whereof we refinanced €0.6 billion through Commercial Paper. In 2018, we issued €6.0 billion in Eurobonds financing the acquisition of Callidus and Qualtrics, and a US\$0.3 billion USD bond. Cash outflows in 2018 resulted from repayments of €1.15 billion in Eurobonds and US\$0.15 billion in U.S. private placements when they matured.

The dividend payment of €1,790 million made in 2019 exceeded the respective amount of €1,671 million paid in the prior year, the dividend paid per share increased from €1.40 to €1.50.

### Analysis of Consolidated Statements of Cash Flows: 2018 Compared to 2017

Cash outflows from investing activities were €3,066 million in 2018 (2017: €1,112 million). We paid a total of €2,140 million for acquisitions, mainly Callidus, in 2018, compared to €291 million in 2017. Capital expenditures on purchases of intangible assets and property, plant, and equipment increased by €183 million to €1,458 million in 2018. For more information about current and planned capital expenditures, see *the Investment Goals* section.

Net cash inflows from financing activities were €3,283 million in 2018, compared to cash outflows of €3,406 million in 2017. In 2018, we issued €6,000 million in Eurobonds financing the acquisition of Callidus and Qualtrics, and a US\$300 million USD bond. The cash outflows resulted from repayments of €1,150 million in Eurobonds and US\$150 million in U.S. private placements when they matured. Cash outflows in 2017 resulted from repayments of €1,000 million in Eurobonds and US\$442.5 million in U.S. private placements when they matured.

The dividend payment of  $\[ \le \]$ 1,671 million made in 2018 exceeded the amount of  $\[ \le \]$ 1,499 million from the prior year, as a result of the increased dividend paid per share from  $\[ \le \]$ 1.25 to  $\[ \le \]$ 1.40. In 2017, we repurchased shares in the amount of  $\[ \le \]$ 500 million (2018:  $\[ \le \]$ 0).

#### **Credit Facilities**

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

To retain high financial flexibility, we have available a &2.5 billion syndicated revolving credit facility with an end date in November 2024. 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, 2019, SAP SE had additional available credit facilities totaling €424 million. Several other SAP entities have credit facilities available that allow them to borrow funds at prevailing interest rates. As at December 31, 2019, approximately €7 million was available through such arrangements. There were immaterial borrowings outstanding under these credit facilities from our foreign subsidiaries as at December 31, 2019.

Resulting from the acquisition of Qualtrics, a term loan of €2.0 billion was still outstanding on December 31, 2019. The amount can be flexibly repaid until maturity of the loan on January 23, 2022.

### Off-Balance Sheet Arrangements

We do not believe we have forms of material off-balance sheet arrangements that would require disclosure other than those already disclosed.

### **Contractual Obligations**

The table below presents our on- and off-balance sheet contractual obligations as of December 31, 2019:

#### **Contractual Obligations**

#### Payments due by period

€ millions	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Lease liabilities <sup>1)</sup>	2,511	431	647	414	1,019
Other financial liabilities <sup>1)</sup>	14,725	2,888	4,044	2,326	5,467
Derivative financial liabilities <sup>1)</sup>	115	55	1	1	58
Purchase obligations <sup>2)</sup>	2,592	1,251	897	401	43
Capital contribution commitments <sup>2)</sup>	206	206	0	0	0
Other non-current non-financial liabilities <sup>3)</sup>	814	0	646	26	142
Total	20,963	4,830	6,235	3,168	6,729

<sup>1)</sup> Excludes certain low-value and short-term leases as mentioned in *Note (D.8)*. For more information on lease liabilities, other financial liabilities and derivative financial liabilities see *Notes* (E.3) and (F.1) to our Consolidated Financial Statements.

<sup>&</sup>lt;sup>2)</sup> See *Notes* (*D.5*) and (*D.7*) to our Consolidated Financial Statements for additional information about capital contribution commitments and purchase obligations. Our expected contributions to our pension and other post-employment benefit plans are not included in the table above. For more information on these contributions see *Note* (*B.4*) to our Consolidated Financial Statements.

<sup>&</sup>lt;sup>3)</sup> For more information on other non-current non-financial liabilities see Notes (B.3), (B.5), and (G.2) to our Consolidated Financial Statements.

We expect to meet these contractual obligations with our existing cash, our cash flows from operations and our financing activities. The timing of payments for the above contractual obligations is based on payment schedules for those obligations where set payments exist. For other obligations with no set payment schedules, estimates for the most likely timing of cash payments have been made. The ultimate timing of these future cash flows may differ from these estimates.

### Obligations under Indemnifications and Guarantees

Our software license agreements and our cloud subscription agreements generally include certain provisions for indemnifying customers against liabilities if our software products infringe a third party's intellectual property rights. In addition, we occasionally provide function or performance guarantees in routine consulting contracts and development arrangements. We also generally provide a six to twelve-month warranty on our software and a subscription-length warranty on cloud services with a 90 day claim cut off. Our warranty liability is included in other provisions. For more information on other provisions see *Notes* (A.4), (B.5), and (B.6) to our Consolidated Financial Statements. For more information on obligations and contingent liabilities refer to *Notes* (A.4), (D.5), (D.7) and (G.3) in our Consolidated Financial Statements.

#### **Research and Development**

For information on our R&D activities see "Item 4. Information about SAP — Products, Research & Development, and Services." For information on our R&D costs see "Item 5. Operating and Financial Review and Prospects — Operating Results (IFRS)" and for information related to our R&D employees see "Item 6. Directors, Senior Management and Employees — Employees."

### **Critical Accounting Estimates**

See *Note (IN.1)* to our Consolidated Financial Statements for the discussion on our critical accounting estimates and critical accounting policies.

### New Accounting Standards not yet Adopted

See *Note (IN.1)* to our Consolidated Financial Statements for our discussion on new accounting standards not yet adopted.

#### **Expected Developments**

#### **Future Trends in the Global Economy**

The recovery in global economic activity is expected to be mild in 2020, according to the European Central Bank (ECB) in its

December 2019 Economic Bulletin.<sup>1)</sup> The main influences will be a deceleration of growth in advanced economies and China, and a moderate recovery in some emerging economies (even if less dynamic than previously expected).

In the Europe, Middle East, and Africa (EMEA) region, the ECB predicts that the ongoing weakness of international trade will weigh on the euro area economy in 2020 due to persistent global uncertainties. However, the ECB's economic data, while remaining weak overall, points to a stabilization in the slowdown of economic growth in the euro area. The ECB expects the euro area economy to grow by 1.1% in 2020 and by 1.4% in both 2021 and 2022. At the same time, economic growth is projected to remain buoyant in central and eastern European countries over the projection horizon. In Russia, the medium-term outlook will be shaped primarily by fiscal and structural policy implementation, global oil market developments, and the scope of the international sanctions regime.

Looking at the Americas region, the ECB expects economic activity in the United States to remain resilient in the near term, but to decelerate in the medium term to growth rates of just below 2%. This will, however, depend on the outcome of continuing trade talks with China and many other countries. In Brazil, medium-to-long term growth will be significantly influenced by the degree to which necessary fiscal reforms are going to be implemented.

For the Asia Pacific Japan (APJ) region, the ECB projects that economic activity in Japan will grow moderately over the medium term, but weaken temporarily following the value-added tax hike in October 2019. A recently announced fiscal stimulus package could provide some support to economic growth further ahead. The gradual transition of China to a lower growth path will weigh on the global economy as a whole in the coming years. However, the Chinese economy might pick up marginally in 2021 and 2022, supported by policy actions and the implementation of structural reforms.

With regard to growth rates, the International Monetary Fund (IMF) projects the following economic trends for the mid-term horizon until the end of 2020:

### **Economic Trends GDP Growth Year Over Year**

%	2018	2019e	2020p
World	3.6	2.9	3.3
Advanced economies	2.2	1.7	1.6
Developing and emerging economies	4.5	3.7	4.4
Regions (according to new IMF taxonomy)			
Euro area	1.9	1.2	1.3
Germany	1.5	0.5	1.1
Emerging and Developing Europe	3.1	1.8	2.6
Middle East and Central Asia	1.9	0.8	2.8
Sub-Saharan Africa	3.2	3.3	3.5
United States	2.9	2.3	2.0
Canada	1.9	1.5	1.8
Latin America and the Caribbean	1.1	0.1	1.6
Japan	0.3	1.0	0.7
Emerging and Developing Asia	6.4	5.6	5.8
China	6.6	6.1	6.0
		·····	

e = estimate, p = projection

Source: International Monetary Fund (IMF), World Economic Outlook Update January 2020, Tentative Stabilization, Sluggish Recovery? (https://www.imf.org/~/media/Files/Publications/WEO/2020/January/English/text.ashx?la=en), p. 9.

The IMF changed the taxonomy and grouping of countries and regions in October 2019.

### The IT Market: Outlook for 2020 and Beyond

International Data Corporation (IDC), a U.S.-based market research firm, predicts that within the next four years, the global economy will reach "digital supremacy" <sup>2)</sup>: More than half of all global GDP will then be driven by products and services from digitally transformed enterprises. Digital apps and services will be created and enhanced many times faster than today, in much greater numbers, and based on massively expanded digital supply chains. In addition, by 2024 more than 50% of all IT spending will be directed toward digital transformation and innovation, which means an annual growth rate of 17% compared to 2% for the rest of IT (for example, maintenance of existing systems). The largest growth, however, will be in data intelligence and analytics, 48% of this represented by the Internet of Things (IoT) alone.<sup>3)</sup>

Along with this development, IDC expects a strong market concentration over the coming years: By 2023, the top five public cloud platforms will make up at least 75% of infrastructure- and platform-as-a-service (laaS/PaaS) market share (62% in 2018). At the same time, the top ten pure-play software-as-a-service (SaaS) vendors will generate an average of nearly 20% of revenue from expanding their PaaS solutions coming along with their apps (4% in 2018).<sup>2)</sup>

In recent publications, IDC puts particular emphasis on the importance of artificial intelligence (AI), which it believes will become "inescapable" over the coming years. It expects investments in Big Data analytics and cognitive AI to reach over \$265 billion in 2023 (\$124 billion in 2019). Investments in AI solutions alone might grow by 38% annually until 2022, by which time revenue could reach \$79.2 billion. 4)

By 2025, at least 90% of new enterprise apps will embed AI, and over half of all user interface transactions will use technologies such as computer vision, natural language processing, and gesture control, says IDC.<sup>2)</sup> Already by 2022, over 75% of enterprise application suppliers might have connected their business apps to create a digital core that enable them to analyze different types of data from numerous sources.<sup>4)</sup> What's more, by 2025, 50% of business applications could have functionality that does not yet exist, making them far more efficient than today's offerings and requiring significantly less human intervention.<sup>4</sup>

#### Sources

<sup>1)</sup> European Central Bank, Economic Bulletin, Issue 8/2019, Publication Date: December 27, 2019

(https://www.ecb.europa.eu/pub/pdf/ecbu/eb201908.en.pdf) <sup>2)</sup> IDC FutureScape: Worldwide IT Industry 2020 Predictions, Doc #US45599219, October 2019

 $^{\rm 3)}$  IDC FutureScape: Worldwide Digital Transformation 2020 Predictions, Doc #US45569118, October 2019

<sup>4)</sup> IDC FutureScape: Worldwide Intelligent ERP 2020 Predictions, Doc US44646019, October 2019

#### Impact on SAP

The digital transformation of the global economy is in full swing, and SAP's broad solution portfolio and innovation strategy are playing a key role in this evolution. Though current macroeconomic uncertainties are holding back individual countries and sectors, the majority of enterprises is taking advantage of the latest technological developments to restructure their business models, win market share, and increase efficiency.

SAP's innovative applications and our offerings for next-generation technologies such as machine learning, AI, blockchain, and the IoT are convincing more customers of the power and efficiency of our portfolio and our technology platform. We also offer our customers unparalleled flexibility options for using our software – on premise, in the cloud, or hybrid.

We continue to expect solid growth going forward, particularly with respect to our cloud solutions, which remain in high demand.

#### **Financial Targets and Prospects**

Revenue and Operating Profit Targets and Prospects (Non-IFRS)

#### Outlook 2020

The Company is providing the following 2020 outlook:

- Non-IFRS cloud revenue is expected to be in a range of €8.7 billion to €9.0 billion at constant currencies (2019: €7.01 billion), up 24% to 28% at constant currencies.
- Non-IFRS cloud and software revenue is expected to be in a range of €24.7 billion to €25.1 billion at constant currencies (2019: €23.09 billion), up 7% to 9% at constant currencies.
- Non-IFRS total revenue is expected to be in a range of €29.2 billion to €29.7 billion at constant currencies (2019: €27.63 billion), up 6% to 8% at constant currencies.
- Non-IFRS operating profit is expected to be in a range of €8.9 billion to €9.3 billion at constant currencies (2019: €8.21 billion), up 8% to13% at constant currencies.
- The share of more predictable revenue (defined as the total of cloud revenue and software support revenue) is expected to be approximately 70%.

We expect that, in 2020, the gross margin from our Intelligent Spend Group segment will be higher than 80% (2019: 78%).

We expect that, in 2020, the gross margin from our public cloud offerings will reach approximately 70% (2019: 68%), and expand to about 80% over the course of the two years thereafter.

We expect the gross margin from our private cloud offerings to be in a range of approximately 30% to 35% by 2020 (2019: 29%).

We continue to expect the cloud gross margin to be approximately 71% by 2020.

We expect the 2020 gross margin for our software licenses and support to remain at a similar level to 2019 (2019: 87%).

In addition, we expect our 2020 gross margin for services to remain at a similar level to 2019 (2019: 25%).

As we look to increase our profitability through 2020, our cost ratios (cost as a percentage 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.

Further, we expect the segment profit to increase in all our reportable segments.

While SAP's full-year 2020 business outlook is at constant currencies, actual currency reported figures are expected to be impacted by currency exchange rate fluctuations throughout the year. See the table below for the full-year 2020 expected currency impacts. These currency expectations for the full-year 2020 are based on the December 2019 level.

In percentage points	2020
Cloud subscriptions and support	-1pp to +1pp
Cloud and software	-1pp to +1pp
Operating profit	Opp to +2pp

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 2020	Actual Amounts for 2019
Revenue adjustments	0-30	81
Share-based payment expenses	1,200-1,600	1,835
Acquisition-related charges	580–690	689
Restructuring	10-20	1,130

The Company expects a full-year 2020 effective tax rate (IFRS) of 27.0% to 28.0% (2019: 26.7%) and an effective tax rate (non-IFRS) of 26.5% to 27.5% (2019: 26.2%).

#### **Proposed Dividend**

In line with our dividend policy of distributing at least a dividend totaling 40% or more of the prior year's profit after tax, we intend to pay a dividend of €1.58 per share (subject to shareholder approval at the Annual General Shareholders meeting in May 2020). Besides this, the Company intends to repurchase shares with a volume of €1.5 billion by December 31, 2020. For more information, see "Item 3. Key Information – Dividends."

#### **Organizational Changes**

At the beginning of 2020, SAP modified its organizational structure to strengthen the focus on customer success and employee engagement while driving innovation and simplicity. The set-up moving forward aims at raising synergies, reducing complexity while initiating key steps towards further integration. The organizational changes will also affect SAP's segment reporting. SAP has already started the process of redefining its management reporting under the new organizational structure, which the segment reporting will follow.

#### **Medium-Term Prospects**

In this section, all numbers are based exclusively on non-IFRS measures.

SAP expects 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.

At the beginning of 2019, we introduced a 2023 ambition. Over the period from 2018 through 2023, SAP continues to expect to:

- More than triple our non-IFRS cloud revenue (2018: €5.03 billion)
- Grow our non-IFRS total revenue to more than €35 billion (2018: €24.74 billion)
- Approach a share of more predictable revenue of 80%.
- Reach a non-IFRS cloud gross margin of 75%
- Increase the non-IFRS operating margin by one percentage point (pp) per year on average, representing a total expansion of approximately 500 basis points. We expect to achieve this result based on the following effects:
  - An adverse revenue mix effect of approximately minus 4pp.
  - Our cloud gross margin expansion will add approximately 5pp.
  - Our services margin expansion will add approximately 0.5pp.
  - Reduction of our sales and marketing expense ratio will add between 2.5pp and 3pp (2018: 25%).
  - Reduction of our general and administration expense ratio will add between 0.5pp and 1pp(2018: 4%).

The gross margin for our software licenses and support (2018: 87%) as well as our research and development cost ratio (2018: 14%) is expected to remain at a similar level to 2018.

#### **Investment Goals**

Our planned investment expenditures for 2020 and 2021, other than for business combinations, consist primarily of the purchase of IT infrastructure and the construction activities described in "Item 4. Information About SAP – Description of Property – Capital Expenditures." We expect investments in IT infrastructure of approximately €591 million and in construction activities of approximately €235 million in 2020. In 2020, we expect total capital expenditures of approximately €1.1 billion. In 2021, capital expenditures are expected to stay at a similar level as in 2020.

#### Goals for Liquidity and Finance

As at December 31, 2019, we had a net debt of €8,286 million. We believe that our liquid assets, combined with our undrawn credit facilities, are sufficient to meet our operating financing needs in 2020 as well, 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 2020, compared to 2019, we expect lower cash outflows for restructuring and extraordinary taxes. Together with a positive impact from our operating activity, we expect about  $\mathfrak{C}6$  billion in operating cash flow for 2020. Free cash flow (as redefined in response to IFRS 16) is expected to increase to a level of  $\mathfrak{C}4.5$  billion. For 2023, we expect around  $\mathfrak{C}8$  billion in free cash flow.

We intend to repay €1,150 million in Eurobonds and US\$290 million in U.S. Private Placements in 2020. In addition, we might refinance the full or portions of the currently outstanding €2.0 billion Qualtrics acquisition term loan with additional capital market transactions. The ratio of net debt as at December 31, 2020, of around €7 billion divided by the total of operating profit (IFRS) plus depreciation and amortization should be below 0.9. From 2020

to 2023, we expect to reduce net debt due to scheduled debt repayments of around €6.2 billion.

### Non-Financial Goals 2020 and Ambitions for 2023

In addition to our financial goals, we also focus on three nonfinancial targets: customer loyalty, employee engagement, and carbon emissions

For 2020 throughout to 2023, we aim to lift employee engagement, as measured by the Employee Engagement Index, and keep it between 84% and 86%. (2019: 83%).

We measure customer loyalty using the Customer Net Promoter Score (NPS). We are targeting to increase the Customer NPS by 3 points to 5 points in 2020 and to steadily increase the Customer NPS in 2021 and beyond. (2019: –6).

We aim to decrease carbon emissions to 238 kt in 2020 (2019: 300 kt) with a steady decrease further on, reaching 95kt by 2023. Our overarching ambition is to achieve a net-zero carbon footprint of SAP's operations by 2025.

### Premises on Which Our Outlook and Prospects Are Based

In preparing our outlook and prospects, 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.

### ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

#### **Supervisory Board**

The current members of the Supervisory Board of SAP SE, each member's principal occupation, the year in which each was first elected and the year in which the term of each expires, respectively, are as follows:

Name	Age	Principal Occupation	Year First Elected	Year Term Expires
Prof. Dr. h.c. mult. Hasso Plattner, Chairman(1)(3)(6)(7)	76	Chairman of the Supervisory Board		2022
Margret Klein-Magar, Vice Chairperson(2)(3)(4)	55	Employee, Vice President, Head of SAP Alumni Relations	2012	2024
Pekka Ala-Pietilä(1)(3)(7)(8)	63	Chairman of the Board of Directors, Huhtamäki Oyj	2002	2022
Panagiotis Bissiritsas(2)(3)(4)(5)	51	Employee, Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)	2007	2024
Aicha Evans(1)(3)(6)(8)	50	Chief Executive Officer and Member of the Board of Directors, Zoox, Inc.	2017	2024
Diane Greene(1)(6)(7)	64	Member of the Board of Directors Stripe, Inc.	2018	2023
Prof. Dr. Gesche Joost(1)(6)(8)	45	Professor for Design Research and Head of the Design Research Lab, University of Arts Berlin	2015	2023
Monika Kovachka-Dimitrova(2)(6)(8)	44	Employee, Chief Project Expert Development, Member of SAP SE Works Council (Europe)	2019	2024
Lars Lamadé(2)(3)(6)	48	Employee, Head of Sponsorships Europe and Asia	2002	2024
Bernard Liautaud(1)(3)(6)(7)	57	Managing Partner Balderton Capital	2008	2023
Gerhard Oswald(1)(4)(5)(6)	66	Managing Director of Oswald Consulting GmbH	2019	2024
Christine Regitz(2)(3)(5)(6)	53	Employee, Vice President User Experience, Chief Product Expert	2015	2024
Dr. Friederike Rotsch(1)(3)(4)(5)	47	Group General Counsel and Head of Group Legal & Compliance, Merck KGaA	2018	2024
Heike Steck(2)(6)(8)	58	Employee, Senior Operations Manager, Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)	2019	2024
Christa Vergien-Knopf(2)(6)(8)	(nopf(2)(6)(8) 58 Employee, Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)		2019	2024
Dr. Gunnar Wiedenfels(1)(4)(5)(9)	42	Chief Financial Officer, Discovery Communications, Inc.	2019	2022
James Wright(2)(4)(5)(6)	57	Employee, Chairman of the SE Works Council (Europe)	2019	2024
Ralf Zeiger(2)(3)(8)	51	Employee, Chairman of SAP SE Works Council and Member of SAP SE Works Council (Europe)	2019	2024

- (1) Elected by SAP SE's shareholders on May 15, 2019.
- (2) Appointed by the SAP SE Works Council Europe on April 3, 2019.
- (3) Member of the General and Compensation Committee.
- (4) Member of the Audit Committee.
- (5) Member of the Finance and Investment Committee.
- (6) Member of the Technology and Strategy Committee.
- $(7)\,Member\ of\ the\ Nomination\ Committee.$
- (8) Member of the People and Organization Committee.
- (9) Audit Committee financial expert.

For detailed information on the Supervisory Board committees and their tasks, including the Audit Committee and the General and Compensation Committee, please refer to "Item 10 Additional Information — Corporate Governance."

Pursuant to the Articles of Incorporation of SAP SE and the Agreement on the Involvement of Employees in SAP SE, members of the Supervisory Board of SAP SE consist of nine representatives of

the shareholders and nine representatives of the European employees. The current nine employees' representatives were appointed by the SAP SE Works Council Europe on April 3, 2019.

Certain current members of the Supervisory Board of SAP SE were members of supervisory boards and comparable governing bodies of enterprises other than SAP SE in Germany and other countries as of December 31, 2019 See *Note (G.4)* to our

Consolidated Financial Statements for more detail. Apart from pension obligations for employees, SAP SE has not entered into contracts with any member of the Supervisory Board that provide for benefits upon a termination of the employment or service of the member

#### **Executive Board**

The current members of the Executive Board, the year in which each member was first appointed and the year in which the term of each expires, respectively, are as follows:

Name <sup>(i)</sup>	Year First Appointed	Year Current Term Expires
Christian Klein, co-CEO	2018	2025
Jennifer Morgan, co-CEO	2017	2025
Adaire Fox-Martin	2017	2025
Michael Kleinemeier	2015	2020
Luka Mucic	2014	2021
Jürgen Müller	2019	2022
Stefan Ries	2016	2024
Thomas Saueressig	2019	2022

(b) On February 19, 2020, Michael Kleinemeier and the Supervisory Board mutually agreed that he will depart SAP as of April 30, 2020 and that his membership on the Executive Board will end effective as of that day. Further, Stefan Ries and the Supervisory Board mutually agreed that Stefan will depart SAP as of May 31, 2020 and that his memberhip on the Executive Board will end effective as of that day.

A description of the management responsibilities and backgrounds of the current members of the Executive Board are as follows:

Christian Klein, co-CEO (Co-Vorstandssprecher), 39 years old, holds a diploma in international business administration from the University of Cooperative Education in Mannheim, Germany. He joined SAP in 1999 and became a member of the Executive Board in 2018. On October 10, he became co-CEO alongside Jennifer Morgan. Christian is Chief Operating Officer (COO) of SAP and leads the board area Intelligent Enterprise Group focusing on global business operations and IT services.

Jennifer Morgan, co-CEO (Co-Vorstandssprecher), 48 years old, is a graduate of James Madison University in Harrisonburg, Virginia, United States. She joined SAP in 2004 and became a member of the Executive Board in 2017. On October 10, she became co-CEO alongside Christian Klein. She leads SAP's Cloud Business Group including Intelligent Spend Group, Qualtrics as well as CX product engineering and product management. Prior to SAP, Jennifer Morgan served in various management roles at Siebel Systems and Accenture.

Adaire Fox-Martin, 55 years old, is a graduate of Trinity College in Ireland. She joined SAP in 2008 and became a member of the Executive Board in 2017. She leads Global Customer Operations, SAP's global commercial, partner and customer success organization. Prior to SAP, Adaire Fox-Martin served as the head of Public Sector for Asia Pacific Japan at Oracle Corporation.

**Michael Kleinemeier,** 62 years old, holds a degree in commercial management from the University of Paderborn, Germany. He first joined SAP in 1989 and became a member of the Executive Board in November 2015. He leads the SAP Digital Business Services

organization including global services delivery and regional field services

**Luka Mucic**, 48 years old, holds a degree in law from the University of Heidelberg, Germany, and a joint executive MBA from ESSEC, France, and Mannheim Business School, Germany. He joined SAP in 1996 and became Chief Financial Officer (CFO), and a member of the Executive Board in July 2014. He is responsible for finance and administration including investor relations, internal audit, data protection and privacy.

Jürgen Müller, 37 years old, holds a PhD in IT systems engineering from the Hasso Plattner Institute (HPI) for Software Engineering, University of Potsdam, Germany. He joined SAP in 2013 and became a member of the Executive Board in 2019. Jürgen is Chief Technology Officer (CTO) of SAP and leads the board area Technology and Innovation. He is responsible for the technology and innovation strategy, SAP HANA, SAP Cloud Platform, SAP Leonardo, and SAP Analytics. Before joining SAP, Jürgen was co-representative of Hasso Plattner's research chair at the HPI.

**Stefan Ries,** 53 years old, holds a master's degree in economics from the University of Constance, Germany. He first joined SAP in 2002 and became a member of the Executive Board in April 2016. He is Chief Human Resources Officer with global responsibility for Human Resources including HR strategy, business transformation, leadership development, and talent development. He also serves as Labor Relations Director.

**Thomas Saueressig,** 34 years old, holds a degree in Business Information Technology from the University of Cooperative Education in Mannheim, Germany, and a joint executive MBA from ESSEC, France, and Mannheim Business School, Germany. He joined SAP in 2004 and became a member of the Executive Board in 2019. Thomas leads the Board area SAP Product Engineering and has global responsibility for all SAP applications, product development and delivery as well as product management for SAP S/4HANA, supply chain, SME and industry solutions.

The members of the Executive Board of SAP SE as of December 31, 2019 that are members on other supervisory boards and comparable governing bodies of enterprises, other than SAP, in Germany and other countries, are set forth in  $Note\ (G.4)$  to our Consolidated Financial Statements. SAP SE has not entered into contracts with any member of the Executive Board that provide for benefits upon a termination of the employment of service of the member, apart from pensions, benefits payable in the event of an early termination of service, and abstention compensation for the postcontractual noncompete period.

To our knowledge, there are no family relationships among any of the Supervisory Board and Executive Board members.

#### **Compensation Report**

#### Compensation for Executive and Supervisory Board Members

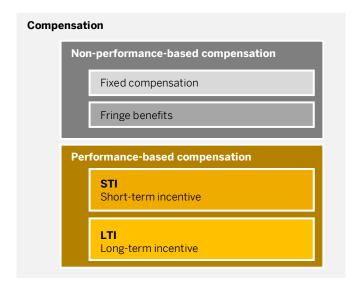
This compensation report describes the compensation system, outlines the criteria that apply to the compensation for Executive Board and Supervisory Board members for the year 2019, and discloses the amount of compensation. In addition, it discloses an outlook of the changes to the compensation system for the year 2020

### Compensation for Executive Board Members

#### Compensation System for 2019

The compensation for Executive Board members is intended to reflect the demanding role of Executive Board members leading a global company in a rapidly evolving sector. The compensation level is aimed to be competitive to support SAP in the global market for highly skilled executives, especially in the context of the software industry. It is our goal 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 As pictured below, the compensation contains performance-based elements and non-performance-based 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. This 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 SAP executives and non-executive SAP employees. The performance-based elements each correspond to a target achievement of 100% of all KPIs. The Supervisory Board reviews, assesses, and sets these compensation targets, in its first meeting of each fiscal year (February 20, 2019, for 2019). The Supervisory Board is of the opinion that this approach ensures that the compensation is appropriate.

The compensation system is designed to support the growth in value for the Company over the long term. The long-term incentive element therefore has significant weighting, making up about two-thirds of the Co-CEOs' 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 2019 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 12 equal installments in the Executive Board member's home currency<sup>1)</sup>.

#### 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, and tax gross-ups according to local conditions.

 $<sup>^{1)}\</sup>mbox{Home}$  currency is the currency of the Executive Board member's primary place of residence.

#### **Performance-Based Compensation**

Short-Term Incentive

# Financial KPIs 2019 100% 40% New cloud bookings (at constant currency) 35% Cloud and software revenue growth (non-IFRS, at constant currency) 25% Operating margin increase



#### STI compensation

STI target achievement (%) x STI target amount (€)

(non-IFRS, at constant currency)

The short-term, one-year performance-based compensation (Short-Term Incentive, STI) is determined based on a set of financial targets (KPIs).

For the STI 2019, the financial KPIs are: Constant currency new cloud bookings in 2019, year-over-year growth in non-IFRS constant currency cloud and software revenue in 2019, and non-IFRS constant currency operating margin in 2019. 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.

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

On February 19, 2020, the Supervisory Board assessed SAP's performance against the agreed targets and determined the amount of the STI 2019 for the entire Executive Board. This resulted in a target achievement of 82.4% (cloud and software revenue growth of 106.4%, operating margin increase of 130.8%, and new cloud bookings of 31.2%).

The STI compensation for 2019 will be paid out after the Annual General Meeting of Shareholders in May 2020. It is paid in the Executive Board member's home currency  $^{1)}$ . All Executive Board members are obliged to purchase SAP shares worth at least 5% of the actual payout amount in accordance with appropriate trading period regulations. These shares are subject to a three-year holding period.

### Long-Term Incentive The purpose of the

The purpose of the long-term, multi-year 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.

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 LTI 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 LTI target amount. The 2018 operating profit target achievement was 101.9%. Considering this, the Supervisory Board set the grant amount of the 2019 tranche at 101.9% of the contractual LTI 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 2019 tranche was February 20, 2019.

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 nonforfeitable.

 $<sup>^{1)}\</sup>mbox{Home}$  currency is the currency of the Executive Board member's primary place of residence.

#### **LTI Grant Process**

Supervisory Board determines grant amount for current financial year, based on operating profit target achievement (non-IFRS, at constant currency) set for the previous year,

#### 80% to 120%

of the target amount set in the Executive Board member's contract

### Grant amount is converted into PSUs and RSUs

resulting in

### 60% PSUs Performance Share

Performance Share Units

40%
RSUs
Retention
Share Units

#### **PSU** calculation

#### Payout after four years

Final number of PSUs and RSUs x payout price ( $\mathfrak{E}$ ) Cap of payout price = 300% of grant price

The payout price used for the settlement is the simple arithmetic mean of the XETRA closing prices of SAP stock 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 at the end of the vesting period. 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**

### 60% PSUs Originally granted

### SAP share price performance relative to Peer Group Index performance

100% = same performance of SAP share price and Peer Group Index

# Peer Group Index performs better than SAP share price

decreased by percentage points of outperformance of Peer Group Index

hurdle at 50% decrease

# SAP share price performs better than Peer Group Index

increased by percentage points of outperformance. If payout price is higher than grant price, percentage points are doubled

cap at 50% increase

## resulting in a Performance factor 0% 50% to 150% max. 150%

#### Final number of PSUs

Originally granted number x performance factor (%)

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:

SAP share price performs better than Peer Group Index					
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 1,000	1,160			

cap is triggered	reer Group maex,	
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 1,000	1,500

SAP share price performs much higher than Peer Group Index.

Peer Group Index performs better than SAP share price					
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 1,000	950			

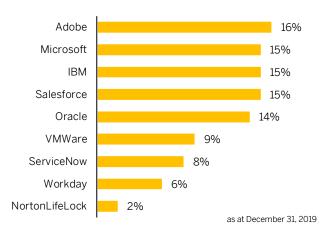
low hurdle triggered	snare price;	
SAP share price performance		-10%
Peer Group Index performance		+50%
Difference	-10% - (+50%)	-60%
Performance factor	-60% + 100%	40%
	Hurdle is 50%	0%
Final number of PSUs	0% x 1,000	0

Poor Croup Index performs better than SAD share price

The Peer Group Index currently includes the following major international competitors of SAP: Adobe, Microsoft, IBM, Salesforce, Oracle, VMWare, Service Now, Workday, and NortonLifeLock

(formerly Symantec). The Supervisory Board has defined this group based on internal and external recommendations and, if necessary, adjusts the group. In 2019, Tableau was delisted and therefore removed without replacement from the group. The Peer Group Index is calculated as a price index based on weighted market capitalization. The weighting is adjusted quarterly, applying a cap of 15%. Consequently, the weight of smaller, more volatile competitors is increased in relation to their size, resulting in a highly ambitious index. The index is calculated daily by Deutsche Börse Group and can be tracked under ISIN DE000A2BLEB9.

#### **Composition and Weighting of Peer Group Index**



#### LTI Forfeiture Rules

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>&</sup>lt;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).

The change from the previous RSU Milestone Plan to the LTI 2016 Plan required a transition rule in order to avoid unjustified disadvantages for Executive Board members. In the event an Executive Board member leaves the company, 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, an individual equalization amount was determined for Executive Board members who participated in the RSU Milestone Plan.

The equalization amount has been 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:



<sup>2)</sup> As defined in the individual Executive Board members' contracts; this is not equal to the companies listed in the Peer Group Index.

3) For the definition, see the Early End-of-Service Undertakings section.

#### **Clawback Provisions**

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 347% (Co-CEO) and 317% (Executive Board member other than Co-CEO) of the total target compensation of the Executive Board members who were employed at year end. Due to the change during the year, we have annualized the compensation for our calculation. 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 140%.
- The maximum possible payout amount for the LTI tranche is 468% of the contractual target amount.

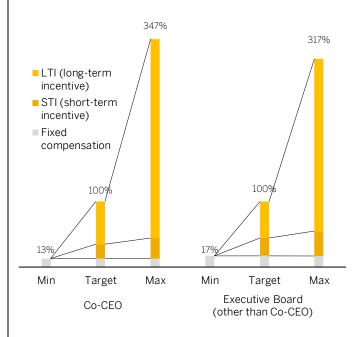
The maximum possible payout amount of the LTI is reached if all of the following conditions are cumulatively met:

- 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 €117 million in 2023, the shareholders would also benefit through the strong increase in market capitalization, which would be at least €200 billion from 2019 to 2023.

The following graphic illustrates the relation of the fixed and performance-based compensation elements in the Executive Board members' target compensation for 2019 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.

#### Compensation Scheme 2019



### 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 2015 to 2018 were already paid out.

#### STI Total Target Achievement

Percentage	2019	2018	2017	2016	2015
	82.4	93.0	88.2	104.4	147.5

The relation between the LTI target amounts for the 2016 to 2019 tranches and the theoretical payout amounts are based on SAP's share price at year end. The 2015 tranche discloses the relation between the respective target amount and the actual payout amount in May 2019.

Relation Between Target Amount and Payout Amount of the LTI

Percentage			LTI 2016 Plan		
	2019 Tranche <sup>1)</sup>	2018 Tranche <sup>1)</sup>	2017 Tranche <sup>1)</sup>	2016 Tranche <sup>1)</sup>	2015 Tranche <sup>2)</sup>
12/31/2019	156.6	126.4	110.5	76.8	233.8
12/31/2018	NA	90.9	82.6	55.5	233.8

 $<sup>^{\</sup>mbox{\tiny 1)}}$  Consideration of theoretical payout amounts based on SAP's share price at year end

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

#### Changes to Compensation System for 2020

#### General

For 2020 and beyond, the Supervisory Board established changes to the STI and LTI to align compensation to support SAP's strategy, including business transformation and medium-term prospects. The changes were based on analysis of market best practice and feedback from investors.

#### **Short-Term Incentive**

- Introduction of sustainability targets (sustainability KPIs) with a
  total weighting of 20% in addition to the financial targets
  (financial KPIs). The sustainability KPIs are: Customer Net
  Promoter Score, which measures SAP's customer loyalty;
  Employee Engagement Index, which measures SAP's employee
  commitment, pride, and loyalty; and Carbon Impact, which
  measures SAP's greenhouse gas emissions.
- Replacement of the financial KPI new cloud bookings by current cloud backlog, which includes new contracts as well as renewals of existing contracts and thus reflects cloud growth more holistically than the cloud bookings metric.
- Limitation of the Supervisory Board's discretion to adjust the performance-based compensation for the STI before payout upwards or downwards in the interest of SAP for cases of extraordinary, unforeseeable events, to a range of +/-20%.

#### **Financial** Sustainability **KPIs 2020 KPIs 2020 Current cloud Customer Net** backlog **Promoter Score** (non-IFRS<sup>1)</sup>, at (NPS) constant currency) **Employee Cloud and Engagement Index** software revenue growth 6.67% Carbon Impact (non-IFRS1), at (greenhouse gas constant currency) emissions in kt CO<sub>2</sub>) **Operating margin** increase (non-IFRS1), at constant currency)

# Target achievement 0% if weighted achievement is below a 75% hurdle 0% 75% to 140%

#### STI compensation

STI target achievement (%) x STI target amount ( $\mathfrak{t}$ )

Each underlying KPI includes a hurdle and a cap in addition to the overall hurdle of 75% and the overall cap of 140%. %. In the event

that the hurdle for the individual KPIs is missed and results in the weighted target achievement also falling below the overall hurdle of 75%, the individual hurdle for the respective KPI will be ignored.

#### **Long-Term Incentive**

The Supervisory Board introduced a new long-term multi-year performance-based compensation plan effective from 2020 and onwards: the SAP Long Term Incentive Program 2020 (LTI 2020).

The LTI 2020 reflects SAP's strategy, rewards the development of SAP's total shareholder return (TSR) in comparison to the market, and has a retention element. It is a financially rewarding instrument for attracting and retaining SAP's Executive Board members, who play a key role in increasing the earnings power and in enhancing the value of SAP over the long term.

The major differences in the LTI 2020 compared to the previous LTI plan are as follows:

- The discretion element in determining the grant amount has been eliminated. Therefore, the grant amount is the contractually agreed target amount.
- SAP's performance of the Market Performance Share Units (MSUs) is now measured based on total shareholder return (previous plan: share price) and compared against the NASDAQ-100 Index (previous plan: SAP Peer Group Index) over three years (previous plan: four years).
- The achievement of financial targets is rewarded with Financial Performance Share Units (FSUs) with a performance period of three years. The financial targets are set in line with SAP's communicated mid-term ambition for 2023. (previous plan: no FSUs).
- The RSU component has been reduced to 33.3% (previous plan: 40%).
- The payout will include the share price as well as dividends (previous plan: only share price).
- The payout is capped at 200% of the grant price (previous plan: 300%).
- In case of death or disability, the unearned grant will vest in full according to the payout schedule (previous plan: forfeits on a pro rata temporis basis).
- The Supervisory Board limited the extent of the discretion to adjust the performance-based compensation for the LTI before payout upwards or downwards in the interest of SAP for cases of extraordinary, unforeseeable events, to a range of +/-10% (previous plan: no limitation).

 $<sup>^{1)}</sup>$  Based on SAP's non-IFRS metrics as defined for use in SAP's 2019 full year external financial reporting

#### **LTI Grant Process**

## Grant amount is converted into Share Units

= grant amount (€) ÷ grant price (€)

1/3 MSUs
Market
Performance
Share Units

1/3 FSUs
Financial
Performance
Share Units

1/3 RSUs
Retention
Share Units

MSU calculation

FSU calculation

#### Payout after four years

Final number of all Share Units x (payout price ( $\mathfrak{C}$ ) + dividend amount per share ( $\mathfrak{C}$ )) Cap of payout per share = 200% of grant price

The vesting period of four years remains unchanged. In connection with Michael Kleinemeier's contract extension, a vesting period of one year has been agreed for his 2020 tranche.

#### **MSU Calculation**

#### 1/3 MSUs

#### **Originally granted**

## TSR performance: SAP relative to Index

100% = SAP is ranked to the median of the index companies

#### Index TSR performs better than SAP TSR

SAP is ranked less than the median of the index companies

#### SAP TSR performs better than Index TSR

SAP is ranked better than the median of the index companies. Performance factor is only higher than 100% when SAP TSR performance is positive.



#### Final number of MSUs after three years

Originally granted number x market performance factor (%)

SAP's total shareholder return (TSR) performance is measured over the three-year measurement period and ranked in relation to the TSR performance of the companies of the NASDAQ-100 Index. TSR means the performance of the share combining share price development and granted and reinvested dividends. The market performance factor has a cap at 150% at the 75th percentile (P-75) and a hurdle of 50% at 25th percentile (P-25), below the hurdle no MSUs are considered.

The following examples of the MSU calculation illustrate possible outcomes assuming 1,000 MSUs granted:

SAP TSR performs better than TS triggered	R of NASDAQ-100 companies;	cap is
SAP TSR performance		+18%
Performance factor	80th percentile	160%
	Cap 75th percentile	150%
Final number of MSUs	150% x 1,000	1,500
SAP TSR performs better than TS downwards market trend	R of NASDAQ-100 companies;	in a
SAP TSR performance		-5%
Performance factor	55th percentile	110%
	Cap positive performance	100%
Final number of MSUs	100% x 1.000	1,000
TSR of NASDAQ-100 companies p hurdle is triggered	erform better than SAP TSR; Ic	w
SAP TSR performance		-5%
Performance factor	20th percentile	40%
	Hurdle 25th percentile	0%
Final number of MSUs	0% x 1,000	0

#### **FSU Calculation**

#### 1/3 FSUs

#### **Originally granted**

#### SAP's financial target achievement

100% = SAP achieves 100% of the three equally-weighted financial targets

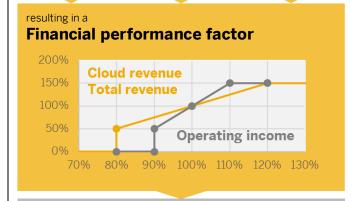
Cloud revenue

(non-IFRS<sup>1)</sup>, at constant currency) **Total** revenue (non-IFRS1), at

constant currency

constant currency)

**Operating** income (non-IFRS1), at



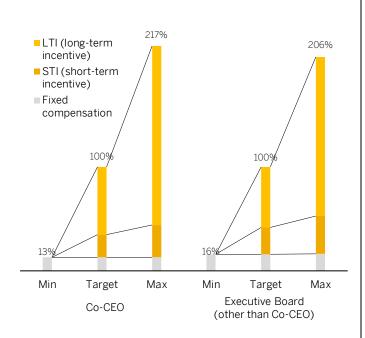
### Final number of FSUs after three years

Originally granted number x financial performance factor (%)

The final number of FSUs changes depending on SAP's performance against the financial KPI targets over the entire threeyear performance period. The financial KPIs are derived from SAP's communicated mid-term ambition for 2023. Cloud revenue and total revenue have a cap of 120% and a hurdle of 80% target achievement, while operating income has a cap of 110% and a hurdle of 90% target achievement.

<sup>1)</sup> Based on SAP's non-IFRS metrics as defined for use in SAP's 2019 full-year external financial reporting

#### Compensation Scheme 2020



#### Amount of Compensation for 2019

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				(Co-CE	Chris O from 10/	tian Klein 10/2019)	Jennifer Mor (Co-CEO from 10/10/20					
			Benefits Granted		Benefits	Received			Benefit	s Granted	Benefits	Received
	2019	2019 (Min)	2019 (Max)	2018	2019	2018	2019 <sup>1)</sup>	2019 (Min)	2019 (Max)	20181)	2019 <sup>1)</sup>	20181)
Fixed compensation	789.9	789.9	789.9	700.0	789.9	700.0	762.1	762.1	762.1	634.3	762.1	634.3
Fringe benefits <sup>2)</sup>	14.8	14.8	14.8	13.1	14.8	13.1	125.8	125.8	125.8	128.4	125.8	128.4
Total	804.7	804.7	804.7	713.1	804.7	713.1	887.9	887.9	887.9	762.7	887.9	762.7
One-year variable compensation	1,301.8	0	1,822.5	1,125.8	1,046.9		1,251.5	0	1,752.1	1,052.0	978.4	594.6
Multi-year variable compensation												
LTI 2016 Plan	3,407.9	0	12,260.1	1,793.2			3,731.2	0	13,424.8	2,128.8		
RSU Milestone Plan 2015												
Total	5,514.4	804.7	14,887.3	3,632.1	1,851.6	713.1	5,870.5	887.9	16,064.8	3,943.5	1,866.2	1,357.3
Service cost							104.6	104.6	104.6	51.4	104.6	51.4
Total according to GCGC	5,514.4	804.7	14,887.3	3,632.1	1,851.6	713.1	5,975.1	992.5	16,169.4	3,994.9	1,970.8	1,408.7

#### German Corporate Governance Code

€thousands		Memb	per of the Ex	xecutive Bo		ert Enslin 1/5/2019)				Member of		ox-Martin ive Board	
			Benefit	s Granted	d Benefits Received				Benefit	Benefits Granted		Benefits Received	
	2019¹)	2019 (Min)	2019 (Max)	20181)	20191)	20181)	2019	2019 (Min)	2019 (Max)	2018	2019	2018	
Fixed compensation	219.7	219.7	219.7	800.2	219.7	800.2	700.0	700.0	700.0	700.0	700.0	700.0	
Fringe benefits <sup>2)</sup>	202.1	202.1	202.1	105.1	202.1	105.1	31.0	31.0	31.0	54.6	31.0	54.6	
Total	421.8	421.8	421.8	905.3	421.8	905.3	731.0	731.0	731.0	754.6	731.0	754.6	
One-year variable compensation	1,352.8	0	1,893.9	1,327.3	1,234.4	1,117.7	1,125.8	0	1,576.1	1,125.8	1,046.9	666.5	
Multi-year variable compensation													
LTI 2016 Plan	2,545.6	0	10,062.8	2,270.3			2,823.1	0	10,873.8	2,128.8			
RSU Milestone Plan 2015					3,628.6	1,248.8							
Total	4,320.2	421.8	12,378.5	4,502.9	5,284.8	3,271.8	4,679.9	731.0	13,180.9	4,009.2	1,777.9	1,421.1	
Service cost	177.5	177.5	177.5	235.8	177.5	235.8							
Total according to GCGC	4,497.7	599.3	12,556.0	4,738.7	5,462.3	3,507.6	4,679.9	731.0	13,180.9	4,009.2	1,777.9	1,421.1	

€thousands				Member of	Michael Kl		Bernd Leukert Member of the Executive Board (until 3/31/2019)					
			Benefit	s Granted	Granted Benefits Received					s Granted	Benefits Received	
	2019	2019 (Min)	2019 (Max)	2018	2019	2018	2019	2019 (Min)	2019 (Max)	2018	2019	2018
Fixed compensation	700.0	700.0	700.0	700.0	700.0	700.0	175.0	175.0	175.0	700.0	175.0	700.0
Fringe benefits <sup>2)</sup>	29.0	29.0	29.0	29.1	29.0	29.1	2.3	2.3	2.3	10.3	2.3	10.3
Total	729.0	729.0	729.0	729.1	729.0	729.1	177.3	177.3	177.3	710.3	177.3	710.3
One-year variable compensation	1,125.8	0	1,576.1	1,125.8	1,046.9	992.9	1,125.8	0	1,576.1	1,125.8	1,046.9	992.9
Multi-year variable compensation												
LTI 2016 Plan	2,387.0	0	9,435.6	2,128.8			2,688.6	0	10,627.9	2,397.7		
RSU Milestone Plan 2015					473.8						3,773.2	1,248.8
Total	4,241.7	729.0	11,740.6	3,983.7	2,249.7	1,722.0	3,991.6	177.3	12,381.3	4,233.8	4,997.4	2,952.0
Service cost												
Total according to GCGC	4,241.7	729.0	11,740.6	3,983.7	2,249.7	1,722.0	3,991.6	177.3	12,381.3	4,233.8	4,997.4	2,952.0

#### German Corporate Governance Code

€ thousands		memb	er of the Ex	Bill McDermott Luka Mucic (CEO until 10/10/2019, Member of the Executive Board r of the Executive Board until 11/15/2019)						CEO until 10/10/2019, Member of the						
			Benefit	s Granted	Benefits Received			Benefit	s Granted Benefits		Received					
	20191)	2019 (Min)	2019 (Max)	20181)	2019¹)	20181)	2019	2019 (Min)	2019 (Max)	2018	2019	2018				
Fixed compensation	1,212.0	1,212.0	1,212.0	1,314.7	1,212.0	1,314.7	700.0	700.0	700.0	700.0	700.0	700.0				
Fringe benefits <sup>2)</sup>	1,123.6	1,123.6	1,123.6	794.7	1,123.6	794.7	12.0	12.0	12.0	11.8	12.0	11.8				
Total	2,335.6	2,335.6	2,335.6	2,109.4	2,335.6	2,109.4	712.0	712.0	712.0	711.8	712.0	711.8				
One-year variable compensation	2,235.2	0	3,129.3	2,193.0	2,039.5	1,846.7	1,125.8	0	1,576.1	1,125.8	1,046.9	992.9				
Multi-year variable compensation																
LTI 2016 Plan	7,710.6	0	30,479.5	6,876.6			2,387.0	0	9,435.6	2,128.8						
RSU Milestone Plan 2015					10,315.3	5,251.0					3,732.5	949.5				
Total	12,281.3	2,335.6	35,944.4	11,179.0	14,690.4	9,207.1	4,224.7	712.0	11,723.6	3,966.4	5,491.4	2,654.2				
Service cost	486.5	486.5	486.5	568.3	486.5	568.3										
Total according to GCGC	12,767.8	2,822.1	36,430.9	11,747.3	15,176.9	9,775.4	4,224.7	712.0	11,723.6	3,966.4	5,491.4	2,654.2				

€ thousands		Memi	ber of the E	xecutive Bo	Jürg ard (from 1	en Müller /1/2019)	Stefan Ries Member of the Executive Board					
			Benefits Granted		Benefits	Received			Benefits Granted		Benefits Received	
	2019	2019 (Min)	2019 (Max)	2018	2019	2018	2019	2019 (Min)	2019 (Max)	2018	2019	2018
Fixed compensation	700.0	700.0	700.0		700.0		700.0	700.0	700.0	700.0	700.0	700.0
Fringe benefits <sup>2)</sup>	13.5	13.5	13.5		13.5		21.8	21.8	21.8	21.9	21.8	21.9
Total	713.5	713.5	713.5	0	713.5	0	721.8	721.8	721.8	721.9	721.8	721.9
One-year variable compensation	1,125.8	0	1,576.1				1,125.8	0	1,576.1	1,125.8	1,046.9	992.9
Multi-year variable compensation												
LTI 2016 Plan	2,185.8	0	8,640.5				2,010.7	0	7,948.3	1,793.2		
RSU Milestone Plan 2015												
Total	4,025.1	713.5	10,930.1	0	713.5	0	3,858.3	721.8	10,246.2	3,640.9	1,768.7	1,714.8
Service cost												
Total according to GCGC	4,025.1	713.5	10,930.1	0	713.5	0	3,858.3	721.8	10,246.2	3,640.9	1,768.7	1,714.8

#### **German Corporate Governance Code**

€ thousands		Mer	nber of the E	Executive Bo		Saueressig 1/1/2019)			Total Execu	utive Board
			Benefit	s Granted	Benefits	Received	Benefits	Granted	Benefits Received	
	2019	2019 (Min)	2019 (Max)	2018	2019	2018	2019	2018	2019	2018
Fixed compensation	116.7	116.7	116.7		116.7		6,775.3	6,949.2	6,775.3	6,949.2
Fringe benefits <sup>2)</sup>	2.1	2.1	2.1		2.1		1,578.0	1,169.0	1,578.0	1,169.0
Total	118.8	118.8	118.8	0	118.8	0	8,353.2	8,118.2	8,353.3	8,118.2
One-year variable compensation	188.1	0	263.4				13,083.9	11,327.1	10,534.0	8,197.1
Multi-year variable compensation										
LTI 2016 Plan	515.2	0	1,444.0				32,392.7	23,646.2		
RSU Milestone Plan 2015									21,923.4	8,698.1
Total	822.1	118.8	1,826.2	0	118.8	0	53,829.8	43,091.5	40,810.6	25,013.4
Service cost							768.6	855.5	768.6	855.5
Total according to GCGC	822.1	118.8	1,826.2	0	118.8	0	54,598.4	43,947.0	41,579.2	25,868.9

<sup>&</sup>lt;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.

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

€ thousands	Chi	ristian Klein	Jennifer Morgan		R	obert Enslin	Adaire	Fox-Martin
-	2019	2018	2019	2018	2019	2018	2019	2018
Total according to GCGC	5,514.4	3,632.1	5,975.1	3,994.9	4,497.7	4,738.7	4,679.9	4,009.2
Less granted annual variable compensation	-1,301.8	-1,125.8	-1,251.5	-1,052.0	-1,352.8	-1,327.3	-1,125.8	-1,125.8
Plus allocated actual annual variable compensation	1,072.7	1,046.9	1,031.2	978.4	290.1	1,234.4	927.6	1,046.9
Less service cost			-104.6	-51.4	-177.5	-235.8		
Total compensation	5,285.3	3,553.2	5,650.2	3,869.9	3,257.5	4,410.0	4,481.7	3,930.3
€ thousands	Michael	Kleinemeier	Ве	rnd Leukert	Bill	McDermott		Luka Mucic
	2019	2018	2019	2018	2019	2018	2019	2018
Total according to GCGC	4,241.7	3,983.7	3,991.6	4,233.8	12,767.8	11,747.3	4,224.7	3,966.4
Less granted annual variable	<b>4,241.7</b> -1,125.8	<b>3,983.7</b> -1,125.8	<b>3,991.6</b> -1,125.8	<b>4,233.8</b> -1,125.8	<b>12,767.8</b> -2,235.2	<b>11,747.3</b> -2,193.0	<b>4,224.7</b> -1,125.8	<b>3,966.4</b> -1,125.8
Total according to GCGC  Less granted annual variable compensation  Plus allocated actual annual variable compensation				<mark></mark>			······································	
Less granted annual variable compensation Plus allocated actual annual	-1,125.8	-1,125.8	-1,125.8	-1,125.8	-2,235.2	-2,193.0	-1,125.8	-1,125.8

<sup>&</sup>lt;sup>2)</sup> Insurance contributions, the private use of company cars and aircraft, benefits in kind, compensation for unused vacation, expenses for maintenance of two households, reimbursement of fees for lawyers, the preparation of tax returns, and tax gross-ups according to local conditions. The fringe benefits of Bill McDermott mainly consist of expenses for maintenance of two households, the preparation of tax returns, and tax gross-ups according to local conditions.

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

€thousands	Jürgen Müller		Stefan Ries		Thom	nas Saueressig	Total Executive Board		
	2019	2018	2019	2018	2019	2018	2019	2018	
Total according to GCGC	4,025.1	0	3,858.3	3,640.9	822.1	0	54,598.4	43,947.0	
Less granted annual variable compensation	-1,125.8		-1,125.8	-1,125.8	-188.1		-13,083.9	-11,327.1	
Plus allocated actual annual variable compensation	927.6		927.6	1,046.9	155.0		9,025.4	10,534.0	
Less service cost							-768.6	-855.5	
Total compensation	3,826.9	0	3,660.1	3,562.0	788.9	0	49,771.3	42,298.4	

#### Vertical Pay Ratio

The vertical pay ratio compares the total target compensation granted to the Co-CEOs and the Executive Board members other than Co-CEO with the total target compensation granted to the Executives and all employees collectively who were employed at year end. Due to the changes on the Executive Board during the year, we have annualized the compensation for our calculation. In order to ensure comparability, 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).

			2019
Ratio		Co-CEO	Executive Board (Other Than Co- CEO)
•	Average Annual Compensation (in € thousands)	8,604.5	4,196.4
Executives	915	9	5
Employees including Executives	103	84	41

			2018
Ratio		CEO	Executive Board (Other Than CEO)
	Average Annual Compensation (in € thousands)	10,384.3	3,942.3
Executives	906	11	4
Employees including Executives	99	105	40
			2017
Ratio		Executive Board (Other Than CEO)	
	Average Annual Compensation (in € thousands)	11,209.2	3,880.0
Executives	923	12	4
Employees including Executives	101	111	39
			2016
Ratio		CEO	Executive Board (Other Than CEO)
	Average Annual Compensation (in € thousands)	11,785.4	4,090.8
Executives	823	14	5
Employees including Executives	99	119	41

#### **Share-Based Payment Information Relating to Long-Term Incentives**

Members of the Executive Board received, hold, or held share units issued to them under the LTI 2016 Plan and hold or held RSUs issued to them under the RSU Milestone Plan 2015. For more

information about the terms and details of these programs, see the Notes to the Consolidated Financial Statements, Note~(B.3).

#### Grants Under the LTI 2016 Plan

	Year Granted	Total Share Units	RSUs (40%)	PSUs (60%)		Fair Value a	t Time of Grant
		Quantity	Quantity	Quantity	€ per RSUs	€ per PSUs	€ thousands
Christian Klein (Co-CEO from 10/10/2019)	2019 1)	7,797	3,119	4,678	117.39	139.97	1,021
(CO-CEO from 10/10/2019)	2019	26,047	10,419	15,628	88.54	93.71	2,387
	2018	22,385	8,954	13,431	79.01	80.84	1,793
Jennifer Morgan (Co-CEO from 10/10/2019)	2019 1)	6,378	2,552	3,826	117.39	139.97	835
(CO-CEO IIOIII 10/10/2019)	2019 2)	4,634	1,853	2,781	101.98	115.10	509
	2019	26,047	10,419	15,628	88.54	93.71	2,387
	2018	26,574	10,630	15,944	79.01	80.84	2,129
Robert Enslin (until 4/5/2019)	2019	27,778	11,111	16,667	88.54	93.71	2,546
(until 47572019)	2018	28,340	11,336	17,004	79.01	80.84	2,270
Adaire Fox-Martin	2019 <sup>2)</sup>	3,970	1,588	2,382	101.98	115.10	436
	2019	26,047	10,419	15,628	88.54	93.71	2,387
	2018	26,574	10,630	15,944	79.01	80.84	2,129
Michael Kleinemeier	2019	26,047	10,419	15,628	88.54	93.71	2,387
	2018	26,574	10,630	15,944	79.01	80.84	2,129
Bernd Leukert (until 3/31/2019)	2019	29,338	11,735	17,603	88.54	93.71	2,689
(until 3/ 31/ 2019)	2018	29,931	11,972	17,959	79.01	80.84	2,398
Bill McDermott (CEO until 10/10/2019, Executive	2019	84,138	33,655	50,483	88.54	93.71	7,711
Board member until 11/15/2019)	2018	85,841	34,336	51,505	79.01	80.84	6,877
Luka Mucic	2019	26,047	10,419	15,628	88.54	93.71	2,387
	2018	26,574	10,630	15,944	79.01	80.84	2,129
Jürgen Müller (from 1/1/2019)	2019	23,852	9,541	14,311	88.54	93.71	2,186
Stefan Ries	2019	21,941	8,776	13,165	88.54	93.71	2,011
	2018	22,385	8,954	13,431	79.01	80.84	1,793
Thomas Saueressig (from 11/1/2019)	2019	3,986	1,594	2,392	114.67	138.96	515
Total	2019	344,047	137,619	206,428			32,393
	2018	295,178	118,072	177,106			23,646

<sup>&</sup>lt;sup>1)</sup> Additional grant due to appointment as Co-CEO <sup>2)</sup> Additional grant due to extension of responsibilities

#### **Executive Board Members' Holdings**

#### LTI 2016 Plan

Quantity of Share Units	Year	Holding on		Granted	Forfeited <sup>1)</sup>	Balanced PSUs <sup>2)</sup>	Holding on
	Granted	1/1/2019 -	RSUs (40%)	PSUs (60%)			12/31/2019
Christian Klein (Co-CEO from	2019	0	13,538	20,306	0	0	33,844
10/10/2019)	2018	22,385	0	0	0	0	22,385
Jennifer Morgan (Co-CEO from 10/10/2019)	2019	0	14,824	22,235	0	0	37,059
10/10/2019)	2018	26,574	0	0	0	0	26,574
	2017	18,539	0	0	0	0	18,539
Robert Enslin (until 4/5/2019)	2019	0	11,111	16,667	25,972	14,809	16,615
	2018	28,340	0	0	19,417	0	8,923
	2017	29,454	0	0	12,822	0	16,632
	2016	40,417	0	0	7,470	0	32,947
Adaire Fox-Martin	2019	0	12,007	18,010	0	0	30,017
	2018	26,574	0	0	0	0	26,574
	2017	18,539	0	0	0	0	18,539
Michael Kleinemeier	2019	0	10,419	15,628	0	0	26,047
	2018	26,574	0	0	0	0	26,574
	2017	27,619	0	0	0	0	27,619
	2016	37,898	0	0	0	0	37,898
Bernd Leukert (until 3/31/2019) <sup>3)</sup>	2019	0	11,735	17,603	12,852	10,443	26,929
	2018	29,931	0	0	5,634	3,381	27,678
	2017	31,109	0	0	0	0	31,109
	2016	42,687	0	0	0	0	42,687
Bill McDermott (CEO until	2019	0	33,655	50,483	65,767	35,857	54,228
10/10/2019, Executive Board member until 11/15/2019)	2018	85,841	0	0	45,653	0	40,188
	2017	89,217	0	0	25,159	0	64,058
	2016	122,423	0	0	3,855	0	118,568
Luka Mucic	2019	0	10,419	15,628	0	0	26,047
	2018	26,574	0	0	0	0	26,574
	2017	27,619	0	0	0	0	27,619
,	2016	37,898	0	0	0	0	37,898
Jürgen Müller (from 1/1/2019)	2019	0	9,541	14,311	0	0	23,852
Stefan Ries	2019	0	8,776	13,165	0	0	21,941
	2018	22,385	0	0	0	0	22,385
	2017	23,265	0	0	0	0	23,265
•	2016	23,987	0	0	0	0	23,987
Thomas Saueressig (from 11/1/2019)	2019	0	1,594	2,392	0	0	3,986
Total  1) Forfeiture according to leaver rule		865,849	137,619	206,428	224,601	64,490	1,049,785

The Share Units granted in 2019 have a remaining term of 3.1 years, the share units granted in 2018 have a remaining term of  $2.1\,\mbox{years},$  the share units granted in 2017 have a remaining term of  $1.1\,\mbox{years},$  and the share units granted in 2016 have a remaining term of 0.1 years.

<sup>&</sup>lt;sup>1)</sup>Forfeiture according to leaver rules <sup>2)</sup>To balance disadvantages from leaver rules under the LTI 2016 Plan <sup>3)</sup>Forfeiture under the leaver rules assuming termination as at 3/31/2021

#### **RSU Milestone Plan 2015**

Quantity of RSUs	Year Granted	Holding on 1/1/2019	Exercised	Holding on 12/31/2019
Robert Enslin (until 4/5/2019)	2015	39,985	39,985	0
Michael Kleinemeier	2015	5,221	5,221	0
Bernd Leukert (until 3/31/2019)	2015	41,578	41,578	0
Bill McDermott (CEO until 10/10/2019, Executive Board member until 11/15/2019)	2015	113,667	113,667	0
Luka Mucic	2015	41,130	41,130	0
Total		241,581	241,581	0

The table above shows the Executive Board members' holdings issued to them under the RSU Milestone Plan 2015. The plan was 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 plan consisted of four plan tranches which were issued with respect to the calendar years 2012 through 2015.

#### Total Expense for Share-Based Payment

	_	
€thousands	2019	2018
Christian Klein (Co-CEO from 10/10/2019)	1,925	442.2
Jennifer Morgan (Co-CEO from 10/10/2019)	2,894	796.1
Robert Enslin (until 4/5/2019)	3,480	727.0
Adaire Fox-Martin	2,667	796.1
Michael Kleinemeier	3,253	914.2
Bernd Leukert (until 3/31/2019)	8,606	775.2
Bill McDermott (CEO until 10/10/2019, Executive Board member until 11/15/2019)	14,689	2,155.8
Luka Mucic	3,391	675.8
Jürgen Müller (from 1/1/2019)	768	-
Stefan Ries	2,646	772.0
Thomas Saueressig (from 11/1/2019)	128	-
Total	44,446.5	8,054.4

Total expense for the share-based payment plans of Executive Board members was determined in accordance with IFRS 2 (Share-Based Payments) and consists exclusively of obligations arising from Executive Board activities.

#### **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, Christian Klein, Michael Kleinemeier, Bernd Leukert, Luka Mucic, Jürgen Müller, Stefan Ries, and Thomas Saueressig 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 a 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. The rights were partially earned before Bill McDermott became a member of the SAP Executive Board.
- SAP made contributions to a third-party pension plan for Bill McDermott, Robert Enslin, and Jennifer Morgan, as disclosed in the tables 'German Corporate Governance Code'. 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 Net Defined Benefit Liability (Asset) to Executive Board Members

€ thousands	Christian Klein (Co-CEO from 10/10/2019) <sup>1)</sup>	Adaire Fox- Martin <sup>1)</sup>	Michael Kleinemeier <sup>1)</sup>	Bernd Leukert (until 3/31/2019) <sup>1)</sup>	Bill McDermott (CEO until 10/10/2019, Executive Board Member until 11/15/2019)	Luka Mucic <sup>1)</sup>	Jürgen Müller (from 1/1/2019) <sup>1)</sup>	Stefan Ries 1)	Thomas Saueressig (from 11/1/2019) <sup>1)</sup>	Total
DBO 1/1/2018	-	93.5	271.9	584.5	1,310.5	585.9	-	344.6	-	3,190.9
Less plan assets market value 1/1/2018	_	100.7	345.9	540.9	-	490.7	_	275.8	_	1,754.0
Net defined benefit liability (asset) 1/1/2018	-	-7.2	-74.0	43.6	1,310.5	95.2	-	68.8	-	1,436.9
DBO change in 2018	112.8	89.9	66.7	-16.1	106.2	-42.1	-	-67.2	-	250.2
Plan assets change in 2018	141.3	156.3	161.7	153.9	-	145.0	_	143.5	_	901.7
DBO 12/31/2018	112.8	183.4	338.6	568.4	1,416.7	543.8	_	277.4	-	3,441.1
Less plan assets market value 12/31/2018	141.3	257.0	507.6	694.8	_	635.7	_	419.3	_	2,655.7
Net defined benefit liability (asset) 12/31/2018	-28.5	-73.6	-169.0	-126.4	1,416.7	-91.9	-	-141.9	-	785.4
DBO change in 2019	244.7	207.6	205.9	416.5	63.3	475.0	149.7	251.4	41.9	2,056.0
Plan assets change in 2019	145.9	160.6	171.2	363.0	-	147.2	-	144.9	-	1,132.8
DBO 12/31/2019	357.5	391.0	544.5	984.9	1,480.0	1,018.8	149.7	528.8	41.9	5,497.1
Less plan assets market value 12/31/2019	287.2	417.6	678.8	1,057.8	-	782.9	-	564.2	-	3,788.5
Net defined benefit liability (asset) 12/31/2019	70.3	-26.6	-134.3	-72.9	1,480.0	235.9	149.7	-35.4	41.9	1,708.6

<sup>&</sup>lt;sup>1)</sup> The values shown here only reflect the pension entitlements that Christian Klein, Adaire Fox-Martin, Michael Kleinemeier, Bernd Leukert, Luka Mucic, Jürgen Müller, Stefan Ries and Thomas Saueressig 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 12/31/2019	Vested on 12/31/2018
Christian Klein (Co-CEO from 10/11/2019)	8.2	4.1
Adaire Fox-Martin	11.8	7.3
Michael Kleinemeier	20.0	14.8
Bernd Leukert (until 3/31/2019)	34.7	24.6
Bill McDermott (CEO until 10/10/2019, Executive Board Member until 11/15/2019) <sup>1)</sup>	90.8	105.1
Luka Mucic	27.6	23.2
Jürgen Müller (from 1/1/2019)	4.8	-
Stefan Ries	16.8	12.6
Thomas Saueressig (from 11/1/2019)	0.2	-

<sup>&</sup>lt;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 2019.

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>
Christian Klein (Co-CEO from 10/10/2019)	4/30/2025	2,607
Jennifer Morgan (Co-CEO from 10/10/2019)	4/30/2025	2,787
Adaire Fox-Martin	4/30/2025	2,211
Michael Kleinemeier	12/31/2020	2,024
Luka Mucic	3/31/2021	2,016
Jürgen Müller (from 1/1/2019)	12/31/2021	1,915
Stefan Ries	3/31/2024	1,817
Thomas Saueressig (from 11/1/2019)	10/31/2022	394
Total		15,771

<sup>1)</sup>For the purpose of this calculation, the following discount rates have been applied: Christian Klein 0.26%; Jennifer Morgan 0.26%; Adaire Fox. Martin 0.26%; Michael Kleinemeier – 0.13%; Luka Mucic – 0.12%; Jürgen Müller – 0.05%; Stefan Ries 0.17%; Thomas Saueressig 0.03%.

#### 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. Members are not entitled to that severance payment if they have not served SAP as a member of the Executive Board for at least one year or if they leave SAP SE for reasons for

which they are responsible. Upon the appointment of Jürgen Müller and Thomas Saueressig to the Executive Board, the Supervisory Board abstained from the waiting period of one year in consideration of their long-term successful tenures 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-compete period as described above is also payable on early contract termination.

## Payments to Executive Board Members Resigning in 2019

Robert Enslin resigned from his position as Executive Board member on his own accord with effect from April 5, 2019, therefore no severance payment was made. The STI 2019 and the granted rights under the LTI 2016 Plan were handled according to plan terms. The postcontractual non-compete provision was canceled without compensation.

Bernd Leukert reached a mutual agreement with the Supervisory Board to end his employment at SAP with immediate effect on March 31, 2019. He received the following payments in connection with his retirement for the remainder of the term of appointment until March 31, 2021:

- Discounted severance payment equaling the appropriately discounted target salary (base salary plus target STI) totaling €3,646,393.
- Granted rights under the LTI 2016 Plan were handled according to plan terms with respect to the performance criteria and the payout schedule.
- As compensation for the LTI tranches 2020 and 2021 which are not granted due to early termination, a one-time gross payment of €999.412.
- For a period of 24 months, monthly abstention compensation for the postcontractual non-compete period totaling €4,723,398.
- One-time payment to his retirement account in the amount of €336,720.

Bill McDermott resigned from his position as Executive Board member on his own accord with effect from November 15, 2019, therefore no severance payment was made. The STI 2019 and the granted rights under the LTI 2016 Plan were handled according to plan terms. Negotiations regarding abstention compensation for post-contractual non-compete obligations are still ongoing.

#### **Permanent Disability**

In case of permanent disability, an Executive Board member's 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 Former Executive Board Members

In 2019, we paid pension benefits of  $\[ \in \] 2,081,100 \]$  to Executive Board members who had retired before January 1, 2019 (2018:  $\[ \in \] 2,054,300 \]$ ). At the end of 2019, the DBO for former Executive Board members who had retired or left SAP before January 1, 2019 was  $\[ \in \] 44,306,334 \]$  (2018:  $\[ \in \] 38,373,500 \]$ ). Plan assets of  $\[ \in \] 31,074,600 \]$  are available to meet these obligations (2018:  $\[ \in \] 31,615,100 \]$ ).

#### **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 2019 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  $\le$ 165,000. The chairperson receives  $\le$ 275,000 and the deputy chairperson  $\le$ 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 who have 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 2019**

€ thousands			2019	201				
	Fixed Compensation	Compensation for Commit- tee Work	Total	Fixed Compensation	Compensation for Commit- tee Work	Total		
Prof. Dr. h.c. mult. Hasso Plattner (chairperson)	275.0	53.2	328.2	275.0	88.0	363.0		
Margret Klein-Magar (deputy chairperson)	220.0	26.6	246.6	220.0	22.0	242.0		
Pekka Ala-Pietilä	165.0	18.3	183.3	165.0	40,3	205.3		
Panagiotis Bissiritsas	165.0	39.4	204.4	165.0	38.5	203.5		
Martin Duffek (until 5/15/2019)	68.8	16.0	84.8	165.0	38.5	203.5		
Aicha Evans	165.0	33.0	198.0	165.0	29.3	194.3		
Anja Feldmann (until 12/31/2018)	NA	NA	NA	165.0	19.3	184.3		
Diane Greene (from 5/17/2018)	165.0	11.0	176.0	110.0	2.8	112.8		
Prof. Dr. Wilhelm Haarmann (until 5/17/2018)	NA	NA	NA	68.5	13.8	82.3		
Andreas Hahn (until 5/15/2019)	68.8	9.2	77.9	165.0	22.0	187.0		
Prof. Dr. Gesche Joost	165.0	22.0	187.0	165.0	22.0	187.0		
Monika Kovacka-Dimitrova (from 5/15/2019)	110.0	14.7	124.7	NA	NA	NA		
Lars Lamadé	165.0	22.9	187.9	165.0	22.0	187.0		
Bernard Liautaud	165.0	22.0	187.0	165.0	33.0	198.0		
Gerhard Oswald (from 1/1/2019)	165.0	52.3	217.3	NA	NA	NA		
Christine Regitz	165.0	30.3	195.3	165.0	22.0	187.0		
Dr. Friederike Rotsch (from 5/17/2018)	165.0	43.1	208.1	110.0	18.3	128.3		
Dr. Erhard Schipporeit (until 5/15/2019)	68.8	20.6	89.4	165.0	46.8	211.8		
Robert Schuschnig-Fowler (until 5/15/2019)	68.8	9.2	77.9	165.0	22.0	187.0		
Dr. Sebastian Sick (until 5/15/2019)	68.8	9.2	77.9	165.0	22.0	187.0		
Heike Steck (from 5/15/2019)	110.0	14.7	124.7	NA	NA	NA		
Pierre Thiollet (until 5/15/2019)	68.8	4.6	73.3	165.0	11.0	176.0		
Christa Vergien-Knopf (from 5/15/2019)	110.0	14.7	124.7	NA	NA	NA		
Dr. Gunnar Wiedenfels (from 5/15/2019)	110.0	25.7	135.7	NA	NA	NA		
James Wright (from 5/15/2019)	110.0	25.7	135.7	NA	NA	NA		
Prof. DrIng. DrIng. E.h. Klaus Wucherer (until 5/17/2018)	NA	NA	NA	68.5	6.9	75.4		
Ralf Zeiger (from 5/15/2019)	110.0	14.7	124.7	NA	NA	NA		
Total	3,217.5	552.7	3,770.2	3,162.0	540.4	3,702.4		

In 2019, 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  $\[ \in \]$ 1,976,000 (2018:  $\[ \in \]$ 1,206,500).

#### 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 2019 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. 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.

### **Employee**

#### **Headcount and Personnel Expense**

SAP is constantly adapting to new market conditions and changing customer requirements. As part of this ongoing transformation, we launched a company-wide restructuring program in 2019. Our aim was to further simplify our structures and processes and invest in key strategic growth areas. With that, we endeavor to ensure that our organizational setup, skillsets, and resource allocation continue to meet customer demand. For more information about the numbers of employees who left SAP as part of the restructuring program and its financial impact, see the Notes to the Consolidated Financial Statements, *Note* (*B.6*).

Like similar restructuring programs in the past, this program was not about reducing the size of SAP. We are growing and continuing to focus on delivering the intelligent enterprise. As part of the restructuring program we offered our voluntary program in certain countries. It was built on "double voluntariness," meaning SAP has reserved the right to reject the participation of individual employees, if their knowledge was considered business critical. In addition, we were monitoring our hiring patterns through 2019 to realize the structural effects of our restructuring efforts.

As at December 31, 2019, we had 100,330 full-time equivalent (FTE) employees worldwide (2018: 96,498). This represents an increase in headcount of 3,832 FTEs (thereof 2,113 from acquisitions) in comparison to 2018. The average number of employees in 2019 was 99,157 (2018: 93,709).

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

Our average personnel expense for each employee increased to approximately  $\$ 150,000 in 2019 (2018: approximately  $\$ 124,000). This increase is primarily attributable to an increase of share-based payment and restructuring expenses. The personnel expense for each employee is defined as the overall personnel expense divided by the average number of employees.

For more information about employee compensation and a breakdown of the components of personnel expense, see the Notes to the Consolidated Financial Statements, *Note (B.2)*.

#### **Employee Headcount by Region and Function**

Full-time			12	2/31/2019			12	2/31/2018			12	2/31/2017
equivalents (FTEs)	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total
Cloud and software	6,501	4,426	5,361	16,288	6,341	4,268	5,374	15,983	5,869	3,895	4,719	14,482
Services	8,250	6,018	5,971	20,239	8,120	5,736	5,620	19,476	7,536	4,878	4,965	17,379
Research and development	12,710	5,793	9,131	27,634	12,478	5,651	8,930	27,060	11,349	5,250	8,273	24,872
Sales and marketing	10,205	10,368	5,209	25,781	9,843	9,452	4,918	24,213	9,196	9,169	4,854	23,219
General and administration	3,161	2,123	1,246	6,530	2,906	1,970	1,147	6,024	2,676	1,781	1,047	5,504
Infrastructure	2,220	984	654	3,859	2,160	951	631	3,742	1,732	855	501	3,087
SAP Group (12/31)	43,048	29,712	27,571	100,330	41,848	28,029	26,620	96,498	38,357	25,827	24,359	88,543
Thereof acquisitions	338	1,638	137	2,113	657	952	434	2,043	149	133	7	289
SAP Group (months' end average)	42,697	29,368	27,092	99,157	40,496	27,454	25,759	93,709	37,512	25,459	24,029	86,999

#### **Employee and Labor Relations**

On a worldwide basis, we believe that our employee and labor relations are excellent.

On a corporate level, employees of SAP in the European Economic Area are represented by the SAP SE Works Council (WoC) (Europe). By law and agreement with SAP the SAP SE WoC (Europe) is entitled to receive information on transnational matters and to consult with the Executive Board or a representative thereof.

On the legal entity level, the SAP SE works council (Germany) represents the employees of SAP SE. The employees of SAP Deutschland SE & Co. KG (SAP Germany) and Concur (Germany) GmbH are represented by a separate works council. Other employee representatives include the group works council (composed of members of the works councils of SAP SE and SAP Germany), the

representatives of severely disabled persons in all entities and on a group level (Germany) and the spokespersons committee as the representation of the executives.

Employees of each of SAP France, SAP France Holding and SAP Labs France SAS are subject to a same collective agreement "SYNTEC". In France, from December 31, 2019 the Workers Council, the Health and Safety Committee and the employee representative were replaced by a single instance named "Economic and Social Committee". All companies were required to organize professional elections before this date. Today, SAP Labs France SAS and Concur (France) SAS are represented by an Economic and Social Committee. SAP France and SAP France Holding were represented by a works council until December 3, 2019. The represented unions

negotiate agreements with each of SAP France and SAP Labs France SAS  $\,$ 

For Concur (France) SAS the agreements are negotiated with the Economic and Social Committee. In addition, the employees of various other SAP entities, including SAP España – Sistemas, Aplicaciones y Productos en la Informática, S.A., SAP Belgium NV/SA., SAP Israel, SAP Nederland B.V., SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., SAP China Beijing, all entities in the Czech (Republic (SAP ČR, spol. s r.o., SAP Services s.r.o., Ariba Czech s.r.o. and Concur Czech (s.r.o.)), SAP Brasil Ltda, SAP Korea Ltd. (Korea), SAP Slovensko s.r.o. (Slovakia), SAP sistemi, aplikacije in produkti za obdelavo podatkov d.o.o.(Slovenia), SAP Romania SRL, SAP Argentina S.A., SAP Svenska Aktiebolag (Sweden), SAP UK Ltd. and SAP Ireland Ltd. are represented by works councils, worker representatives, employee consultation forums and/or unions. In addition, some of these employees are subject to a collective bargaining agreement.

### **Share Ownership**

#### **Beneficial Ownership of Shares**

The ordinary shares beneficially owned by the persons listed in "Item 6. Directors, Senior Management and Employees — Compensation Report" are disclosed in "Item 7. Major Shareholders and Related-Party Transactions — Major Shareholders."

## **Share-Based Compensation Plans**

#### **Share-Based Compensation**

We maintain certain share-based compensation plans. The share-based compensation from these plans result from cash-settled and equity-settled awards issued to employees. For more information on our share-based compensation plans refer to "Item 6. Directors, Senior Management and Employees — Compensation Report" and Note (B.3) to our Consolidated Financial Statements.

# ITEM 7. MAJOR SHAREHOLDERS AND RELATED-PARTY TRANSACTIONS

#### **Major Shareholders**

The share capital of SAP SE consists of ordinary shares, which are issued only in bearer form. Accordingly, SAP SE generally cannot determine the identity of its shareholders or how many shares a particular shareholder owns. SAP's ordinary shares are traded in the United States by means of ADRs. Each ADR currently represents one SAP SE ordinary share. On February 7, 2020, based on information provided by the Depositary there were 60,139,010 ADRs held of record by 783 registered holders. The ordinary shares underlying such ADRs represented 4.90% of the then-outstanding ordinary shares (including treasury stock). Because SAP's ordinary shares are issued in bearer form only, we are unable to determine the number of ordinary shares directly held by persons with U.S. addresses.

The following table sets forth certain information regarding the beneficial ownership of the ordinary shares to the extent known to SAP as of February 7, 2020 of: (i) each person or group known by SAP SE to own beneficially 5% or more of the outstanding ordinary shares; and (ii) the beneficial ownership of all individuals who are currently members of the Supervisory Board and all members of the Executive Board, individually and as a group, in each case as reported to SAP SE by such persons. There was, as far as we are able to tell given the nature of our shares, no significant change in the percentage ownership held by any major shareholder during the past three years. None of the major shareholders have special voting rights.

Major Shareholders	Ordinary Beneficial	
	Number	% of Outstanding
Dietmar Hopp, collectively <sup>(1)</sup>	61,864,345	5.04
Hasso Plattner, Chairperson Supervisory Board, collectively(2)	72,369,813	5.891
Executive Board Members as a group (8 persons)	26,998	0.002
Supervisory Board Members as a group (18 persons)	72,388,510	5.892
Executive Board Members and Supervisory Board Members as a group (26 persons)(3)	72,415,508	5.894
BlackRock, Inc. <sup>(4)</sup>	69,306,896	5.6

<sup>(1)</sup> The foregoing information is based on a Schedule 13G filed by Dietmar Hopp and other affiliated persons and companies on February 20, 2020.

<sup>(2)</sup> Includes HP Endowment GmbH & Co. KG and Hasso Plattner Single Asset KG in which Hasso Plattner exercises sole voting and dispositive power.

<sup>(3)</sup> We believe that, other than Hasso Plattner, each of the members of the Supervisory Board and the Executive Board beneficially owns less than 1% of SAP SE's ordinary s hares as of February 7, 2020.

February 7, 2020.

(4) As required under German law, BlackRock, Inc. informed SAP that they own more than 5% of SAP's outstanding ordinary shares. BlackRock, Inc. is not required to provide SAP with the number of shares owned as of February 7, 2020, and has not provided such information. The foregoing information is based on a Schedule 13G filed by BlackRock, Inc. on February 6, 2020.

Currently we are not aware of any arrangements, the operation of which may, at a subsequent date, result in a change in control of the company.

#### **Related-Party Transactions**

For information on related-party transactions see Note(G.6) to our Consolidated Financial Statements.

## ITEM 8. FINANCIAL INFORMATION

## Consolidated Financial Statements and Financial Statement Schedule

See "Item 18. Financial Statements" and pages F-1 through F-81.

#### **Other Financial Information**

#### **Legal Proceedings**

We are subject to a variety of legal proceedings and claims, either asserted and unasserted, which arise in the ordinary course of business, including claims and lawsuits involving businesses we have acquired.

Refer to *Note* (*G.3*) to our Consolidated Financial Statements for a detailed discussion of our material legal proceedings.

#### **Dividend Policy**

For more information on dividend policy see the disclosure in "Item 3. Key Information — Dividends".

#### **Significant Changes**

At the beginning of 2020, SAP modified its organizational structure to strengthen the focus on customer success and employee engagement while driving innovation and simplicity. The set-up moving forward aims at raising synergies, reducing complexity while initiating key steps towards further integration. The organizational changes will also affect SAP's segment reporting. SAP has already started the process of redefining its management reporting under the new organizational structure, which the segment reporting will follow. See *Note* (*G.8*) to our Consolidated Financial Statements for further information.

On February 19, 2020, Michael Kleinemeier and the Supervisory Board mutually agreed that he will depart SAP as of April 30, 2020 and that his membership on the Executive Board will end effective as of that day. Further, Stefan Ries and the Supervisory Board mutually agreed that Stefan will depart SAP as of May 31, 2020 and that his memberhip on the Executive Board will end effective as of that day.

## ITEM 9. THE OFFER AND LISTING

Our ordinary shares are officially listed on the Frankfurt Stock Exchange, the Berlin Stock Exchange and the Stuttgart Stock Exchange. The principal trading market for the ordinary shares is Xetra, the electronic dealing platform of Deutsche Boerse AG.

ADRs representing SAP SE ordinary shares are listed on the New York Stock Exchange (NYSE) under the symbol "SAP," and currently each ADR represents one ordinary share.

## ITEM 10. ADDITIONAL INFORMATION

#### **Articles of Incorporation**

#### Organization and Register

SAP SE is a European Company (Societas Europaea, or "SE") organized in the Federal Republic of Germany under German and European law, including Council Regulation (EC) No. 2157/2001 on the Statute for a European Company (the "SE Regulation"), the German Act on the Implementation of Council Regulation No. 2157/2001 of October 8, 2001 on the Statute for a European Company (Gesetz zur Ausführung der Verordnung (EG) Nr. 2157/2001 des Rates vom 8. Oktober 2001 über das Statut der Europäischen Gesellschaft (SE) – SE-Ausführungsgesetz; "SE-AG") of December 22, 2004, and the German Stock Corporation Act (Aktiengesetz). SAP SE is registered in the Commercial Register (Handelsregister) at the Lower Court of Mannheim, Germany, under the entry number "HRB 719915." SAP SE publishes its official notices in the Federal Gazette (www.bundesanzeiger.de).

#### **Objects and Purposes**

SAP's Articles of Incorporation state that our objects involve, directly or indirectly, the development, production and marketing of products and the provision of services in the field of information technology, including:

- developing and marketing integrated product and service solutions for e-commerce;
- developing software for information technology and the licensing of its use to others;
- organization and deployment consulting, as well as user training, for e-commerce and other software solutions;
- selling, leasing, renting and arranging the procurement and provision of all other forms of use of information technology systems and related equipment; and
- making capital investments in enterprises active in the field of information technology to promote the opening and advancement of international markets in the field of information technology.

SAP is authorized to act in all the business areas listed above and to delegate such activities to affiliated entities within the meaning of the German Stock Corporation Act; in particular SAP is authorized to delegate its business in whole or in part to such entities. SAP SE is authorized to establish branch offices in Germany and other countries, as well as to form, acquire or invest in other companies of the same or related kind and to enter into collaboration and joint venture agreements. SAP is further authorized to invest in enterprises of all kinds principally for investment purposes. SAP is authorized to dispose of investments, to consolidate the management of enterprises in which it participates, to enter into affiliation agreements with such entities, or to limit its activities to manage its shareholdings.

#### **Corporate Governance**

#### Introduction

SAP SE, as a European Company with a two-tier board system, is governed by three separate bodies: the Supervisory Board, the Executive Board and the Annual General Meeting of Shareholders. Their rules are defined by European and German law, by the Agreement on the Involvement of Employees in SAP SE ("Employee Involvement Agreement"), by the German Corporate Governance Code and by SAP's Articles of Incorporation (Satzung) and are summarized below. See "Item 16G. Differences in Corporate Governance Practices" for additional information on our corporate governance practices.

#### The Supervisory Board

The Supervisory Board appoints and removes the members of the Executive Board and oversees and advises the management of the corporation. At regular intervals it meets to discuss current business as well as business development and planning. The SAP Executive Board must consult with the Supervisory Board concerning the corporate strategy, which is developed by the Executive Board. Types of transactions for which the Executive Board requires the Supervisory Board's consent are listed in the Articles of Incorporation; in addition, the Supervisory Board has specified further types of transactions that require its consent. Accordingly, the Supervisory Board must also approve the annual budget of SAP upon submission by the Executive Board and certain subsequent deviations from the approved budget. The Supervisory Board is also responsible for representing SAP SE in transactions between SAP SE and Executive Board members. The Supervisory Board, based on a recommendation by its Audit Committee, provides its proposal for the election of the external independent auditor to the Annual General Meeting of Shareholders. The Supervisory Board is responsible for auditing the SAP SE financial statements, the consolidated financial statements, the combined management report, as well as the combined nonfinancial report. The Supervisory Board is also responsible for monitoring the auditor's independence and the audit quality, a task it has delegated to its audit committee.

Pursuant to Article 40 (3) sentence 1 of the SE Regulation, the number of members of the supervisory board and the rules for determining this number are to be laid down in the articles of incorporation. Furthermore, pursuant to Section 17 (1) SE-AG, the size of supervisory boards of companies which, like SAP SE, have a capital stock exceeding  $\in$  10,000,000, is limited to 21 members. In line with these provisions as well as the EIA, the Articles of Incorporation of SAP SE provide that the Supervisory Board shall be composed of 18 members. Furthermore, it is provided in the EIA that the shareholders of SAP SE have the possibility to reduce the size of the Supervisory Board in the future (i.e. at the earliest in the Annual General Meeting of Shareholders in 2019, with effect from the Annual General Meeting of Shareholders in 2020) to 12 members.

The current Supervisory Board of SAP SE consists of eighteen members, nine of whom are elected by the Annual General Meeting of Shareholders as shareholders' representatives and the remaining nine are appointed as employees' representatives by the SAP SE Works Council Europe in accordance with the EIA (see below for details). Pursuant to Section 17(2) SE-AG, the Supervisory Board of SAP SE must have a minimum of 30% men and 30% women. This quota for the Supervisory Board must be observed for any new appointment to the Supervisory Board. In 2019, there were four women on the shareholder representatives' side of the Supervisory

Board and two women on the employee representatives' side from the beginning of 2019 until May 15, 2019, and four women on the shareholder representatives' side and five women on the employee representatives' side from May 15, 2019, until December 31, 2019. Thus the percentage of women on the Supervisory Board reached, and even exceeded, the minimum quota of 30% throughout 2019.

The procedure for the appointment of the employee representatives on the Supervisory Board of SAP SE is governed by the EIA. In accordance with the EIA, the nine seats on the first Supervisory Board reserved for employees' representatives were allocated as follows: the first six seats were allocated to Germany, the seventh seat was allocated to France, the eighth seat was also allocated to Germany, and the ninth seat was allocated to a European country not represented by the first eight seats, as determined by the SAP SE Works Council Europe. The employees' representatives for the first six seats allocated to Germany were determined by direct vote by all SAP employees with their principal place of employment in Germany. According to the EIA, the employees' representative for the seventh seat allocated to France is generally determined according to the applicable provisions of French law on the election or appointment of employees' representatives on a supervisory board. With regard to the eighth and ninth seat, members of the SAP SE Works Council Europe from Germany and Slovakia were appointed by the SE Works Council as employees' representatives.

Any Supervisory Board member elected by the shareholders at the Annual General Meeting of Shareholders may be removed by three-quarters of the votes cast at the Annual General Meeting of Shareholders. Any Supervisory Board member appointed in accordance with the EIA may be removed by the SAP SE Works Council Europe upon application by the body that nominated the respective employees' representative for appointment by the SE Works Council or, in case the employees' representative was directly elected, the majority of the employees entitled to vote.

The Supervisory Board elects a chairperson and one or two deputy chairperson(s) among its members by a majority of the votes cast. Only a shareholders' representative may be elected as chairperson of the Supervisory Board. When electing the chairperson of the Supervisory Board, the oldest member in terms of age of the shareholders' representatives on the Supervisory Board will chair the meeting and, in the event of a tied vote, will have the casting vote.

Unless otherwise mandatorily prescribed by law or the Articles of Incorporation, resolutions of the Supervisory Board are adopted by simple majority of the votes cast. In the event of a tie, the vote of the chairperson and, in the event that the chairperson does not participate in passing the resolution, the vote of the deputy chairperson, provided that he or she is a shareholders' representative, will be decisive (casting vote).

The members of the Supervisory Board cannot be elected or appointed, as the case may be, for a term longer than six years. Other than for the employees' representatives on the first Supervisory Board of SAP SE, the term expires at the close of the Annual General Meeting of Shareholders giving its formal approval of the acts of the Supervisory Board for the fourth fiscal year following the year in which the term of office of the Supervisory Board members commenced. Re-election is possible. Our Supervisory Board normally meets four times a year. The compensation of the members of the Supervisory Board is set in the Articles of Incorporation.

As stipulated in the German Corporate Governance Code (GCGC), an adequate number of our Supervisory Board members are independent. To be considered for appointment to the Supervisory Board and for as long as they serve, members must comply with certain criteria concerning independence, conflicts of interest and multiple memberships of management, supervisory and other governing bodies. They must be loyal to SAP in their conduct and must not accept any position in companies that are in competition with SAP. Members are subject to insider trading prohibitions and the respective directors' dealing rules of the European Regulation (EU) No 596/2014 of the European Parliament and the Council of 16 April 2014 on market abuse and the German Securities Trading Act. A member of the Supervisory Board may not vote on matters relating to certain contractual agreements between such member and SAP SE. Further, as the compensation of the Supervisory Board members is set in the Articles of Incorporation, Supervisory Board members are unable to vote on their own compensation, with the exception that they are able to exercise voting rights in a General Meeting of Shareholders in connection with a resolution amending the Articles of Incorporation.

The Supervisory Board may appoint committees from among its members and may, to the extent permitted by law, entrust such committees with the authority to make decisions on behalf of the Supervisory Board. Currently the Supervisory Board maintains the following committees:

#### The Audit Committee

The focus of the Audit Committee (Prüfungsausschuss) is the oversight of SAP's external financial reporting as well as SAP's risk management, internal controls (including internal controls over the effectiveness of the financial reporting process), corporate audit, cybersecurity matters and compliance matters. According to German Law SAP's Audit Committee includes at least one independent member with expertise in the fields of financial reporting or auditing. Among the tasks of the Audit Committee are the discussion of SAP's quarterly and year-end financial reporting prepared under German and U.S. regulations, including this report. The Audit Committee recommends to the Supervisory Board the appointment of the external independent auditor, determines focus audit areas, discusses critical accounting policies and estimates with and reviews the audit reports issued and audit issues identified by the auditor. The audit committee also negotiates the audit fees with the auditor and monitors the auditor's independence and quality. SAP's Corporate Audit Office, SAP's Office of Ethics and Compliance (formerly the Legal Compliance and Integrity Office), SAP's Global Security Office and SAP's Risk Management Office report regularly to the Audit Committee, as well as upon request or the occurrence of certain findings, but in any case at least (i) quarterly (the Office of Ethics and Compliance and the Risk Management Office), (ii) twice a year (Corporate Audit), and (iii) once a year (the Global Security Office). In addition to making regular reports to the CFO and the Audit Committee, the Office of Ethics and Compliance reports to the Executive Board annually.

The Audit Committee has established procedures regarding the prior approval of all audit and non-audit services provided by our external independent auditor. See "Item 16C. Principal Accountant Fees and Services" for details.

The Audit Committee also does preparatory work for the full Supervisory Board's deliberations and resolutions on the adoption of the annual financial statements, the approval of the consolidated annual financial statements and the Integrated Report, and on the

dividend proposal. Furthermore, the Audit Committee and the Finance and Investment Committee jointly prepare the full Supervisory Board's resolution to approve the group annual plan.

The Supervisory Board has determined Dr. Gunnar Wiedenfels, the Audit Committee's chairperson, to be an audit committee financial expert as defined by the regulations of the SEC issued under Section 407 of the Sarbanes-Oxley Act as well as an independent financial expert as defined by the German Stock Corporation Act. See "Item 16A. Audit Committee Financial Expert" for details.

#### The General and Compensation Committee

The General and Compensation Committee (Präsidial- und Personalausschuss) coordinates the work of the Supervisory Board, prepares its meetings and deals with corporate governance issues. In addition, it carries out the preparatory work necessary for the personnel decisions made by the Supervisory Board, notably those concerning compensation for the Executive Board members and the conclusion, amendment and termination of the Executive Board members' contracts of appointment.

The German Stock Corporation Act prohibits the Compensation Committee from deciding on the compensation of the Executive Board members on behalf of the Supervisory Board and requires that such decision is made by the entire Supervisory Board. This Act also provides the General Meeting of Shareholders with the right to vote on the system for the compensation of Executive Board members, such vote, however, not being legally binding for the Supervisory Board.

#### The Finance and Investment Committee

The Finance and Investment Committee (Finanz- und Investitionsausschuss) addresses general financing issues. Furthermore, it regularly discusses acquisitions of intellectual property and companies, venture capital investments and other investments with the Executive Board and reports to the Supervisory Board on such investments. It is also responsible for the approval of such investments if the individual investment amount exceeds certain specified limits, as well as – together with the Audit Committee – for the preparation of the full Supervisory Board's resolution to approve the group annual plan.

#### The Technology and Strategy Committee

The Technology and Strategy Committee (Technologie-und Strategieausschuss) monitors technology transactions and provides the Supervisory Board with in-depth technical advice.

#### The Nomination Committee

The Nomination Committee (Nominierungsausschuss) is exclusively composed of shareholder representatives and is responsible for identifying suitable candidates for membership of the Supervisory Board for recommendation to the Annual General Meeting of Shareholders.

#### The Special Committee

The Special Committee (Sonderausschuss) deliberates on matters arising out of substantial exceptional risks, such as major litigations. The Special Committee was in place until May 15, 2019 and will no longer be continued.

#### The People and Organization Committee

The People and Organization Committee (Ausschuss für Mitarbeiter- und Organisationsangelegenheiten) deliberates and advises the Executive and Supervisory Board on key personnel matters and major organizational changes at the management level below the Executive Board. It also advises on equal opportunities for women at SAP.

The duties and procedures of the Supervisory Board and its committees are specified in their respective rules of procedure, if any, which reflect the requirements of European and German law, including the SE Regulation and the German Stock Corporation Act, the Articles of Incorporation and the recommendations of the GCGC.

According to the provisions of the Sarbanes-Oxley Act, SAP does not grant loans to the members of the Executive Board or the Supervisory Board.

#### The Executive Board

The Executive Board manages the Company's business, is responsible for preparing its strategy and represents it in dealings with third parties. The Executive Board reports regularly to the Supervisory Board about SAP operations and business strategies and prepares special reports upon request. A person may not serve on the Executive Board and on the Supervisory Board at the same time

The Executive Board and the Supervisory Board cooperate closely for the benefit of the Company. The Executive Board is required to provide the Supervisory Board regular, prompt and comprehensive information about all of the essential issues affecting the SAP Group's business progress and its potential business risks. Furthermore, the Executive Board must maintain regular contact with the chairperson of the Supervisory Board and vice versa. The Executive Board must inform the chairperson of the Supervisory Board promptly about exceptional events that are of significance to SAP's business. The Supervisory Board chairperson must inform the Supervisory Board accordingly and shall, if required, convene an extraordinary meeting of the Supervisory Board.

Pursuant to the Articles of Incorporation, the Executive Board must consist of at least two members. SAP SE's Executive Board is currently comprised of eight members. Any two members of the Executive Board jointly or one member of the Executive Board and the holder of a special power of attorney (Prokurist) jointly may legally represent SAP SE. The Supervisory Board appoints each member of the Executive Board for a maximum term of five years, with the possibility of re-appointment. Under certain circumstances, a member of the Executive Board may be removed by the Supervisory Board prior to the expiration of that member's term. A member of the Executive Board may not vote on matters relating to certain contractual agreements between such member and SAP SE, and may be liable to SAP SE if such member has a material interest in any contractual agreement between SAP and a third party which was not previously disclosed to and approved by the Supervisory Board. Further, as the compensation of the Executive Board members is set by the Supervisory Board, Executive Board members are unable to vote on their own compensation, with the exception that they are able to exercise voting rights in a General Meeting of Shareholders resolving a non-binding vote on the system for the compensation of Executive Board members.

Under German law SAP SE's Supervisory Board members and Executive Board members have a duty of loyalty and care towards SAP SE. They must exercise the standard of care of a prudent and diligent businessman and bear the burden of proving they did so if

their actions are contested. Both bodies must consider the interest of SAP SE shareholders and our employees and, to some extent, the common good. Those who violate their duties may be held jointly and severally liable for any resulting damages, unless they acted pursuant to a lawful resolution of the Annual General Meeting of Shareholders.

SAP has implemented a Code of Business Conduct for employees (see "*Item 16B. Code of Ethics*" for details). The employee code is equally applicable to managers and members of the Executive Board. Its rules are observed as well by members of the Supervisory board as applicable.

Under German law the Executive Board of SAP SE has to assess all major risks for the SAP Group. In addition, all measures taken by management to reduce and handle the risks have to be documented. Therefore, SAP's management has adopted suitable measures such as implementing an enterprise-wide risk monitoring system to ensure that adverse developments endangering the corporate standing are recognized at a reasonably early point in time.

The Office of Ethics and Compliance (formerly the Office of Legal Compliance and Integrity) was created by the SAP Executive Board in 2006 to oversee and coordinate legal and regulatory policy compliance at SAP. The Chief Global Compliance Officer heading the Office of Ethics and Compliance directly reports to co-CEO Jennifer Morgan and also has direct communication channels and reporting obligations to the Audit Committee of the Supervisory Board. The Office of Office of Ethics and Compliance manages a network of more than 100 local subsidiary Compliance Officers who act as the point of contact for local questions or issues under the SAP Code of Business Conduct for employees. The Office of Ethics and Compliance provides training and communication to SAP employees to raise awareness and understanding of legal and regulatory compliance policies. Employee help lines are also supported in each region where questions can be raised or questionable conduct can be reported without fear of retaliation.

#### The Annual General Meeting of Shareholders

Shareholders of the Company exercise their voting rights at shareholders' meetings. The Executive Board calls the Annual General Meeting of Shareholders, which must take place within the first six months of each fiscal year. The Supervisory Board or the Executive Board may call an extraordinary meeting of the shareholders if the interests of the stock corporation so require. Additionally, shareholders of SAP SE holding in the aggregate a minimum of 5% of SAP SE's issued share capital may call an extraordinary meeting of the shareholders. Shareholders as of the record date are entitled to attend and participate in shareholders' meetings if they have provided timely notice of their intention to attend the meeting.

At the Annual General Meeting of Shareholders, the shareholders are asked, among other things, to formally approve the actions taken by the Executive Board and the Supervisory Board in the preceding fiscal year, to approve the appropriation of the corporation's distributable profits and to appoint an external independent auditor. Shareholder representatives of the Supervisory Board are generally elected at the Annual General Meeting of Shareholders for a term of approximately five years. Shareholders may also be asked to grant authorization to repurchase treasury shares, to resolve on measures to raise or reduce the capital of the Company or to ratify amendments of our Articles of Incorporation. The Annual General

Meeting of Shareholders can make management decisions only if requested to do so by the Executive Board.

#### **Change in Control**

There are no provisions in the Articles of Incorporation of SAP SE that would have the effect of delaying, deferring or preventing a change in control of SAP SE and that would only operate with respect to a merger, acquisition or corporate restructuring involving it or any of its subsidiaries.

According to the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz) a bidder seeking control of a company with its corporate seat in Germany or another state of the European Economic Area (EEA) and its shares being traded on an EEA stock exchange must publish an advance notice of its decision to make a tender offer, submit an offer statement to the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht) for review, and obtain certification from a qualified financial institution that adequate financing is in place to complete the offer. The offer statement must be published upon approval by the Federal Financial Supervisory Authority or expiry of a certain time period without such publication being prohibited by the Federal Financial Supervisory Authority. Once a shareholder has acquired shares representing at least 30% of the voting rights in an EEA-listed company, it must make an offer for all remaining shares. The Securities Acquisition and Takeover Act requires the executive board of the target company to refrain from taking any measures that may frustrate the success of the takeover offer. However, the target executive board is permitted to take any action that a prudent and diligent management of a company that is not the target of a takeover bid would also take. Moreover, the target executive board may search for other bidders and, with the prior approval of the supervisory board, may take other defensive measures, provided that both boards act within the parameters of their general authority under the German Stock Corporation Act. An executive board may also adopt specific defensive measures if such measures have been approved by the supervisory board and were specifically authorized by the general shareholders' meeting no earlier than 18 months in advance of such measures by a resolution of at least 75% of the shares represented.

Under the European Takeover Directive of 2004 member states had to choose whether EU restrictions on defensive measures apply to companies that are registered in their territory. Germany decided to opt out and to retain its current restrictions on a board implementing defensive measures (as described above). As required by the Directive if a country decides to opt out the German Securities Acquisition and Takeover Act grants companies the option of voluntarily applying the European standard by a change of the Articles of Incorporation (opt-in). SAP SE has not made use of this option.

#### **Change in Share Capital**

Under German law, the capital stock may be increased in consideration of contributions in cash or in kind, or by establishing authorized capital or contingent capital or by an increase of the company's capital reserves. Authorized capital provides the Executive Board with the flexibility to issue new shares for a period of up to five years. The Executive Board must obtain the approval of the Supervisory Board before issuing new shares with regard to the authorized capital. Contingent capital allows the issuance of new shares for specified purposes, including stock option plans for Executive Board members or employees and the issuance of shares

upon conversion of convertible bonds and exercise of stock options. By law, the Executive Board may only issue new shares with regard to the contingent capital for the specified purposes. Capital increases require an approval by at least 75% of the valid votes cast at the General Meeting of Shareholders in which the increase is proposed, and requires an amendment to the Articles of Incorporation.

The share capital may be reduced by an amendment to the Articles of Incorporation approved by at least 75% of the valid votes cast at the General Meeting of Shareholders. In addition, the Executive Board of SAP SE is allowed to authorize a reduction of the company's capital stock by canceling a defined number of repurchased treasury shares if this repurchasing and the subsequent reduction have already been approved by the General Meeting of Shareholders.

The Articles of Incorporation do not contain conditions regarding changes in the share capital that are more stringent than those provided by applicable European and German law.

#### **Rights Accompanying our Shares**

There are no limitations imposed by German law or the Articles of Incorporation of SAP SE on the rights to own securities, including the rights of non-residents or foreign holders to hold the ADRs or ordinary shares, to exercise voting rights or to receive dividends or other payments on such shares.

According to the German stock corporation law, the rights of shareholders cannot be amended without shareholders' consent. The Articles of Incorporation do not provide more stringent conditions regarding changes of the rights of shareholders than those provided by applicable European and German law.

#### **Voting Rights**

Each ordinary SAP SE share represents one vote. Cumulative voting is not permitted under applicable European and German law. A corporation's articles of incorporation may stipulate a majority necessary to pass a shareholders' resolution differing from the majority provided by law, unless the law mandatorily requires a certain majority. Section 21 (1) of SAP SE's Articles of Incorporation provides that resolutions may be passed at the General Meeting of Shareholders with a majority of valid votes cast, unless a larger majority is prescribed by law or the Articles of Incorporation. SAP SE's Articles of Incorporation as well as applicable European and German law require that the following matters, among others, be approved by at least 75% of the valid votes cast at the General Meeting of Shareholders in which the matter is proposed:

- changing the corporate purpose of the company set out in the Articles of Incorporation;
- capital increases and capital decreases;
- excluding preemptive rights of shareholders to subscribe for new shares or for treasury shares;
- dissolution;
- a merger into, or a consolidation with, another company;
- a transfer of all or virtually all of the assets;
- a change of corporate form, including re-conversion into a German stock corporation;
- a transfer of the registered seat to another EU member state; and
- any other amendment to the Articles of Incorporation (pursuant to section 21 (2) sentence 1 of the Articles of Incorporation). For any amendments of the Articles of Incorporation which require a simple majority for stock corporations established under German law, however, section 21 (2) sentence 2 of SAP SE's Articles of

Incorporation provides that 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 (i.e. two thirds of the votes cast, pursuant to sec. 59 of the SE Regulation) is sufficient.

#### **Dividend Rights**

See "Item 3. Key Information — Dividends."

#### Preemptive Rights

Shareholders have preemptive rights to subscribe (Bezugsrecht) for any issue of additional shares in proportion to their shareholdings in the issued capital. The preemptive rights may be excluded under certain circumstances by a shareholders' resolution (approved by at least 75% of the valid votes cast at the General Meeting of Shareholders) or by the Executive Board authorized by such shareholders' resolutions and subject to the consent of the Supervisory Board.

#### Liquidation

If SAP SE were to be liquidated, any liquidation proceeds remaining after all of our liabilities were paid would be distributed to our shareholders in proportion to their shareholdings.

#### Disclosure of Shareholdings

SAP SE's Articles of Incorporation do not require shareholders to disclose their shareholdings. The German Securities Trading Act (Wertpapierhandelsgesetz), however, requires holders of voting securities of SAP SE to notify SAP SE and the Federal Financial Supervisory Authority of the number of shares they hold if that number reaches, exceeds or falls below specified thresholds. These thresholds are 3%, 5%, 10%, 15%, 20%, 25%, 30%, 50% and 75%of the corporation's outstanding voting rights. In respect of certificates representing shares, the notification requirement shall apply exclusively to the holder of the certificates. In addition, the German Securities Trading Act also obliges anyone who holds, directly or indirectly, financial instruments that convey an unconditional entitlement to acquire under a legally binding agreement, shares in SAP SE, to notify SAP SE and the Federal Financial Supervisory Authority if the thresholds mentioned above have been reached, exceeded or fallen below, with the exception of the 3% threshold. This notification obligation also exists for the holder of a financial instrument which merely de facto enables its holder or a third party to acquire shares in SAP SE, subject to the thresholds mentioned in the preceding sentence. In connection with this notification, obligation positions in voting rights and other financial instruments have to be aggregated.

## Exchange Controls and Other Limitations Affecting Security Holders

The euro is a fully convertible currency. At the present time, Germany does not restrict the export or import of capital, except for investments in certain areas in accordance with applicable resolutions adopted by the United Nations and the European Union. However, for statistical purposes only, every individual or corporation residing in Germany ("Resident") must report to the German Central Bank (Deutsche Bundesbank), subject only to certain immaterial exceptions, any payment received from or made to an individual or a corporation residing outside of Germany ("Non-Resident") if such payment exceeds €12,500 (or the equivalent in a foreign currency). In addition, German Residents (except for

individuals and certain financial institutions) must report any accounts payable to or receivable from Non-Residents if such payables or receivables, in the aggregate, exceed  $\mathfrak{S}5$  million (or the equivalent in a foreign currency) at the end of any calendar month. Furthermore, companies resident in Germany with accounts payable to or receivable from Non-Residents in excess of  $\mathfrak{S}500$  million have to report any payables or receivables to/from Non-Residents arising from derivative instruments at the end of each calendar quarter. Residents are also required to report annually to the German Central Bank any shares or voting rights of 10% or more which they hold directly or indirectly in non-resident corporations with total assets of more than  $\mathfrak{S}3$  million. Corporations residing in Germany with assets in excess of  $\mathfrak{S}3$  million must report annually to the German Central Bank any shares or voting rights of 10% or more held directly or indirectly by a Non-Resident.

#### **Taxation**

#### General

The following discussion is a summary of certain material German tax and U.S. federal income tax consequences of the acquisition, ownership and disposition of our ADRs or ordinary shares to a U.S. Holder. In general, a U.S. Holder (as hereinafter defined) is any beneficial owner of our ADRs or ordinary shares that (i) is a citizen or resident of the U.S. or a corporation organized under the laws of the U.S. or any political subdivision thereof, an estate whose income is subject to U.S. federal income tax regardless of its source or a trust, if a U.S. court can exercise primary supervision over its administration and one or more U.S. persons are authorized to control all substantial decisions of the trust; (ii) is not a resident of Germany for purposes of the income tax treaty between the U.S. and Germany (Convention between the Federal Republic of Germany and the United States of America for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income and Capital and to certain other Taxes, as amended by the Protocol of June 1, 2006 and as published in the German Federal Law Gazette 2008 vol. II pp. 611/851; the "Treaty"); (iii) owns the ADRs or ordinary shares as capital assets; (iv) does not hold the ADRs or ordinary shares as part of the business property of a permanent establishment or a fixed base in Germany; and (v) is fully entitled to the benefits under the Treaty with respect to income and gain derived in connection with the ADRs or ordinary shares. Special rules which are not discussed in the following summary apply to pension funds and certain other tax-exempt investors.

THE FOLLOWING IS NOT A COMPREHENSIVE DISCUSSION OF ALL GERMAN TAX AND U.S. FEDERAL INCOME TAX CONSEQUENCES THAT MAY BE RELEVANT FOR U.S. HOLDERS OF OUR ADRS OR ORDINARY SHARES. THEREFORE, U.S. HOLDERS ARE STRONGLY URGED TO CONSULT THEIR OWN TAX ADVISORS REGARDING THE OVERALL GERMAN TAX AND U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF OUR ADRS OR ORDINARY SHARES IN LIGHT OF THEIR PARTICULAR CIRCUMSTANCES, INCLUDING THE EFFECT OF ANY STATE, LOCAL OR OTHER FOREIGN OR DOMESTIC LAWS.

#### German Taxation

The summary set out below is based on German tax laws, interpretations thereof and applicable tax treaties to which Germany is a party and that are in force at the date of this report; it is subject to any changes in such authority occurring after that date, potentially with retroactive effect, that could result in German tax

consequences different from those discussed below. This discussion is also based, in part, on representations of the Depositary and assumes that each obligation of the Deposit Agreement and any related agreements will be performed in accordance with its terms. For additional information on the Depository and the fees associated with SAP's ADR program see "Item 12. Description of Securities Other Than Equity Securities — American Depository Shares."

For purposes of applying German tax law and the applicable tax treaties to which Germany is a party, a holder of ADRs will generally be treated as owning the ordinary shares represented thereby.

#### **German Taxation of Dividends**

Under German income tax law, the full amount of dividends distributed by an incorporated company is generally subject to German withholding tax at a domestic rate of 25% plus a solidarity surtax of 5.5% thereon (effectively 1.375% of dividends before withholding tax), resulting in an aggregate withholding tax rate from dividends of 26.375%. From January 1, 2017 onwards, taxes are incurred on the third bank working day after the annual general meeting, or at a later date as may be stipulated by SAP's articles of incorporation or by the annual general meeting's decision on dividends. Non-resident corporate shareholders will generally be entitled to a refund in the amount of two-fifths of the withholding tax (including solidarity surtax thereon). This does not preclude a further reduction or refund of withholding tax, if any, available under a relevant tax treaty.

Generally, for many non-resident shareholders the withholding tax rate is currently reduced under applicable income tax treaties. Rates and refund procedures may vary according to the applicable treaty. To reduce the withholding tax to the applicable treaty tax rate a non-resident shareholder must apply for a refund of withholding taxes paid. Claims for refund, if any, are made on a special German claim for refund form, which must be filed with the German Federal Tax Office (Bundeszentralamt für Steuern, D-53221 Bonn, Germany; <a href="http://www.bzst.de">http://www.bzst.de</a>). The relevant forms can be obtained from the German Federal Tax Office. For details, such non-resident shareholders are urged to consult their own tax advisors. Special rules apply for the refund to U.S. Holders (we refer to the below section "Refund Procedures for U.S. Holders").

#### **Refund Procedures for U.S. Holders**

Under the Treaty, a partial refund of the 25% withholding tax equal to 10% of the gross amount of the dividend and a full refund of the solidarity surtax can be obtained by a U.S. Holder. Thus, for each US\$100 of gross dividends paid by SAP SE to a U.S. Holder, the dividends (which are dependent on the euro/U.S. dollar exchange rate at the time of payment) will be initially subject to a German withholding tax of US\$26.375, of which US\$11.375 may be refunded under the Treaty. As a result, a U.S. Holder effectively would receive a total dividend of US\$85 (provided the euro/U.S. dollar exchange rate at the time of payment of the dividend is the same as at the time of refund, otherwise the effective dividend may be higher or lower). Further relief of German withholding tax under the Treaty may be available for corporate U.S. Holders owning at least 10% of the voting stock of SAP or U.S. Holders qualifying as pension fund within the meaning of the Treaty, subject to further requirements being met.

To claim the refund of amounts withheld in excess of the Treaty rate, a U.S. Holder must submit (either directly or, as described below, through the Data Medium Procedure participant) a claim for refund to the German tax authorities, with, in the case of a direct claim, the original bank voucher (or certified copy thereof) issued by

the paying entity documenting the tax withheld, within four years from the end of the calendar year in which the dividend is received. Claims for refund are made on a special German claim for refund form (Form E-USA), which must be filed with the German Federal Tax Office (Bundeszentralamt für Steuern, D-53221 Bonn, Germany). The German claim for refund form may be obtained from the German tax authorities at the same address where applications are filed or can be downloaded from the homepage of the German Federal Tax Office (http://www.bzst.de).

U.S. Holders must also submit to the German tax authorities a certification of their U.S. residency status (IRS Form 6166). This certification can be obtained from the Internal Revenue Service by filing a request for certification (generally on an IRS Form 8802, which will not be processed unless a user fee is paid) with the Internal Revenue Service, P.O. Box 71052, Philadelphia, PA 19176-6052. U.S. Holders should consult their own tax advisors regarding how to obtain an IRS Form 6166.

An IT-supported quick-refund procedure is available for dividends received (the "Data Medium Procedure — DMP"). If the U.S. Holder's bank or broker elects to participate in the DMP, it will perform administrative functions necessary to claim the Treaty refund for the beneficiaries. The refund beneficiaries must confirm to the DMP participant that they meet the conditions of the Treaty provisions and that they authorize the DMP participant to file applications and receive notices and payments on their behalf. Further each refund beneficiary must confirm that (i) it is the beneficial owner of the dividends received; (ii) it is resident in the U.S. in the meaning of the Treaty; (iii) it does not have its domicile, residence or place of management in Germany; (iv) the dividends received do not form part of a permanent establishment or fixed base in Germany; and (v) it commits, due to its participation in the DMP, not to claim separately for refund.

The beneficiaries also must provide an IRS Form 6166 certification with the DMP participant. The DMP participant is required to keep these documents in its files and prepare and file a combined claim for refund with the German tax authorities by electronic media. The combined claim provides evidence of a U.S. Holder's personal data including its U.S. Tax Identification Number.

The German tax authorities reserve the right to audit the entitlement to tax refunds for several years following their payment pursuant to the Treaty in individual cases. The DMP participant must assist with the audit by providing the necessary details or by forwarding the queries to the respective refund beneficiaries.

The German tax authorities will issue refunds denominated in euros. In the case of shares held through banks or brokers participating in the Depository, the refunds will be issued to the Depository, which will convert the refunds to U.S. dollar. The resulting amounts will be paid to banks or brokers for the account of the U.S. Holders.

#### **German Taxation of Capital Gains**

Under German income tax law, a capital gain derived from the sale or other disposition of ADRs or ordinary shares by a non-resident shareholder is subject to income tax in Germany only if such non-resident shareholder has held, directly or indirectly, ADRs or ordinary shares representing 1% or more of the registered share capital of a company at any time during the five-year period immediately preceding the sale or other disposition.

However, a U.S. Holder of ADRs or ordinary shares that qualifies for benefits under the Treaty is not subject to German income or

corporate income tax on the capital gain derived from the sale or other disposition of ADRs or ordinary shares.

#### **German Gift and Inheritance Tax**

Generally, a transfer of ADRs or ordinary shares by a shareholder at death or by way of gift will be subject to German gift or inheritance tax, respectively, if (i) the decedent or donor, or the heir, donee or other transferee is resident in Germany at the time of the transfer, or with respect to German citizens who are not resident in Germany, if the decedent or donor, or the heir, donee or other transferee has not been continuously outside of Germany for a period of more than five years; (ii) the ADRs or ordinary shares are part of the business property of a permanent establishment or a fixed base in Germany; or (iii) the ADRs or ordinary shares subject to such transfer form part of a portfolio that represents 10% or more of the registered share capital of the Company and has been held, directly or indirectly, by the decedent or donor, respectively, at the time of the transfer, actually or constructively together with related parties.

However, the right of the German government to impose gift or inheritance tax on a non-resident shareholder may be limited by an applicable estate tax treaty. In the case of a U.S. Holder, a transfer of ADRs or ordinary shares by a U.S. Holder at death or by way of gift generally will not be subject to German gift or inheritance tax by reason of the estate tax treaty between the U.S. and Germany (Convention between the Federal Republic of Germany and the United States of America for the Avoidance of Double Taxation with respect to Estate, Gift and Inheritance Taxes, German Federal Law Gazette 1982 vol. II page 846, as amended by the Protocol of December 14, 1998 and as published on December 21, 2000, German Federal Law Gazette 2001 vol. II, page 65; the "Estate Tax Treaty") so long as (i) the decedent or donor, and (ii) the heir, donee or other transferee was not domiciled in Germany for purposes of the Estate Tax Treaty at the time the gift was made, or at the time of the decedent's death, and the ADRs or ordinary shares were not held in connection with a permanent establishment or a fixed base in Germany. In general, the Estate Tax Treaty provides a credit against the U.S. federal gift or estate tax liability for the amount of gift or inheritance tax paid in Germany, subject to certain limitations, in a case where the ADRs or ordinary shares are subject to German gift or inheritance tax and U.S. federal gift or estate tax.

#### **Other German Taxes**

There are currently no German net worth, transfer, stamp or other similar taxes that would apply to a U.S. Holder on the acquisition, ownership, sale or other disposition of our ADRs or ordinary shares.

#### U.S. Taxation

The following discussion applies to U.S. Holders only if the ADRs and ordinary shares are held as capital assets for tax purposes. It does not address tax considerations applicable to U.S. Holders that may be subject to special tax rules, such as dealers or traders in securities, financial institutions, insurance companies, tax-exempt entities, regulated investment companies, U.S. Holders that hold ordinary shares or ADRs as a part of a straddle, conversion transaction or other arrangement involving more than one position, U.S. Holders that own (or are deemed for U.S. tax purposes to own) 10% or more (by vote or value) of the stock of SAP SE, U.S. Holders subject to special tax accounting rules as a result of any item of gross income with respect to the ADRs or shares being taken into account in the applicable financial statement, U.S. Holders that have a principal place of business or "tax home" outside the United States

or U.S. Holders whose "functional currency" is not the U.S. dollar and U.S. Holders that hold ADRs or ordinary shares through partnerships or other pass-through entities.

The summary set out below is based upon the U.S. Internal Revenue Code of 1986, as amended (the "Code"), the Treaty and regulations, rulings and judicial decisions thereunder at the date of this report. Any such authority may be repealed, revoked or modified, potentially with retroactive effect, so as to result in U.S. federal income tax consequences different from those discussed below. No assurance can be given that the conclusions set out below would be sustained by a court if challenged by the IRS. The discussion below is based, in part, on representations of the Depositary, and assumes that each obligation in the Deposit Agreement and any related agreements will be performed in accordance with its terms.

For U.S. federal income tax purposes, a U.S. Holder of ADRs will be considered to own the ordinary shares represented thereby. Accordingly, unless the context otherwise requires, all references in this section to ordinary shares are deemed to refer likewise to ADRs representing an ownership interest in ordinary shares.

#### U.S. Taxation of Dividends

Subject to the discussion below under "Passive Foreign Investment Company Considerations", distributions made by SAP SE with respect to ordinary shares (other than distributions in liquidation and certain distributions in redemption of stock), including the amount of German tax deemed to have been withheld in respect of such distributions, will generally be taxed to U.S. Holders as ordinary dividend income.

As discussed above, a U.S. Holder may obtain a refund of German withholding tax under the Treaty to the extent that the German withholding tax exceeds 15% of the dividend distributed. Thus, for each US\$100 of gross dividends paid by SAP SE to a U.S. Holder, the dividends (which are dependent on the euro/U.S. dollar exchange rate at the time of payment) will be initially subject to German withholding tax of US\$25 plus US\$1.375 solidarity surtax, and the U.S. Holder will receive US\$73.625. A U.S. Holder who obtains the Treaty refund will receive from the German tax authorities an additional amount in euro that would be equal to US\$11.375. For U.S. tax purposes, such U.S. Holder will be considered to have received a total distribution of US\$100, which will be deemed to have been subject to German withholding tax of US\$15 (15% of US\$100) resulting in the net receipt of US\$85 (provided the euro/U.S. dollar exchange rate at the time of payment of the dividend is the same as at the time of refund, otherwise the effective dividend may be higher or lower).

In the case of a distribution in euro, the amount of the distribution generally will equal the U.S. dollar value of the euro distributed (determined by reference to the spot currency exchange rate on the date of receipt of the distribution, or receipt by the Depositary in the case of a distribution on ADRs), regardless of whether the holder in fact converts the euro into U.S. dollar, and the U.S. Holder will not realize any separate foreign currency gain or loss (except to the extent that such gain or loss arises on the actual disposition of foreign currency received). However, a U.S. Holder may be required to recognize foreign currency gain or loss on the receipt of a refund in respect of German withholding tax to the extent the U.S. dollar value of the refund differs from the U.S. dollar equivalent of that amount on the date of receipt of the underlying dividend.

Dividends paid by SAP SE generally will constitute "portfolio income" for purposes of the limitations on the use of passive activity

losses (and, therefore, generally may not be offset by passive activity losses) and as "investment income" for purposes of the limitation on the deduction of investment interest expense. Dividends paid by SAP SE will not be eligible for the dividends received deduction generally allowed to U.S. corporations under Section 243 of the Code. Dividends paid by SAP SE to an individual are treated as "qualified dividends" subject to capital gains rates, i.e. at a maximum rate of 20%, if SAP SE was not in the prior year and, is not in the year in which the dividend is paid, a passive foreign investment company ("PFIC"). Based on our audited financial statements and relevant market and shareholder data, we believe that we were not treated as a PFIC for U.S. federal income taxes with respect to our 2019 tax year. In addition, based on our audited financial statements and our current expectations regarding the value and nature of our assets, the sources and nature of our income, and relevant market and shareholder data, we do not anticipate becoming a PFIC for the 2020 tax year. Certain US holders who are individuals, trusts, or estates, must pay a Medicare tax at a rate of 3.8% on the lesser of (i) net investment income such as dividends and (ii) the excess of modified adjusted gross income over the statutory thresholds.

#### **U.S. Taxation of Capital Gains**

In general, assuming that SAP SE at no time is a PFIC, upon a sale or exchange of ordinary shares to a person other than SAP SE, a U.S. Holder will recognize gain or loss in an amount equal to the difference between the amount realized on the sale or exchange and the U.S. Holder's adjusted tax basis in the ordinary shares. Such gain or loss will be a capital gain or loss and will be considered a long-term capital gain (taxable at a reduced rate for individuals) if the ordinary shares were held for more than one year. Capital gains may also be subject to the Medicare tax at a rate of 3.8%. The deductibility of capital losses is subject to significant limitations. Upon a sale of ordinary shares to SAP SE, a U.S. Holder may recognize a capital gain or loss or, alternatively, may be considered to have received a distribution with respect to the ordinary shares, in each case depending upon the application to such sale of the rules of Section 302 of the Code.

Deposit and withdrawal of ordinary shares in exchange for ADRs by a U.S. Holder will not result in its realization of gain or loss for U.S. federal income tax purposes.

## U.S. Information Reporting and Backup Withholding

Dividend payments made to holders and proceeds paid from the sale of shares or ADRs are subject to information reporting to the Internal Revenue Service and will be subject to backup withholding taxes (currently imposed at a 24% rate for 2019-2025) unless the holder (i) is a corporation or other exempt recipient or (ii) provides a taxpayer identification number on a properly completed IRS Form W-9 and certifies that no loss of exemption from backup withholding has occurred. Holders that are not U.S. persons are not subject to information reporting or backup withholding. However, such a holder may be required to provide a certification of its non-U.S. status in connection with payments received within the United States or through a U.S.-related financial intermediary.

Backup withholding is not an additional tax and any amounts withheld as backup withholding may be credited against a holder's U.S. federal income tax liability. A holder may obtain a refund of any excess amounts withheld under the backup withholding rules by timely filing the appropriate claim for refund with the Internal Revenue Service and furnishing any required information.

Shareholders may be subject to other U.S. information reporting requirements and should consult their own tax advisors for application of these reporting requirements to their own facts and circumstances.

#### **U.S. Foreign Tax Credit**

In general, in computing its U.S. federal income tax liability, a U.S. Holder may elect for each taxable year to claim a deduction or, subject to the limitations on foreign tax credits generally, a credit for foreign income taxes paid or accrued by it. For U.S. foreign tax credit purposes, subject to the applicable limitations under the foreign tax credit rules, German tax withheld from dividends paid to a U.S. Holder, up to the 15% provided under the Treaty will be eligible for credit against the U.S. Holder's federal income tax liability or, if the U.S. Holder has elected to deduct such taxes, may be deducted in computing taxable income. U.S. Holders should consult their tax advisors about potential U.S. tax consequences of German tax withheld and/or refunded, including with respect to fluctuation of the euro/U.S. dollar exchange rate.

For U.S. foreign tax credit purposes, dividends paid by SAP SE generally will be treated as foreign-source income and as "passive category income". Gains or losses realized by a U.S. Holder on the sale or exchange of ordinary shares generally will be treated as U.S.-source gain or loss.

## Passive Foreign Investment Company Considerations

Special and adverse U.S. tax rules apply to a U.S. Holder that holds an interest in a passive foreign investment company (PFIC). Based on current projections concerning the composition of SAP SE's income and assets, SAP SE does not believe that it will be treated as a PFIC for its current or future taxable years. However, because this conclusion is based on our current projections and expectations as to its future business activity, SAP SE can provide no assurance that it will not be treated as a PFIC in respect of its current or any future taxable years.

#### **Material Contracts**

See "Item 5. Operating and Financial Review and Prospects— Liquidity and Capital Disclosures", for information on our credit facilities.

#### **Compliance With Regulations**

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. See *Note (G.3)* to our Consolidated Financial Statements for more information.

#### **Documents on Display**

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended. In accordance with these requirements, we file reports and furnish other information as a foreign private issuer with the SEC. These materials, including this report and the exhibits thereto, may be inspected and copied at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. The SEC also maintains a Web site at <a href="https://www.sec.gov">www.sec.gov</a> that contains reports and other information regarding registrants that file electronically with the SEC. This report as well as some of the other information submitted by us to the SEC may be

accessed through this Web site. In addition, information about us is available at our Web site: www.sap.com.

## ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to various financial risks, such as market risks, including changes in foreign currency exchange rates, interest rates and equity prices, as well as credit risk and liquidity risk. We manage these risks on a Group-wide basis. Selected derivatives are exclusively used for this purpose and not for speculation, which is defined as entering into derivative instruments without a corresponding underlying transaction. Financial risk management is done centrally. See *Note (F.1)* to our Consolidated Financial Statements for our quantitative and qualitative disclosures about market risk

## ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

#### **American Depositary Shares**

#### Fees and Charges Payable by ADR Holders

Deutsche Bank Trust Company Americas is the Depositary for SAP SE's ADR program. ADR holders may be required to pay the following charges:

- taxes and other governmental charges;
- registration fees as may be in effect from time to time for the registration of transfers of SAP ordinary shares on any applicable register to the Depositary or its nominee or the custodian or its nominee in connection with deposits or withdrawals under the Deposit Agreement;
- applicable air courier, cable, telex and facsimile expenses of the Depositary;
- expenses incurred by the Depositary in the conversion of foreign currency:
- US \$5.00 or less per 100 ADSs (or portion thereof) to the Depositary for the execution and delivery of ADRs (including in connection with the depositing of SAP ordinary shares or the exercising of rights) and the surrender of ADRs;
- a maximum aggregate service fee of US \$3.00 per 100 ADSs (or portion thereof) per calendar year to the Depositary for the services performed by the Depositary in administering the ADR program, including for processing any cash dividends and other cash distributions; and
- US \$5.00 or less per 100 ADSs (or portion thereof) to the Depositary for distribution of securities other than SAP ordinary shares or rights.

These fees may at any time and from time to time be changed by agreement between SAP SE and the Depositary. These charges are

described more fully in Section 5.9 of the Amended and Restated Deposit Agreement dated as of November 25, 2009, as amended by Amendment No. 1 dated as of March 18, 2016 and as may be further amended from time to time, incorporated by reference as Exhibits 4.1.1 and 4.1.2 to this report.

Applicable service fees are either deducted from any cash dividends or other cash distributions or charged separately to holders in a manner determined by the Depositary, depending on whether ADSs are registered in the name of investors (whether certificated or in book-entry form) or held in brokerage and custodian accounts (via DTC). In the case of distributions of securities, the Depositary charges the applicable ADS record date holder concurrent with the distribution. In the case of ADSs registered in the name of the investor, whether certificated or in book entry form, the Depositary sends invoices to the applicable record date ADS holders. For ADSs held in brokerage and custodian accounts via DTC, the Depositary may, if permitted by the settlement systems provided by DTC, collect the fees through those settlement systems from the brokers and custodians holding ADSs in their DTC accounts. The brokers and custodians who hold their clients' ADSs in DTC accounts in such case may in turn charge their clients' accounts the amount of the service fees paid to the Depositary.

In the event of a refusal to pay applicable fees, the Depositary may refuse the requested services until payment is received or may set off the amount of the fees from any distribution to be made to the ADR holder, all in accordance with the Deposit Agreement.

If any taxes or other governmental charges are payable by the holders and/or beneficial owners of ADSs to the Depositary, the Depositary, the custodian or SAP may withhold or deduct from any distributions made in respect of the deposited SAP ordinary share and may sell for the account of the holder and/or beneficial owner any or all of the deposited ordinary shares and apply such distributions and sale proceeds in payment of such taxes (including applicable interest and penalties) or charges, with the holder and the beneficial owner thereof remaining fully liable for any deficiency.

## Fees and Other Payments Payable by the Depositary to SAP

In connection with the ADR program, the Depositary has agreed to make certain payments to SAP and waive certain costs of providing ADR administrative and reporting services, including reporting of ADR program activity, distribution of information to investors and managing the ADR program. For the period beginning November 25, 2018 and ending November 24, 2019, the Depositary made direct and indirect payments to SAP in an aggregate amount of US\$2,430,573.19 related to the ADR program.

## **PART II**

## ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

# ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

## ITEM 15. CONTROLS AND PROCEDURES

## **Evaluation of Disclosure Controls and Procedures**

Disclosure controls and procedures are controls and other procedures of SAP that are designed to ensure that information required to be disclosed by SAP in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by SAP in the reports that it files or submits under the Exchange Act is accumulated and communicated to SAP management, including SAP's principal executive and financial officers (i.e. SAP's Co-chief executive officers (Co-CEOs) and chief financial officer (CFO)), or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. SAP's management evaluated, with the participation of SAP's Co-CEOs and CFO the effectiveness of SAP's disclosure controls and procedures as of December 31, 2019. The evaluation was led by SAP's Global Governance Risk & Compliance function, including dedicated "SOX Champions" in all of SAP's major entities and business units with the participation of process owners, SAP's key corporate senior management, senior management of each business group, and as indicated above under the supervision of SAP's Co-CEOs and CFO. Based on the foregoing, SAP's management, including SAP's Co-CEOs and CFO, concluded that as of December 31, 2019, SAP's disclosure controls and procedures were effective.

## Management's Annual Report on Internal Control Over Financial Reporting

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 Securities Exchange Act of 1934. SAP's internal control over financial reporting is a process designed under the supervision of SAP's Co-CEOs 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 as issued by the International Accounting Standards Board.

SAP's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in "Internal Control — Integrated Framework (2013)".

Based on the assessment under these criteria, SAP management has concluded that, as of December 31, 2019, the Company's internal control over financial reporting was effective.

KPMG AG Wirtschaftsprüfungsgesellschaft, our independent registered public accounting firm, has issued its audit report on the effectiveness of SAP's internal control over financial reporting, which is included in *Item 18. Financial Statements, "Report of Independent Registered Public Accounting Firm*."

## Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting framework during the period covered by this report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

### **ITEM 16. [RESERVED]**

## ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our Supervisory Board has determined that Dr. Gunnar Wiedenfels is an "audit committee financial expert", as defined by the regulations of the Commission issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 and meeting the requirements of Item 16A. He is "independent", as such term is defined in Rule 10A-3 under the Exchange Act.

#### ITEM 16B. CODE OF ETHICS

In 2003, SAP adopted a Code of Business Conduct that applies to all employees (including all personnel in the accounting and controlling departments), managers and the members of SAP's Executive Board (including our Co-CEOs and CFO). Our Code of Business Conduct constitutes a "code of ethics" as defined in Item 16.B of Form 20-F. Our Code of Business Conduct sets standards for all dealings with customers, partners, competitors and suppliers and includes, among others, regulations with regard to confidentiality, loyalty, preventing conflicts of interest, preventing bribery, data protection and privacy and avoiding anti-competitive practices. International differences in culture, language, and legal and social systems make the adoption of uniform Codes of Business Conduct across an entire global company challenging. As a result, SAP has set forth a master code containing minimum standards. In turn, each company within the SAP Group has been required to adopt a similar code that meets at least these minimum standards, but may also include additional or more stringent rules of conduct. Newly acquired companies also are required to meet the minimum standards set forth in the Code of Business Conduct. SAP amends its Code of Business Conduct as necessary, including in February 2012 and December 2016, and most recently in March 2018. We have made our amended Code of Business Conduct publicly available by posting the full text on our Web site under

http://www.sap.com/corporate-en/investors/governance/policies-statutes.epx.

## ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

## **Audit Fees, Audit Related Fees, Tax Fees and All Other Fees**

Refer to *Note* (*G.7*) to our Consolidated Financial Statements for information on fees charged by our independent registered public

accounting firm, KPMG, for audit services and other professional services.

## Audit Committee's Pre-Approval Policies and Procedures

As required under German law, our shareholders appoint our external independent auditors to audit our financial statements, based on a proposal that is legally required to be submitted by the Supervisory Board. The Supervisory Board's proposal is based on a recommendation by the Audit Committee. See also the description in "Item 10. Additional Information — Corporate Governance,"

In 2002 our Audit Committee adopted a policy with regard to the pre-approval of audit and non-audit services to be provided by our external independent auditors. This policy, which is designed to assure that such engagements do not impair the independence of our auditors, was amended several times since 2002 with the latest changes made to reflect the provisions on audit and non-audit services introduced by European Union in 2014. The policy requires prior approval of the Audit Committee for all services to be provided by our external independent auditors for any entity of the SAP Group. With regard to non-audit services the policy distinguishes among three categories of services:

- "Prohibited services:" This category includes services that our external independent auditors must not be engaged to perform.
   These are services that are not permitted by applicable law or that would be inconsistent with maintaining the auditors' independence.
- "Services requiring universal approval:" Services of this category may be provided by our external independent auditors up to a certain aggregate amount in fees per year that is determined by the Audit Committee.
- "Services requiring individual approval:" Services of this category may only be provided by our external independent auditors if they have been individually (specifically) pre-approved by the Audit Committee or an Audit Committee member who is authorized by the Audit Committee to make such approvals.

Our Chief Accounting Officer or individuals empowered by him review all individual requests to engage our external independent auditors as a service provider in accordance with this policy and determines the category to which the requested service belongs. All requests for engagements with expected fees over a specified limit are additionally reviewed by our CFO. Based on the determination of the category the request is (i) declined if it is a "prohibited service," (ii) approved if it is a "service requiring universal approval" and the maximum aggregate amount fixed by the Audit Committee has not been reached or (iii) forwarded to the Audit Committee for individual approval if the "service requires individual approval" or is a "service requiring universal approval" and the maximum aggregate amount fixed by the Audit Committee has been exceeded.

Our Audit Committee's pre-approval policies also include information requirements to ensure the Audit Committee is kept aware of the volume of engagements involving our external independent auditors that were not individually pre-approved by the Audit Committee itself.

Substantially all of the work performed to audit our Consolidated Financial Statements was performed by our principal independent public accounting firms's full-time, permanent employees.

## ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Rule 10A-3 of the Exchange Act requires that all members of our audit committee be independent, subject to certain exceptions. In accordance with German law, the Audit Committee consists of both employee and shareholder elected members. Rule 10A-3 provides an exception for an employee of a foreign private issuer such as SAP who is not an executive officer of that issuer and who is elected to the supervisory board or audit committee of that issuer pursuant to the issuer's governing law. In this case, the employee is exempt from the independence requirements of Rule 10A-3 and is permitted to sit on the audit committee.

We rely on this exemption. Our Audit Committee includes three employee representatives, Panagiotis Bissiritsas, Margret Klein-Magar and James Wright, who were appointed to our Supervisory Board pursuant to the Agreement on the Involvement of Employees in SAP SE (see "Item 6. Directors, Senior Management and Employees." for details). We believe that our reliance on this exemption does not materially adversely affect the ability of our Audit Committee to act independently and to satisfy the other requirements of Rule 10A-3.

## ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

At the Annual General Meeting of Shareholders on May 17, 2018, the Executive Board was authorized to acquire, on or before May 16, 2023, up to 120 million shares of SAP. The authorization from May 17, 2018 replaced the authorization from June 4, 2013.

The authorization is subject to the provision that the shares to be purchased, together with any other shares already acquired and held by SAP or which are attributable to SAP pursuant to Section 71d and Section 71e AktG (German Stock Corporation Act), do not account for more than 10% of SAP's capital stock.

In 2019 there were no purchases made by us or on our behalf or on behalf of SAP of SAP shares or SAP ADRs. The maximum number of SAP shares that SAP could purchase under existing repurchase programs was 87,996,069 as of December 31, 2019.

Furthermore, in 2019 SAP announced its intention to repurchase shares and/or issue a special dividend in 2020 with a combined volume of  $\[ \in \]$ 1.5 billion.

## ITEM 16F. CHANGES IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

## ITEM 16G. DIFFERENCES IN CORPORATE GOVERNANCE PRACTICES

The following summarizes the principal ways in which our corporate governance practices differ from the NYSE corporate governance rules applicable to U.S. domestic issuers (the NYSE Rules).

#### Introduction

SAP is incorporated under the laws of the European Union and Germany, with securities publicly traded on markets in Germany, including the Frankfurt Exchange and in the United States on the NYSE.

The NYSE Rules permit foreign private issuers to follow applicable home country corporate governance practices in lieu of the NYSE corporate governance standards, subject to certain exceptions. Foreign private issuers electing to follow home country corporate governance rules are required to disclose the principal differences in their corporate governance practices from those required under the NYSE Rules. This Item 16G summarizes the principal ways in which SAP's corporate governance practices differ from the NYSE Rules applicable to domestic issuers.

#### **Legal Framework**

The primary sources of law relating to the corporate governance of a European Company are the Council Regulation (EC) No. 2157/2001 on the Statute for a European Company (the "SE Regulation"), the German Act on the Implementation of Council Regulation No. 2157/2001 of October 8, 2001 on the Statute for a European Company (Gesetz zur Ausführung der Verordnung (EG) Nr. 2157/2001 des Rates vom 8. Oktober 2001 über das Statut der Europäischen Gesellschaft (SE) – SE-Ausführungsgesetz; "SE-AG") of December 22, 2004, and the German Stock Corporation Act (Aktiengesetz). Additionally, the European Regulation (EU) No 596/2014 of the European Parliament and the Council on market abuse (the "MAR"), the German Securities Trading Act (Wertpapierhandelsgesetz), the German Securities Purchase and Take Over Act (Wertpapiererwerbs- und Übernahmegesetz), the Stock Exchange Admission Regulations, the German Commercial Code (Handelsgesetzbuch) and certain other German statutes contain corporate governance rules applicable to SAP. In addition to these mandatory rules, the German Corporate Governance Code ("GCGC") summarizes the mandatory statutory corporate governance principles found in the German Stock Corporation Act and other provisions of German law. Further, the GCGC contains supplemental recommendations and suggestions for standards on

responsible corporate governance intended to reflect generally accepted best practices.

The German Stock Corporation Act requires the executive and the supervisory board of publicly listed companies like SAP to declare annually that the recommendations set forth in the GCGC have been and are being complied with or which of the recommendations have not been or are not being complied with and why not. SAP disclosed and reasoned deviations from a few of the GCGC recommendations in its Declaration of Implementation on a yearly basis from 2003 onwards. In its most recent Declaration of Implementation issued in October 2019, SAP declared that it has complied with all recommendations set out in the GCGC since the last declaration and will continue to comply with them also in the future. Declarations from 2012 forward are available on the SAP website

#### Significant Differences

We believe the following to be the significant differences between applicable European and German corporate governance practices, as SAP has implemented them, and those applicable to domestic companies under the NYSE Rules.

## SAP SE is a European Company With a Two-Tier Board System

SAP is governed by three separate bodies: (i) the Supervisory Board, which counsels, supervises and controls the Executive Board; (ii) the Executive Board, which is responsible for the management of SAP; and (iii) the General Meeting of Shareholders. The rules applicable to these governing bodies are defined by European and German law and by SAP's Articles of Incorporation. This corporate structure differs from the unitary board of directors established by the relevant laws of all U.S. states and the NYSE Rules. Under the SE Regulation and the German Stock Corporation Act, the Supervisory Board and Executive Board are separate and no individual may be a member of both boards. See "Item 10. Additional Information — Corporate Governance" for additional information on the corporate structure.

#### **Director Independence Rules**

The NYSE Rules require that a majority of the members of the board of directors of a listed issuer and each member of its nominating, corporate governance, compensation and audit committee be "independent." As a foreign private issuer, SAP is not subject to the NYSE board, compensation committee and corporate governance committee independence requirements but instead can elect to follow its home country rules. With respect to the audit committee, SAP is required to satisfy Rule 10A-3 of the Exchange Act, which provides certain exemptions from the audit committee independence requirements in the case of employee board representatives. The NYSE Rules stipulate that no director qualifies as "independent" unless the board of directors has made an affirmative determination that the director has no material direct or indirect relationship with the listed company. However, under the NYSE Rules a director may still be deemed independent even if the director or a member of a director's immediate family has received during a 12 month period within the prior three years up to \$120,000 in direct compensation. In addition, a director may also be deemed independent even if a member of the director's immediate family works for the company's auditor in a non-partner capacity and not on the company's audit.

By contrast, the German Stock Corporation Act and the GCGC require that the Supervisory Board ensure that its members collectively have the knowledge, competencies and professional experience required to properly perform their duties. Additionally, the GCGC recommends that the Supervisory Board should implement and adhere to concrete director independence criteria, specify what it considers to be appropriate numbers of shareholders' representatives and Supervisory Board members generally which are independent within the meaning of Section 5.4.2 of the Code, and determine annually whether such numbers have been met. According to this definition, a Supervisory Board member is not to be considered independent in particular if s/he has personal or business relations with the company, its executive bodies, a controlling shareholder or an enterprise associated with any of the preceding persons and entities which could cause a substantial and sustained conflict of interest. The members of the Supervisory Board must ensure that they have enough time to perform their board duties and must carry out their duties carefully and in the company's best interests. They must be loyal to SAP in their conduct, and the GCGC recommends that they should not accept appointment to governing bodies of, or exercise advisory functions at, companies that are in significant competition with SAP. The GCGC further recommends that each member of the Supervisory Board should inform the Supervisory Board of any conflicts of interest, and that material and sustained conflicts of interest involving a member of the Supervisory Board should result in the termination of that member's Supervisory Board mandate. Supervisory Board members must disclose any planned conclusion of advisory or other service agreements or contracts for work with SAP, or loan agreements between them or persons closely related to them and SAP to the Supervisory Board promptly. Such agreements require the consent of the Supervisory Board. The Supervisory Board may grant its permission for any such transaction only if it is based on terms and conditions that are standard for the type of transaction in question and if the transaction is not contrary to SAP's interest.

SAP complies with the director independence requirements and recommendations described above. In particular, the Supervisory Board of SAP SE determined in fiscal year 2019 that all nine shareholders' representatives on the Supervisory Board are independent within the meaning of Section 5.4.2 of the GCGC, and that also considering the employee representatives the Supervisory Board has what it considers to be an adequate number of independent members.

Section 5.3.2 of the GCGC recommends that the chairperson of the Audit Committee of the Supervisory Board should have specific knowledge and experience in applying accounting principles and internal control procedures, and should be independent, and not be a former member of the Executive Board whose term of office ended less than two years ago. Furthermore, the chairperson of the Audit Committee should not simultaneously chair the Supervisory Board as a whole. Dr. Erhard Schipporeit who was the Chairman of SAP's Audit Committee until May 15, 2019 as well as Dr. Gunnar Wiedenfels who is the current Chairman of the Audit Committee meet these recommendations. However, applicable European and German corporate law does not require the Supervisory Board to make an affirmative determination for each individual member that it is independent or that a majority of Supervisory Board members or the members of a specific committee are independent. As described above, the GCGC only recommends that the Supervisory Board determines the independence of its members.

The NYSE independence requirements are closely linked with risks specific to unitary boards of directors that are customary for U.S. companies. In contrast, the two-tier board structure requires a strict separation of the executive board and supervisory board. In addition, the supervisory board of a European Company formed by conversion from a large German stock corporation which was subject to the principle of employee codetermination as outlined in the German Co-Determination Act of 1976 (Mitbestimmungsgesetz) is subject to at least the same level of employee participation which formerly existed in the German stock corporation that was converted to an SE. The terms of employee participation with regard to the Supervisory Board of SAP SE are, among others, set out in the Agreement on the Involvement of Employees in SAP SE. As a result, the Supervisory Board of SAP SE consists of 18 members, of which nine are representatives of SAP SE's shareholders elected at the Annual General Meeting and nine members are representatives of the European employees. Only a shareholders' representative may be elected as chairperson of the Supervisory Board. In case of a tied vote, the vote of the chairperson and, in the event that the chairperson does not participate in passing the resolution, the vote of the deputy chairperson, provided that he or she is a shareholders' representative, will be decisive (casting vote). This board structure creates a different system of checks and balances, including employee participation, and cannot be directly compared with a unitary board system.

#### **Audit Committee Independence**

As a foreign private issuer, the NYSE Rules require SAP to establish an Audit Committee that satisfies the requirements of Rule 10A-3 of the Exchange Act with respect to audit committee independence. SAP is in compliance with these requirements. The Chairman of SAP's Audit Committee, Gerhard Oswald and Dr. Friederike Rotsch meet the independence requirements of Rule 10A-3 of the Exchange Act. The other three Audit Committee members, Panagiotis Bissiritsas, Margret Klein-Magar and James Wright, are employee representatives who are eligible for the exemption provided by Rule 10 A-3 (b) (1) (iv) (C) (see "Item 16D Exemptions from the listing standards for audit committees" for details).

The Audit Committee independence requirements are similar to the Board independence recommendations of the GCGC. See the section above under "Director Independence Rules." Nonetheless, SAP meets the NYSE Rules on audit committee independence applicable to foreign private issuers.

#### Rules on Non-Management Board Meetings are Different

Section 303 A.03 of the NYSE Rules stipulates that the non-management board of each listed issuer must meet at regularly scheduled executive sessions without the management. Under applicable European and German corporate law and the GCGC the Supervisory Board is entitled but not required to exclude Executive Board members from its meetings. The Supervisory Board exercises this right generally during its meetings.

#### Rules on Establishing Committees Differ

Pursuant to Section 303 A.04 and 303 A.05 of the NYSE Rules listed companies are required to set up a Nominating/Corporate Governance Committee and a Compensation Committee, each composed entirely of independent directors and having a written charter specifying the committee's purpose and responsibilities. In

addition, each committee's performance must be reviewed annually. Applicable European and German corporate law does not mandate the creation of specific supervisory board committees. The GCGC recommends that the Supervisory Board establish an Audit Committee and a Nomination Committee. SAP has the following committees, which are in compliance with the GCGC: General and Compensation Committee, Audit Committee, Technology and Strategy Committee, Finance and Investment Committee, Nomination Committee, Special Committee (until May 15, 2019) and People and Organization Committee (See "Item 10. Additional Information — Corporate Governance" for more information).

#### Rules on Shareholders' Compulsory Approval are Different

Section 312 of the NYSE Rules requires U.S. companies to seek shareholder approval of all equity-compensation plans, including certain material revisions thereto (subject to certain exemptions as described in the rules), issuances of common stock, including convertible stock, if the common stock has, or will have upon issuance, voting power of or in excess of 20% of the then outstanding common stock, and issuances of common stock if they trigger a change of control.

According to applicable European law, the German Stock Corporation Act and other applicable German laws, shareholder approval is required for a broad range of matters, such as amendments to the articles of association, certain significant corporate transactions (including inter-company agreements and material restructurings), the offering of stock options and similar equity compensation to its Executive Board members or its employees by a way of a conditional capital increase or by using treasury shares (including significant aspects of such an equity compensation plan as well as the exercise thresholds), the issuance of new shares, the authorization to purchase the corporation's own shares, and other essential issues, such as transfers of all, or substantially all, of the assets of the stock corporation, including shareholdings in subsidiaries.

## **Specific Principles of Corporate Governance**

Under the NYSE Rules Section 303A.09 listed companies must adopt and disclose corporate guidelines. Since October 2007, SAP has applied, with few exceptions, and since February 2018 without any exceptions, the recommended corporate governance standards of the GCGC rather than company-specific principles of corporate governance. The GCGC recommendations differ from the NYSE Standards primarily as outlined in this Item 16G.

#### Specific Code of Business Conduct

NYSE Rules Section 303 A.10 requires listed companies to adopt and disclose a code of business conduct and ethics for directors, officers and employees, and to disclose promptly any waivers of the code for directors or executive officers. Although not required under applicable European and German law, SAP has adopted a Code of Business Conduct, which is equally applicable to employees, managers and members of the Executive Board. SAP complies with the requirement to disclose the Code of Business Conduct and any waivers of the code with respect to directors and executive officers. See "Item 16B. Code of Ethics" for details.

## **PART III**

#### ITEM 17. FINANCIAL STATEMENTS

Not applicable.

#### **ITEM 18. FINANCIAL STATEMENTS**

The Consolidated Financial Statements are included herein on pages F-1 through F-81. The following are filed as part of this report:

- Report of Independent Registered Public Accounting Firm.
- Consolidated Financial Statements
  - Consolidated Income Statements for the years ended December 31, 2019, 2018, and 2017.
  - Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018, and 2017.
  - Consolidated Statements of Financial Position as of December 31, 2019 and 2018.
  - Consolidated Statements of Changes in Equity for the years ended December 31, 2019, 2018, and 2017.
  - Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018, and 2017.
  - Notes to the Consolidated Financial Statements.

#### **ITEM 19. EXHIBITS**

The following documents are filed as exhibits to this report:

- 1 Articles of Incorporation (Satzung) of SAP SE, effective as of June 4, 2018 (English translation). (1)
- 2.1 Form of global share certificate for ordinary shares (English translation). (2)
  Certain instruments which define rights of holders of long-term debt of SAP SE and its subsidiaries are not being filed because the total amount of securities authorized under each such instrument does not exceed 10% of the total consolidated assets of SAP SE and its subsidiaries. SAP SE and its subsidiaries hereby agree to furnish a copy of each such instrument to the Securities and Exchange Commission upon request.
- 4.1.1 Amended and Restated Deposit Agreement dated as of November 25, 2009, by and among SAP SE, Deutsche Bank Trust Company Americas as Depositary, and all owners and holders from time to time of American Depositary Receipts issued thereunder. (3)
- 4.1.2 Amendment No. 1 dated March 18, 2016 to the Amended and Restated Deposit Agreement, by and among SAP SE, Deutsche Bank Trust Company Americas as Depositary, and all owners and holders from time to time of American Depositary Receipts issued thereunder, including the form of American Depositary Receipt. (4)
- For a list of our subsidiaries see *Note (G.9)* to our Consolidated Financial Statements in "*Item 18. Financial Statements*".
- 12.1 Certification of Christian Klein, Co-Chief Executive Officer, required by Rule 13a-14(a) or Rule 15d-14(a).
- 12.2 Certification of Jennifer Morgan, Co-Chief Executive Officer, required by Rule 13a-14(a) or Rule 15d-14(a).
- 12.3 Certification of Luka Mucic, Chief Financial Officer, required by Rule 13a-14(a) or Rule 15d-14(a).
- 13.1 Certification of Christian Klein, Co-Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 13.2 Certification of Jennifer Morgan, Co-Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 13.3 Certification of Luka Mucic, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 15 Consent of Independent Registered Public Accounting Firm.

101.INS iXBRL Instance Document

101.SCH iXBRL Taxonomy Schema Linkbase Document

101.CAL iXBRL Taxonomy Calculation Linkbase Document

101.DEF iXBRL Taxonomy Definition Linkbase Document

101.LAB iXBRL Taxonomy Labels Linkbase Document

101.PRE iXBRL Taxonomy Presentation Linkbase Document

104. Cover Page Interactive Data File (formatted as Inline XBRL and included in Exhibit 101

<sup>(1)</sup> Incorporated by reference to SAP SE's Annual Report on Form 20-F filed with the SEC on February 28, 2019.

<sup>(2)</sup> Incorporated by reference to Exhibit 2.1 to SAP SE's 2014 Annual Report on Form 20-F filed with the SEC on March 20, 2015.

<sup>(3)</sup> Incorporated by reference to Exhibit 99.(a)(2) of Post Effective Amendment #1 to SAP SE's Registration Statement on Form F-6 filed on November 25, 2009.

<sup>(4)</sup> Incorporated by reference to Exhibit 99.(a)(2) of Post Effective Amendment #2 to SAP SE's Registration Statement on Form F-6 filed on March 18, 2016.

## **Signatures**

The Registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this report on its behalf.

SAP SE (Registrant)

By: /s/ CHRISTIAN KLEIN

Name: Christian Klein

Title: Co-Chief Executive Officer

Dated: February 27, 2020

SAP SE (Registrant)

By: /s/ JENNIFER MORGAN

Name: Jennifer Morgan

Title: Co-Chief Executive Officer

Dated: February 27, 2020

By: /s/ LUKA MUCIC

Name: Luka Mucic

Title: Chief Financial Officer

Dated: February 27, 2020

#### SAP SE AND SUBSIDIARIES

## **Index to the consolidated Financial Statements**

	Page
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Financial Statements IFRS:	
Consolidated Income Statements for the years ended December 31, 2019, 2018 and 2017	F-5
Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017	F-6
Consolidated Statements of Financial Position as of December 31, 2019 and 2018	F-7
Consolidated Statements of Changes in Equity for the years ended December 31, 2019, 2018 and 2017	F-8
Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017	F-9
Notes to the Consolidated Financial Statements IFRS	F-10 to F-81

## Report of Independent Registered Public Accounting Firm

To the Shareholders and Supervisory Board of SAP SE:

Opinions on the Consolidated Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of SAP SE and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated income statements, and the related consolidated statements of comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019 based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

#### Change in Accounting Principles

As discussed in Note D.8 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of International Financial Reporting Standard 16, Leases.

As discussed in Note IN.1 to the consolidated financial statements, the Company has changed its method of accounting for revenue from contracts with customers as of January 1, 2018 due to the adoption of International Financial Reporting Standard 15, Revenue from Contracts with Customers.

#### Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

#### Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that,

in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; 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 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.

#### Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

#### Software license revenue recognition

As discussed in note A.1 to the consolidated financial statements, SAP generated revenue in 2019 of EUR 27.6 billion, of which EUR 16.1 billion relate to revenues from sales of software licenses.

We identified the evaluation of software license revenue recognition as a critical audit matter due to the complex nature of SAP's customer contracts. A high degree of auditor judgment was involved, in particular, evaluating SAP's assessment of the following:

- (i) whether various contracts are interrelated,
- (ii) whether product and services qualify as separate performance obligations,
- (iii) the standalone selling price used to allocate the transaction price of a customer contract to the performance obligations in the contract. The primary procedures we performed to address this critical audit matter included the following.

We tested certain internal controls within the revenue process to identify interrelated contracts and separate performance obligations, to develop estimates of stand-alone selling prices to allocate the transaction price.

For a sample of customer contracts, which were selected using a statistical approach, we also:

- inspected the underlying contractual agreements and other related documents as well as inquiries with SAP's accounting and/or sales representatives to evaluate SAP's assessment of whether contracts were interrelated as well as identified performance obligations and allocation of transaction price;
- obtained and inspected external confirmations of the key terms and conditions from the respective customers to test the contract identification as well as the performance obligations and the transaction price.

We evaluated the stand-alone selling prices for each of the deliverables that qualified as a separate performance obligation by assessing the methodology applied, testing mathematical accuracy of the underlying calculations, and testing a sample of customer contracts to evaluate the underlying transaction data.

#### Assessment of the Group's tax uncertainties

As discussed in note C.5 to the consolidated financial statements, SAP operates in multiple tax jurisdictions with complexities and uncertainties due to different interpretations of tax laws, such as those involving revenue sharing and cost reimbursement arrangements between SAP Group entities, changing tax laws, and intercompany financing transactions. The nature of these activities can result in uncertainties in the estimation of the related tax exposures. As at 31 December 2019 SAP disclosed contingent liabilities relating to tax uncertainties of EUR 2,013 million.

We identified the assessment of the Group's tax uncertainties as a critical audit matter because complex auditor judgment and specialized skills were required in evaluating the Group's interpretations of tax law and estimate of related exposures.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the tax process including controls over the Group's assessment of tax law and the process to estimate the related exposures. We assessed the competency, skill and objectivity of the external experts as well as the opinions they prepared. We inquired of the Group's tax department and inspected correspondence with the responsible tax authorities. We involved our tax professionals with specialized skills and knowledge, who assisted in evaluating SAP's conclusion's over the estimate of tax uncertainties based on knowledge and experience regarding the application of relevant legislation by tax authorities and the courts.

Recognition and initial measurement of intangible assets from the acquisition of Qualtrics International Inc., Provo/USA

As discussed in note D.1 to the consolidated financial statements, on January 23, 2019, SAP acquired Qualtrics International Inc., Provo, USA ("Qualtrics"). The purchase price amounted to EUR 6,449 million. In allocating the purchase price, SAP recognised intangible assets in the amount of EUR 1,803 million, and goodwill in the amount of EUR 5,015 million.

We identified the evaluation of the recognition and initial measurement of intangible assets acquired in the Qualtrics acquisition as a critical audit matter. It required especially subjective auditor judgement to assess the projections of the acquired business's revenues and margins, asset-specific revenue and margin adjustments, estimated useful lives, royalty and attrition rates, as well as the cost of capital used to calculate the acquisition-date fair values of the identifiable intangible assets acquired. In addition, specialized skills and knowledge were needed to test significant assumptions used in the discounted cash flow model including the assumptions listed above.

The primary procedures we performed to address this critical audit matter are as follows:

We tested certain internal controls over the Company's acquisition-date valuation process including controls to develop the relevant assumptions mentioned above.

We involved our valuation professionals with specialized skills and knowledge, who assisted in testing the assumptions as listed above by comparing them to our own expectations based on our knowledge of the acquired business, our experience in the software industry, and taking into account recent comparable transactions. The assumptions and parameters underlying the cost of capital were compared with our own assumptions and publicly available data.

Recoverability of the carrying amount of goodwill for Qualtrics Segment

As discussed in note D.2 to the consolidated financial statements, SAP performs its annual goodwill impairment test at the level of its operating segments as there are no lower levels within SAP at which goodwill is monitored. Goodwill allocated to the Qualtrics Segment is EUR 2,882 million as of December 31, 2019 (4.8 % of the consolidated statement of financial position total).

We identified the recoverability of the carrying amount of goodwill for the Qualtrics Segment as a critical audit matter. The estimated recoverable amount of the Qualtrics Segment approximated its carrying value, indicating a higher risk that the goodwill may be impaired as of December 2019. The assessment of the recoverable amount requires complex and significant auditor judgement to test. The key assumptions relate to the budgeted revenue growth, budgeted operating margin, and discount rate, whereas minor changes to those assumptions have a significant effect on the estimated recoverable amount.

The primary procedures we performed to address this critical audit matter included the following.

We tested certain internal controls over the impairment process including budgeted revenue growth, budgeted operating margin and discount rate assumptions for the Qualtrics Segment. We involved our valuation professionals with specialized skills and knowledge, who assisted in assessing the discount rate used in measuring the recoverable amount. We evaluated SAP's assumptions listed above by comparing the fair value less cost of disposal to our own expectations. We performed an independent sensitivity analysis for each assumption listed above using our own assumptions that we have developed based on external sources.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

We have served as the Company's auditor since 2002.

Mannheim, Germany February 19, 2020

### SAP SE AND SUBSIDIARIES

## **Consolidated Financial Statements IFRS**

## III Consolidated Income Statements of SAP Group for the Years Ended December 31

€ millions, unless otherwise stated	Notes	2019	2018	2017
Cloud		6,933	4,993	3,769
Software licenses		4,533	4,647	4,872
Software support		11,547	10,981	10,908
Software licenses and support		16,080	15,628	15,780
Cloud and software		23,012	20,622	19,549
Services		4,541	4,086	3,912
Total revenue	(A.1), (C.2)	27,553	24,708	23,461
Cost of cloud		-2,534	-2,068	-1,660
Cost of software licenses and support		-2,159	-2,092	-2,234
Cost of cloud and software		-4,692	-4,160	-3,893
Cost of services		-3,662	-3,302	-3,158
Total cost of revenue		-8,355	-7,462	-7,051
Gross profit		19,199	17,246	16,410
Research and development		-4,292	-3,624	-3,352
Sales and marketing		-7,693	-6,781	-6,924
General and administration		-1,629	-1,098	-1,075
Restructuring	(B.6)	-1,130	-19	-182
Other operating income/expense, net		18	-20	1
Total operating expenses		-23,081	-19,005	-18,584
Operating profit		4,473	5,703	4,877
Other non-operating income/expense, net	(C.3)	-74	-56	-36
Finance income		787	371	476
Finance costs		-589	-418	-288
Financial income, net	(C.4)	198	-47	188
Profit before tax	(C.2)	4,596	5,600	5,029
Income tax expense	(C.5)	-1,226	-1,511	-983
Profit after tax		3,370	4,088	4,046
Attributable to owners of parent		3,321	4,083	4,008
Attributable to non-controlling interests		50	6	38
Earnings per share, basic (in €)	(C.6)	2.78	3.42	3.35

The accompanying Notes are an integral part of these Consolidated Financial Statements. Under the adoption methods we chose for IFRS 9, 15, and 16, prior-year numbers are not restated to conform to the new accounting policies. For more information, see *Note (IN.1)*.

## Consolidated Statements of Comprehensive Income of SAP Group for the Years Ended December 31

€ millions	Notes	2019	2018	2017
.iil Profit after tax		3,370	4,088	4,046
Items that will not be reclassified to profit or loss				
Remeasurements on defined benefit pension plans, before tax		-57	12	29
Income taxes relating to remeasurements on defined benefit pension plans		5	-1	-7
Remeasurements on defined benefit pension plans, net of tax		-52	11	22
Other comprehensive income for items that will not be reclassified to profit or loss, net of tax		-52	11	22
Items that will be reclassified subsequently to profit or loss				
Gains (losses) on exchange differences on translation, before tax		537	910	-2,730
Reclassification adjustments on exchange differences on translation, before tax		0	0	0
Exchange differences, before tax		537	910	-2,730
Income taxes relating to exchange differences on translation		0	0	-2
Exchange differences, net of tax	(E.2)	537	910	-2,732
Gains (losses) on remeasuring available-for-sale financial assets, before tax		0	0	114
Reclassification adjustments on available-for-sale financial assets, before tax		0	0	-250
Available-for-sale financial assets, before tax		0	0	-136
Income taxes relating to available-for-sale financial assets		0	0	1
Available-for-sale financial assets, net of tax		0	0	-135
Gains (losses) on cash flow hedges/cost of hedging, before tax		-24	-10	81
Reclassification adjustments on cash flow hedges/cost of hedging, before tax		22	-22	-41
Cash flow hedges/cost of hedging, before tax	(F.1)	-2	-32	39
Income taxes relating to cash flow hedges/cost of hedging		0	9	-10
Cash flow hedges/cost of hedging, net of tax	(E.2)	-1	-23	29
Other comprehensive income for items that will be reclassified to profit or loss, net of tax		536	887	-2,838
Other comprehensive income, net of tax		483	898	-2,816
Total comprehensive income		3,854	4,986	1,229
Attributable to owners of parent		3,804	4,980	1,191
Attributable to non-controlling interests		50	6	38

The accompanying Notes are an integral part of these Consolidated Financial Statements. Under the adoption methods we chose for IFRS 9, 15, and 16, prior-year numbers are not restated to conform to the new accounting policies. For more information, see *Note (IN.1)*.

## $\P$ Consolidated Statements of Financial Position of SAP Group as at December 31

€ millions	Notes	2019	2018
Cash and cash equivalents	(E.3)	5,314	8,627
Other financial assets	(D.5), (E.3)	297	448
Trade and other receivables	(A.2)	7,908	6,362
Other non-financial assets	(A.3), (G.1)	1,188	889
Tax assets		506	293
Total current assets		15,213	16,620
Goodwill	(D.2)	29,162	23,736
Intangible assets	(D.3)	4,491	3,227
Property, plant, and equipment	(D.4), (D.8)	5,496	3,553
Other financial assets	(D.5), (E.3)	2,336	1,536
Trade and other receivables	(A.2)	129	118
Other non-financial assets	(A.3), (G.1)	1,701	1,301
Tax assets		435	397
Deferred tax assets	(C.5)	1,251	1,014
Total non-current assets		45,002	34,881
Total assets		60,215	51,502
Trade and other payables		1,581	1,491
Tax liabilities		255	611
Financial liabilities	(E.3), (D.8)	3,273	1,125
Other non-financial liabilities	(B.3), (B.5), (G.2)	4,818	4,120
Provisions	(A.4), (B.4), (B.5), (B.6)	268	110
Contract liabilities	(A.1)	4,266	3,028
Total current liabilities		14,462	10,486
Trade and other payables		8	129
Tax liabilities		538	495
Financial liabilities	(E.3), (D.8)	12,923	10,553
Other non-financial liabilities	(B.3), (B.5), (G.2)	814	501
Provisions	(A.4), (B.4), (B.5), (B.6)	478	270
Deferred tax liabilities	(C.5)	82	102
Contract liabilities	(A.1)	89	88
Total non-current liabilities		14,931	12,138
Total liabilities		29,393	22,624
Issued capital		1,229	1,229
Share premium		545	543
Retained earnings		28,783	27,407
Other components of equity		1,770	1,234
Treasury shares		-1,580	-1,580
Equity attributable to owners of parent		30,746	28,832
Non-controlling interests		76	45
Total equity	(E.2)	30,822	28,877
Total equity and liabilities		60,215	51,502

The accompanying Notes are an integral part of these Consolidated Financial Statements.

Under the adoption method we chose for IFRS 16, prior-year numbers are not restated to conform to the new accounting policies. For more information, see Note (/N.1).

## Consolidated Statements of Changes in Equity of SAP Group for the Years Ended December 31

€ millions				Equity Attr	ibutable to Owne	ers of Parent	Non-	Total Equity
	Issued Capital	Share Premium	Retained Earnings	Other Components of Equity	Treasury Shares	Total	Controlling Interests	
Notes	(E.2)	(E.2)		(E.2)	(E.2)			
1/1/2017	1,229	599	22,287	3,346	-1,099	26,361	21	26,383
<b>Jil</b> Profit after tax			4,008			4,008	38	4,046
Other comprehensive income			22	-2,838		-2,816		-2,816
Comprehensive income			4,029	-2,838		1,191	38	1,229
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
Hyperinflation			-17			-17		-17
Additions from business combinations			-33			-33	35	2
Other changes			2			2	2	4
12/31/2017	1,229	570	24,769	508	-1,591	25,484	31	25,515
Adoption of IFRS 15			83			83		83
Adoption of IFRS 9			135	-160		-25		-25
1/1/2018	1,229	570	24,987	347	-1,591	25,542	31	25,573
Profit after tax	•••••••••••••••••••••••••••••••••••••••		4,083			4,083	6	4,088
Other comprehensive income	••••••••••••••		11	887		898		898
Comprehensive income		<del></del>	4,093	887		4,980	6	4,986
Share-based payments		-40				-40		-40
Dividends			-1,671			-1,671	-13	-1,684
Reissuance of treasury shares under share-based payments		13			11	24		24
Shares to be issued			7			7		7
Hyperinflation			-8			-8		-8
Changes in non-controlling interests						0	19	19
Other changes			-2			-2	3	1
<b>1</b> 2/31/2018	1,229	543	27,407	1,234	-1,580	28,832	45	28,877
Adoption of IFRS 16			-71			-71		-71
1/1/2019	1,229	543	27,336	1,234	-1,580	28,761	45	28,807
III Profit after tax			3,321			3,321	50	3,370
Other comprehensive income			-52	536		483		483
Comprehensive income			3,268	536		3,804	50	3,854
Share-based payments		2				2		2
Dividends			-1,790			-1,790	-19	-1,810
Hyperinflation			-29			-29		-29
Other changes			-2			-2	0	-2
<b>12/31/2019</b>	1,229	545	28,783	1,770	-1,580	30,746	76	30,822

The accompanying Notes are an integral part of these Consolidated Financial Statements. Under the adoption methods we chose for IFRS 9, 15, and 16, prior-year numbers are not restated to conform to the new accounting policies. For more information, see Note (IN.1).

## Consolidated Statements of Cash Flows of SAP Group for the Years Ended December 31

€ millions	Notes	2019	2018	2017
.ill Profit after tax		3,370	4,088	4,046
Adjustments to reconcile profit after tax to net cash flow from operating activities:				
Depreciation and amortization	(D.2)-(D.4)	1,872	1,362	1,272
Share-based payment expense	(B.3)	1,835	830	1,120
.iul Income tax expense	(C.5)	1,226	1,511	983
.III Financial income, net	(C.4)	-198	47	-188
Decrease/increase in allowances on trade receivables		14	-67	-32
Other adjustments for non-cash items		-54	3	-9
Decrease/increase in trade and other receivables		-1,469	136	-309
Decrease/increase in other assets		-583	-477	-325
Increase/decrease in trade payables, provisions, and other liabilities		328	240	63
Increase/decrease in contract liabilities		984	-561	718
Share-based payments		-1,257	-971	-849
Interest paid		-341	-251	-200
Interest received		97	99	88
Income taxes paid, net of refunds		-2,329	-1,687	-1,332
Net cash flows from operating activities		3,496	4,303	5,045
Cash flows for business combinations, net of cash and cash equivalents acquired	(D.1)	-6,215	-2,140	-291
Proceeds from sale of subsidiaries or businesses		61	0	0
Purchase of intangible assets and property, plant, and equipment		-817	-1,458	-1,275
Proceeds from sales of intangible assets or property, plant, and equipment		71	57	97
Purchase of equity or debt instruments of other entities		-900	-1,013	-2,914
Proceeds from sales of equity or debt instruments of other entities		778	1,488	3,272
Net cash flows from investing activities		-7,021	-3,066	-1,112
Dividends paid	(E.2)	-1,790	-1,671	-1,499
Dividends paid on non-controlling interests		-17	-7	-45
Purchase of treasury shares	(E.2)	0	0	-500
Proceeds from borrowings	(E.3)	3,622	6,368	27
Repayments of borrowings	(E.3)	-1,309	-1,407	-1,391
Payments of lease liabilities		-403	0	0
Transactions with non-controlling interests		0	0	2
Net cash flows from financing activities		102	3,283	-3,406
Effect of foreign currency rates on cash and cash equivalents		110	97	-218
Net decrease/increase in cash and cash equivalents		-3,313	4,617	309
$\Phi$ Cash and cash equivalents at the beginning of the period	(E.3)	8,627	4,011	3,702
$\Phi$ Cash and cash equivalents at the end of the period	(E.3)	5,314	8,627	4,011

The accompanying Notes are an integral part of these Consolidated Financial Statements. Under the adoption methods we chose for IFRS 9, 15, and 16, prior-year numbers are not restated to conform to the new accounting policies. For more information, see *Note (IN.1)*.

#### **SAP SE and Subsidiaries**

## **Notes to the Consolidated Financial Statements IFRS**

### (IN.1) Basis for Preparation

#### General Information

The registered seat of SAP SE is in Walldorf, Germany (Commercial Register of the Lower Court of Mannheim HRB 719915). The Consolidated Financial Statements for 2019 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 IFRS standards and interpretations that were effective on and endorsed by the European Union (EU) as at December 31, 2019. There were no standards or interpretations as at December 31, 2019, impacting our Consolidated Financial Statements for the years ended December 31, 2019, 2018, and 2017, 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 IFRS as endorsed by the EU.

Our Executive Board approved the Consolidated Financial Statements on February 18, 2020, for submission to our Supervisory Board which approved the Consolidated Financial Statements on February 19, 2020.

All amounts included in the Consolidated Financial Statements are reported in millions of euros (€ millions) except where otherwise stated. As figures are 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.

Amounts disclosed in the Notes that are taken directly from our  $\blacksquare$  Consolidated Income Statements or our  $\blacksquare$  Consolidated Statements of Financial Position are marked with the symbols  $\blacksquare$  and  $\blacksquare$ , respectively.

#### Comparative Figures

Effective January 1, 2018, we started to apply IFRS 15 'Revenue from Contracts with Customers' retrospectively, using the cumulative catch-up approach and the practical expedient to apply the new standard only to contracts that were not completed as at January 1, 2018. On adopting IFRS 15, SAP changed several of its accounting policies. Under the cumulative catch-up approach, the amounts for the financial year 2017 presented in the financial statements were not restated to conform to these policies.

Also effective January 1, 2018, we started to apply IFRS 9 'Financial Instruments' using the exception from full retrospective application. The impact from a different classification of financial assets, the new impairment rules, and the different treatment of cost of hedging were recognized in retained earnings of the opening balance sheet on January 1, 2018. Comparative figures for the financial year 2017 presented in the financial statements were not restated.

Effective January 1, 2019 we apply IFRS 16 'Leases' using the modified retrospective transition approach. We recognized the cumulative effect of the initial application of the standard as an

adjustment to the opening balance of retained earnings on the date of initial application while the prior-year figures for the financial years 2018 and 2017 were not adjusted. For more information about the application of IFRS 16, see *Note (D.8)*.

# Accounting Policies, Management Judgments, and Sources of Estimation Uncertainty

#### How We Present Our Accounting Policies, Judgments, and Estimates

To ease the understanding of our financial statements, we present the accounting policies, management judgments, and sources of estimation uncertainty (hereafter: accounting policies, judgments, and estimates) on a given subject together with other disclosures related to the same subject in the Note that deals with this subject. Accounting policies, judgments, and estimates that do not relate to a specific subject are presented in the following section.

For easier identification of our accounting policies, judgments, and estimates, the respective disclosures are marked with the symbol ② and highlighted with a light gray box. They focus on the accounting choices made within the framework of the prevailing IFRS and refrain from repeating the underlying promulgated IFRS guidance, unless we consider it particularly important to the understanding of a Note's content.

The following table provides an overview of where our accounting policies, management judgments, and estimates are disclosed:

Note	Accounting Policies, Judgments, and Estimates
(IN.1)	Basis for Preparation
(A.1)	Revenue
(A.2)	Trade and Other Receivables
(A.3)	Capitalized Cost from Contracts with Customers
(A.4)	Customer-Related Provisions
(B.3)	Share-Based Payments
(B.4)	Pension Plans and Similar Obligations
(B.5)	Other Employee-Related Obligations
(B.6)	Restructuring
(C.1)	Results of Segments
(C.5)	Income Taxes
(D.1)	Business Combinations
(D.2)	Goodwill
(D.3)	Intangible Assets
(D.4)	Property, Plant, and Equipment
(D.5)	Equity Investments
(D.8)	Adoption of IFRS 16
(E.3)	Liquidity
(F.1)	Financial Risk Factors and Risk Management
(F.2)	Fair Value Disclosures on Financial Instruments
(G.1)	Prepaid Expenses and Other Tax Assets
(G.3)	Other Litigation, Claims, and Legal Contingencies
(G.5)	Executive and Supervisory Board Compensation

## **②** General Accounting Policies

#### Bases of Measurement

The Consolidated Financial Statements have been prepared on the historical cost basis except for the following:

- Derivative financial instruments, liabilities for cash-settled sharebased payments, and financial assets with cash flows that are not solely payments of principal or interest are measured at fair value.
- Post-employment benefits are measured at the present value of the defined benefit obligations less the fair value of the plan assets.
- Monetary assets and liabilities denominated in foreign currencies are translated at period-end exchange rates.
- The financial statements of our subsidiaries to which hyperinflation accounting applies.

#### **Foreign Currencies and Hyperinflation**

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.

We apply hyperinflation accounting for our subsidiaries in Argentina and Venezuela by restating the financial statements of these subsidiaries for the current period to account for changes in the general purchasing power of the local currency based on relevant price indexes at the reporting date. The restated financial statements of our subsidiaries in Argentina and Venezuela are translated at closing rates.

The exchange rates of key currencies affecting the Company were as follows:

#### **Exchange Rates**

Equivalent to €1			Middle Rate as at 12/31		Annual Average	Exchange Rate
		2019	2018	2019	2018	2017
U.S. dollar	USD	1.1234	1.1450	1.1196	1.1815	1.1315
Japanese yen	JPY	121.94	125.85	122.06	130.41	126.85
Pound sterling	GBP	0.8508	0.8945	0.8773	0.8847	0.8770
Swiss franc	CHF	1.0854	1.1269	1.1127	1.1549	1.1159
Canadian dollar	CAD	1.4598	1.5605	1.4857	1.5302	1.4644
Australian dollar	AUD	1.5995	1.6220	1.6106	1.5799	1.4794

#### Cost Classification

#### 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, depreciation of our property, plant, and equipment (for example, of our data centers in

which we host our cloud solutions), and costs for third-party hosting services.

#### Cost of Services

Cost of services includes the costs incurred in providing the services that generate service revenue. Consequently, this line item primarily includes employee expenses and related training, system, and system administration costs, costs for third-party resources, and

costs for enabling mobile information and mobile commerce services.

#### 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. For more information about the recognition of internally generated intangible assets from development, see  $Note \ (D.3)$ .

#### Sales and Marketing

Sales and marketing includes the costs incurred for the selling activities (such as sales commissions and amortization of capitalized sales commissions) and marketing activities related to our software and cloud solutions and our service portfolio.

#### General and Administration

General and administration includes the 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.

# Management Judgments and Sources of Estimation Uncertainty

The preparation of the Consolidated Financial Statements requires our 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 liabilities.

We base our judgments, estimates, and assumptions on historical and forecast information, and on regional and industry economic conditions in which we or our customers operate. Changes to these conditions 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 recognized assets, liabilities, revenues, and expenses and disclosed contingent liabilities. Actual results could differ from original estimates.

The accounting policies that most frequently or significantly require us to make judgments, estimates, and assumptions, and therefore are critical to understanding our results of operations, include the following:

Note	Significant Accounting Policies
(A.1)	Revenue recognition
(A.2)	Valuation of trade receivables
(A.4), (G.3)	Accounting for legal contingencies
(B.3)	Accounting for share-based payments
(C.5)	Accounting for income taxes
(D.1)	Accounting for business combinations
(D.2)	Accounting for goodwill
(D.3)	Accounting for intangible assets (including recognition of internally generated intangible assets from development)

Our management periodically discusses these significant accounting policies with the Audit Committee of our Supervisory Board.

## New Accounting Standards Not Yet Adopted

The IASB has – on top of a new conceptual framework – issued various amendments to IFRS standards (such as IFRS 3 (definition of a business), and IFRS 9 (benchmark reform)) that are relevant for SAP but not yet effective. We are currently in the process of assessing the impact on SAP, but do not expect material effects on our financial position or results of operations.

## Section A – Customers

This section discusses disclosures related to contracts with our customers. These include but are not limited to explanations of how we recognize revenue, revenue disaggregation, and information about our trade receivables and customer-related obligations.

#### (A.1) Revenue

#### Accounting for Revenue from Contracts with Customers Classes of Revenue

We derive our revenue from fees charged to our customers for the use of our hosted cloud offerings, for licenses to our on-premise software products, and for standardized and premium support services, consulting, customer-specific software developments, training, and other services.

Cloud and software revenue, as presented in our Consolidated Income Statements, is the sum of our cloud revenue, our software license revenue, and our software support revenue.

- Cloud revenue represents fees earned from providing customers with any of the following:
  - Software as a service (SaaS), that is, a right to use software functionality (including standard functionalities and custom cloud applications and extensions) in a cloud-based infrastructure hosted by SAP or third parties engaged by SAP, where the customer does not have the right to terminate the hosting contract and take possession of the software to either run it on its own IT infrastructure or to engage a third-party provider unrelated to SAP to host and manage the software; SaaS also includes transaction and agent fees for transactions that customers of our network business execute on our cloud-based transaction platforms.
  - Platform as a service (PaaS), that is, access to a cloud-based infrastructure to develop, run, and manage applications
  - Infrastructure as a service (laaS), that is, hosting and related application management services for software hosted by SAP or third parties engaged by SAP
  - Premium cloud support beyond the regular support that is embedded in the basic cloud subscription fees
- Software license 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 or on hardware of third-party hosting providers unrelated to SAP (on-premise software). Software license 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 that comprise unspecified future software updates, upgrades, and enhancements as well as technical product support services for on-premise software products.

Services revenue primarily represents fees earned from professional consulting services, premium support services, training services, and messaging services.

#### **Identification of Contract**

We frequently enter into multiple contracts with the same customer. For accounting purposes, we treat these contracts as a single contract if they are entered into at or near the same time and are economically interrelated. We do not combine contracts with closing days more than three months apart because we do not consider them being entered into near the same time. Judgment is required in evaluating whether various contracts are interrelated, which includes considerations as to whether they were negotiated as a package with a single commercial objective, whether the amount of consideration on one contract is dependent on the performance of the other contract, or if some or all goods in the contracts are a single performance obligation.

New arrangements with existing customers can be either a new contract or the modification of prior contracts with the customer. Our respective judgment in making this determination considers whether there is a connection between the new arrangement and the pre-existing contracts, whether the goods and services under the new arrangement are highly interrelated with the goods and services sold under prior contracts, and how the goods and services under the new arrangement are priced. In determining whether a change in transaction price represents a contract modification or a change in variable consideration, we examine whether the change in price results from changing the contract or from applying unchanged existing contract provisions.

#### **Identification of Performance Obligations**

Our customer contracts often include various products and services. Typically, the products and services outlined in the *Classes of* Revenue section qualify as separate performance obligations and the portion of the contractual fee allocated to them is recognized separately. Judgment is required, however, in determining whether a good or service is considered a separate performance obligation. In particular for our professional services and implementation activities, judgment is required to evaluate whether such services significantly integrate, customize, or modify the on-premise software or cloud service to which they relate. In this context, we consider the nature of the services and their volume relative to the volume of the on-premise software or cloud service to which they relate. In general, the implementation services for our cloud services go beyond pure setup activities and qualify as separate performance obligations. Similarly, our on-premise implementation services and our custom development services typically qualify as separate performance obligations. Non-distinct goods and services are combined into one distinct bundle of goods and services (combined performance obligation).

When selling goods or services, we frequently grant customers options to acquire additional goods or services (for example, renewals of renewable offerings, or additional volumes of purchased software). We apply judgment in determining whether such options

provide a material right to the customer that the customer would not receive without entering into that contract (material right options). In this judgment, we consider, for example, whether the options entitle the customer to a discount that exceeds the discount granted for the respective goods or services sold together with the option.

#### **Determination of Transaction Price**

We apply judgment in determining the amount to which we expect to be entitled in exchange for transferring promised goods or services to a customer. This includes estimates as to whether and to what extent subsequent concessions or payments may be granted to customers and whether the customer is expected to pay the contractual fees. In this judgment, we consider our history both with the respective customer and more broadly.

Our typical cloud services do not provide the customer with a software license because the customer does not have the right to terminate the hosting contract and take possession of the software. Consequently, cloud fees that are based on transaction volumes are considered in the transaction price based on estimates rather than being accounted for as sales-based license royalties.

Only very rarely do our contracts include significant financing components. We do not account for financing components if the period between when SAP transfers the promised goods or services to the customer and when the customer pays for those goods or services is one year or less.

#### **Allocation of Transaction Price**

We have established a hierarchy to identify the standalone selling prices (SSPs) that we use to allocate the transaction price of a customer contract to the performance obligations in the contract.

- Where standalone selling prices for an offering are observable and reasonably consistent across customers (that is, not highly variable), our SSP estimates are derived from our respective pricing history. Typically, our standardized support offerings and our professional service offerings follow this approach.
- Where sales prices for an offering are not directly observable or highly variable across customers, we use estimation techniques.
   For renewable offerings with highly variable pricing, these techniques consider the individual contract's expected renewal price as far as this price is substantive. Typically, our cloud offerings follow this approach. For non-renewable offerings, these estimations follow a cost-plus-margin approach.
- For offerings that lack renewals, have highly variable pricing, and lack substantial direct costs to estimate based on a cost-plusmargin approach, we allocate the transaction price by applying a residual approach. We use this technique in particular for our standard on-premise software offerings.

Judgment is required when estimating SSPs. To judge whether the historical pricing of our goods and services is highly variable, we have established thresholds of pricing variability. For judging whether contractual renewal prices are substantive, we have established floor prices that we use as SSPs whenever the contractual renewal prices are below these floor prices. In judging whether contracts are expected to renew at their contractual renewal prices, we rely on our respective renewal history. The SSPs of material right options depend on the probability of option

exercise. In estimating these probabilities, we apply judgment considering historical exercise patterns.

We review the SSPs periodically or whenever facts and circumstances change to ensure the most objective input parameters available are used.

#### Recognition of Revenue

Cloud revenue is recognized over time as the services are performed. Where our performance obligation is the grant of a right to continuously access and use a cloud offering for a certain term, revenue is recognized based on time elapsed and thus ratably over this term.

Software revenue is recognized at a point in time or over time depending on whether we deliver standard software, customer-specific software, or software subscription contracts that combine the delivery of software and the obligation to deliver, in the future, unspecified software products:

- Licenses for our standard on-premise software products are typically delivered by providing the customer with access to download the software. The license period starts when such access is granted. We recognize revenue for these on-premise licenses at the point in time when the customer has access to and thus control over the software. In judging whether our on-premise software offerings grant customers a right to use, rather than a right to access, our intellectual property, we have considered the usefulness of our software without subsequent updates to it.
- Typically, our customer-specific on-premise software development agreements:
  - Are for software developed for specific needs of individual customers and therefore it does not have any alternative use for us
  - Provide us with an enforceable right to payment for performance completed to date

For such development agreements, we recognize revenue over time as the software development progresses. Judgment is required in identifying an appropriate method to measure the progress toward complete satisfaction of such performance obligations. We typically measure progress of our development agreements based on the direct costs incurred to date in developing the software as a percentage of the total reasonably estimated direct costs to fully complete the development work (percentage-of-completion method). This method of measuring progress faithfully depicts the transfer of the development services to the customer, as substantially all of these costs are cost of the staff or third parties performing the development work. In estimating the total cost to fully complete the development work, we consider our history with similar projects.

For agreements that combine the delivery of software and the
obligation to deliver, in the future, unspecific software products,
we recognize revenue at a point in time for licenses that are made
immediately accessible to the customer. We recognize revenue
ratably over the term of the software subscription contract for
the unspecified software products, as our performance obligation

is to stand ready to deliver such products on a when-and-if-available basis.

Software support revenue is typically recognized based on time elapsed and thus ratably over the term of the support arrangement. 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. Our customers simultaneously receive and consume the benefits of these support services as we perform.

Service revenue is typically recognized over time. Where we stand ready to provide the service (such as access to learning content), we recognize revenue based on time elapsed and thus ratably over the service period. Consumption-based services (such as separately identifiable consulting services and premium support services, messaging services, and classroom training services) are recognized over time as the services are utilized, typically following the percentage-of-completion method or ratably. When using the percentage-of-completion method, we typically measure the progress toward complete satisfaction of the performance obligation in the same way and with the same reasoning and judgment as we do for customer-specific on-premise software development agreements. We apply judgment in determining whether a service qualifies as a stand-ready service or as a consumption-based service.

Revenue for combined performance obligations is recognized over the longest period of all promises in the combined performance obligation.

Judgment is also required to determine whether revenue is to be recognized at a point in time or over time. For performance obligations satisfied over time, we need to measure progress using the method that best reflects SAP's performance. When using cost incurred as a measure of progress for recognizing revenue over time, we apply judgment in estimating the total cost to satisfy the performance obligation.

All of the judgments and estimates mentioned above can significantly impact the timing and amount of revenue to be recognized.

#### **Contract Balances**

We recognize trade receivables for performance obligations satisfied over time gradually as the performance obligation is satisfied and in full once the invoice is due. Judgment is required in determining whether a right to consideration is unconditional and thus qualifies as a receivable.

Contract liabilities primarily reflect invoices due or payments received in advance of revenue recognition.

Typically, we invoice fees for on-premise standard software on contract closure and software delivery. Periodic fixed fees for cloud subscription services, software support services, and other multiperiod agreements are typically invoiced yearly or quarterly in advance. Such fee prepayments account for the majority of our contract liability balance. Fees based on actual transaction volumes for cloud subscriptions and fees charged for non-periodical services are invoiced as the services are delivered. While payment terms and conditions vary by contract type and region, our terms typically require payment within 30 to 60 days.

#### 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 EMEA (Europe, Middle East, and Africa), Americas (North America and Latin America), and APJ (Asia Pacific Japan).

#### **Total Revenue by Region**

€ millions	2019	2018	2017
Germany	3,948	3,658	3,352
Rest of EMEA	8,158	7,446	7,063
EMEA	12,105	11,104	10,415
United States	9,085	7,880	7,436
Rest of Americas	2,109	1,832	1,911
Americas	11,194	9,713	9,347
Japan	1,180	963	885
Rest of APJ	3,074	2,928	2,814
APJ	4,254	3,891	3,699
.iil SAP Group	27,553	24,708	23,461

#### **Major Revenue Classes by Region**

€ millions	nillions		Cloud Revenue		Cloud and Software Revenue		
	2019	2018	2017	2019	2018	2017	
EMEA	2,115	1,441	1,029	10,211	9,339	8,759	
Americas	3,945	2,941	2,321	9,172	7,973	7,666	
APJ	872	611	419	3,629	3,310	3,124	
.il SAP Group	6,933	4,993	3,769	23,012	20,622	19,549	

For information about the breakdown of revenue by segment and segment revenue by region, see Note (C.1).

#### Remaining Performance Obligations

Amounts of a customer contract's transaction price that are allocated to the remaining performance obligations represent contracted revenue that has not yet been recognized. They include amounts recognized as contract liabilities and amounts that are contracted but not yet due.

The transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied as at December 31, 2019, is €35.5 billion (December 31, 2018: €31.3 billion). This amount mostly comprises obligations to provide software support or cloud subscriptions services, as the respective contracts typically have durations of one or multiple years.

The majority of this amount is expected to be recognized as revenue over the next 12 months following the respective balance sheet date. This estimate is based on our best judgment, as it needs to consider estimates of possible future contract modifications. The amount of transaction price allocated to the remaining performance obligations, and changes in this amount over time, are impacted by, among others:

- Currency fluctuations
- The contract period of our cloud and software support contracts remaining at the balance sheet date and thus by the timing of contract renewals

# Performance Obligations Satisfied in Previous Years

Revenue recognized in the reporting period for performance obligations satisfied in earlier periods was €77 million (December 31, 2018: €132 million), mainly resulting from changes in estimates related to percentage-of-completion-based contracts and changes in estimates of variable considerations.

#### Contract Balances

Contract liabilities as at December 31, 2019, were €4.4 billion (December 31, 2018: €3.1 billion).

Increases in contract liabilities mainly result from billing and invoices becoming due ( $\[ \]$  9.0 billion). Decreases in contract liabilities mainly result from satisfying performance obligations ( $\[ \]$  8.0 billion). The Qualtrics acquisition contributed to the increase in the contract liabilities balance (for more information, see *Note* ( $\[ \]$  0.1)).

The amount of revenue recognized in the reporting period that was included in the contract liability balance at the beginning of the reporting period was €2.6 billion (December 31, 2018: €3.2 billion).

#### (A.2) Trade and Other Receivables

#### Accounting for Trade and Other Receivables

We measure trade receivables and contract assets from contracts with customers at amortized cost less expected credit losses. We account for expected credit losses by recording an allowance on a portfolio basis. We apply the simplified impairment approach in that, on initial measurement of the receivables, we consider all credit losses that are expected to occur during the lifetime of the receivables. We use a provision matrix to estimate these losses.

Additionally, we recognize allowances for individual receivables if there is objective evidence of credit impairment.

Account balances are written off either partially or in full if we judge that the likelihood of recovery is remote.

For information about how the default risk for trade receivables is analyzed and managed, how the loss rates for the provision matrix are determined, how credit impairment is determined and what our criteria for write-offs are, see the section on credit risk in *Note (F.1)*.

In our Consolidated Income Statements, net gains/losses include income/expenses from expected credit loss allowances from applying the provision matrix, from credit-impaired customer balances, and from write-offs and related reversals which are included in other operating income/expense, net. Gains/losses from foreign currency exchange rate fluctuations are included in Other non-operating income/expense, net.

Determining our expected credit loss allowance involves significant judgment. In this judgment, we primarily consider our historical experience with credit losses in the respective provision matrix risk class and current data on overdue receivables. We expect that our historical default rates represent a reasonable approximation for future expected customer defaults. Besides historical data, our judgment used in developing the provision matrix considers reasonable and supportable forward-looking information (for example, changes in country risk ratings, and fluctuations in credit default swaps of the countries in which our customers are located).

The assessment of whether a receivable is collectible involves the use of judgment and requires us to make assumptions about customer defaults that could change significantly.

In applying this judgment, we evaluate available information about a particular customer's financial situation to determine whether it is probable that a credit loss had occurred and, if so, whether the amount of the loss is reasonably estimable. If it is, an allowance for that specific account is then necessary. Basing the expected credit loss allowance for the remaining receivables primarily on our historical loss experience likewise requires judgment, as history may not be indicative of future development. Also, including reasonable and supportable forward-looking information in the loss rates of the expected credit loss allowance requires judgment, as they may not provide a reliable prognosis for future development.

#### **Trade and Other Receivables**

€ millions			2019	019		
	Current	Non-Current	Total	Current	Non-Current	Total
Trade receivables, net	7,561	21	7,582		6	6,188
Other receivables	346	108	454	180	112	293
4 Total	7,908	129	8,037	6,362	118	6,480

Contract assets as at December 31, 2019, were €234 million (December 31, 2018: €116 million).

For more information about financial risk, how we manage credit risk, and details of our trade receivables and contract assets allowances, see *Note (F.1)*.

# (A.3) Capitalized Cost from Contracts with Customers

#### **Ocsts of Obtaining Customer Contracts**

Capitalized costs from customer contracts are classified as Other non-financial assets in our statement of financial position.

The capitalized assets for the incremental costs of obtaining a customer contract primarily consist of sales commissions earned by our sales force. Judgment is required in determining the amounts to be capitalized, particularly where the commissions are based on cumulative targets and where commissions relate to multiple performance obligations in one customer contract. We capitalize such cumulative target commissions for all customer contracts that count towards the cumulative target but only if nothing other than obtaining customer contracts can contribute to achieving the cumulative target. Commissions for contracts with multiple performance obligations or for probable renewals thereof are allocated to these performance obligations and probable renewals relative to the respective standalone selling price.

Typically, we either do not pay sales commissions for customer contract renewals or such commissions are not commensurate with the commissions paid for new contracts. Thus, the commissions paid for renewable new contracts also relate to expected renewals of these contracts. Consequently, we amortize sales commissions paid for new customer contracts on a straight-line basis over the expected contract life including probable contract renewals. Judgment is required in estimating these contract lives. In exercising this judgment, we consider our respective renewal history adjusted for indications that the renewal history is not fully indicative of future renewals. The amortization periods range from 18 months to 12 years depending on the type of offering. In 2019, the amortization period for commissions granted for on premise support contracts was adjusted from eight years to 12 years based on changes in our renewal history. Amortization of the capitalized costs of obtaining customer contracts is classified as sales and marketing expense.

We expense incremental costs of obtaining a customer contract as incurred if we expect an amortization period of one year or less.

#### **Ocsts to Fulfill Customer Contracts**

Capitalized costs incurred to fulfill customer contracts mainly consist of direct costs for custom cloud development contracts as far as these costs are not in scope of other standards than IFRS 15. These costs are amortized after completion of the development on a straight-line basis over the expected life of the cloud subscription contract and including expected renewals. Judgment is required in evaluating whether costs are direct or indirect and in estimating contract lives. Derived from our respective history, the amortization period is typically six years.

Amortization of capitalized costs to fulfill contracts for custom cloud applications and extensions is included in the cost of cloud.

#### **Capitalized Cost from Contracts with Customers**

€ millions			2019			2018
	Current	Non- Current	Total	Current	Non- Current	Total
Capitalized cost of obtaining customer contracts	414	1,318	1,732	326	1,006	1,332
Capitalized cost to fulfill customer contracts	66	117	183	35	66	101
Capitalized contract cost	480	1,435	1,915	361	1,072	1,433
T Other non- financial assets	1,188	1,701	2,889	889	1,301	2,191
Capitalized contract cost as % of <b>4</b> other non-financial assets	40	84	66	41	82	65

#### **Amortization Expense**

€ millions	2019	2018
Capitalized cost of obtaining customer contracts	367	231
Capitalized cost to fulfill customer contracts	81	50

#### (A.4) Customer-Related Provisions

#### **Expected Contract Losses**

Customer-related provisions mainly include expected contract losses. We adjust these provisions as further information becomes available and as circumstances change. Non-current provisions are measured at the present value of their expected settlement amounts as at the reporting date.

#### **Oustomer-Related Litigation and Claims**

Furthermore, these provisions also include obligations resulting from customer-related litigation and claims. We are currently confronted with various claims and legal proceedings, including claims that relate to customers demanding indemnification for proceedings initiated against them based on their use of SAP software, and occasionally claims that relate to customers being dissatisfied with the products and services that we have delivered to them. The obligations arising from customer-related litigation and claims comprise 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.

Due to uncertainties relating to these matters, provisions are based on the best information available. 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

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 and additional provisions. The expected timing or amounts of any outflows of economic benefits resulting 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.

Contingent liabilities exist in respect of customer-related litigation and claims for which no provision has been recognized. It is not practicable to estimate the financial impact of these contingent liabilities due to the uncertainties around these lawsuits and claims as outlined above

## **Section B – Employees**

This section provides financial insights into our employee benefit arrangements. It should be read in conjunction with the compensation disclosures for key management personnel in *Note* (*G.5*) as well as *SAP's Compensation Report*.

#### (B.1) Employee Headcount

The following table provides an overview of employee headcount, 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).

#### **Employee Headcount by Region and Function**

Full-time			12/31/2019				12	2/31/2018			12	2/31/2017
equivalents	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total	EMEA	Ame- ricas	APJ	Total
Cloud and software	6,501	4,426	5,361	16,288	6,341	4,268	5,374	15,983	5,869	3,895	4,719	14,482
Services	8,250	6,018	5,971	20,239	8,120	5,736	5,620	19,476	7,536	4,878	4,965	17,379
Research and development	12,710	5,793	9,131	27,634	12,478	5,651	8,930	27,060	11,349	5,250	8,273	24,872
Sales and marketing	10,205	10,368	5,209	25,781	9,843	9,452	4,918	24,213	9,196	9,169	4,854	23,219
General and administration	3,161	2,123	1,246	6,530	2,906	1,970	1,147	6,024	2,676	1,781	1,047	5,504
Infrastructure	2,220	984	654	3,859	2,160	951	631	3,742	1,732	855	501	3,087
SAP Group (12/31)	43,048	29,712	27,571	100,330	41,848	28,029	26,620	96,498	38,357	25,827	24,359	88,543
Thereof acquisitions	338	1,638	137	2,113	657	952	434	2,043	149	133	7	289
SAP Group (months' end average)	42,697	29,368	27,092	99,157	40,496	27,454	25,759	93,709	37,512	25,459	24,029	86,999

## (B.2) Employee Benefits Expenses

#### **Components of Employee Benefits Expenses**

€ millions	2019	2018	2017
Salaries	10,031	9,025	8,693
Social security expenses	1,477	1,339	1,281
Share-based payment expenses	1,835	830	1,120
Pension expenses	369	330	312
Employee-related restructuring expenses	1,111	19	180
Termination benefits outside of restructuring plans	47	52	57
Employee benefits expenses	14,870	11,595	11,643

## (B.3) Share-Based Payments

### Accounting for Share-Based Payments

#### Classification in the Income Statement

Share-based payments cover cash-settled and equity-settled awards issued to our employees. The respective expenses are recognized as employee benefits and classified in our Consolidated Income Statements according to the activities that the employees perform. 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 the equity price risk, see *Note (F.1)*.

#### Valuation, Judgment, and Sources of Estimation Uncertainty

We use certain assumptions in estimating the fair values for our share-based payments, including expected share price volatility and expected award life (which represents our estimate of the average remaining life until the awards 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 LTI 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.

We believe that the expected volatility is the most sensitive assumption we use in estimating the fair values of our share options. Regarding future payout under our cash-settled plans, the SAP share price is the most relevant factor. With respect to our LTI 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.

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.

#### Presentation in the Statements of Cash Flows

Unlike in previous years, we present the payments of our share-based payment plans separately in our Statements of Cash Flows under cash flows from operating activities. As a result, the changes in other assets and in other liabilities presented in the reconciliation of operating cash flow no longer consider share-based payment-related assets or liabilities. Prior-period numbers were adjusted to conform to the new presentation.

The operating expense line items in our income statement include the following share-based payment expenses:

# **Share-Based Payment Expenses by Functional Area**

€ millions	2019	2018	2017
Cost of cloud and software	138	78	115
Cost of services	246	142	158
Research and development	429	210	269
Sales and marketing	562	312	442
General and administration	461	88	135
Share-based payment expenses	1,835	830	1,120
Thereof cash-settled share- based payments	1,664	674	963
Thereof equity-settled share- based payments	171	156	157

In 2019, we paid €79 million in share-based payments that became fully vested because of terminations due to operational reasons in connection with our restructuring plan. These payments as well as the expense portion initially allocated to future services were classified as share-based payments and not as restructuring expenses.

#### a) Cash-Settled Share-Based Payments

Our major share-based payment plans are described below.

#### Long-Term Incentive 2016 Plan (LTI 2016 Plan)

The purpose of the LTI 2016 Plan is to reward our Executive Board members for the annual achievement of SAP's operating profit (non-IFRS, at constant currency) targets, to ensure long-term retention of our Executive Board members, and to reward them for the 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. An LTI tranche is granted annually and has a term of four years (2016–2019 tranches). Each grant starts with determining a grant amount in euros. The grant amount is based on the Executive Board members' contractual LTI 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 LTI 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 depends 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.

#### SAP Stock Option Plan 2010 (SOP 2010)

Under the SOP 2010, we granted virtual stock options to members of the Senior Leadership Team, Global Executives, employees with an exceptional rating, and high potentials between 2010 and 2015, and only in 2010 and 2011 to members of the Executive Board.

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 nonforfeitable 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, which is €59.85 for the 2013 tranche, €60.96 for the 2014 tranche, and €72.18 for the 2015 tranche. The weighted average exercise price of exercised options in 2019 was €66.42 (2018: €67.59) and of outstanding options at year end 2019 was €69.15 (2018: €67.62). Monetary benefits will be capped at 100% of the exercise price.

# Restricted Stock Unit Plan Including Move SAP Plan (RSU Plan)

To retain and motivate executives and certain employees, we grant virtual shares representing a contingent right to receive a cash payment determined by the SAP share price 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 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 different tranches were contingent upon achievement of the operating profit (non-IFRS, at constant currency) KPI target in the year of grant. Depending on performance, the number of PSUs vesting ranges between 0% and 200% of the number initially granted. Performance against the KPI target was 118.7% in 2019 (2018: 106.7%; 2017: 78.2%). All share units are paid out in cash upon vesting.

#### **Qualtrics Cash-Settled Awards Replacing Pre-Acquisition Qualtrics Awards (Qualtrics Rights)**

In conjunction with the acquisition of Qualtrics in 2019, under the terms of the acquisition agreement, SAP exchanged unvested Restricted Share Awards (RSAs), Restricted Share Units (RSUs), and Performance Share Units (PSUs), and options held by employees of Qualtrics into cash-settled share-based payment awards of SAP (Qualtrics Rights).

The replacement awards closely mirror the terms of the replaced awards except that:

- The replaced awards were planned to be settled by issuing equity instruments, whereas the replacement awards are settled in cash.
- RSAs, RSUs, PSUs, and options granted before 2018 and unvested as at the closing date of the Qualtrics acquisition were converted into the right to receive, at the originally agreed vesting dates, an amount in cash equal to the number of RSAs and RSUs held as at the vesting date multiplied by US\$35.00 per share. The respective amount of options equals the number of options held as at the vesting date multiplied by US\$35.00 per share less the originally-agreed exercise price.
- -RSUs, PSUs, and options granted in 2018 and thereafter and unvested as at the closing date of the Qualtrics acquisition were converted into awards that are indexed to SAP's share price as follows: SAP's consideration per share (US\$35.00) was divided by the average closing price of the SAP share over the five trading days on the closing date (€91.28), translated into US\$ (US\$103.75), and the result (Equity Award Exchange Ratio of 0.3373) was multiplied by the average closing price of the SAP share over the five trading days prior to the exercise or vesting date.

There were 24.7 million unvested RSAs, RSUs, PSUs, and options as at the closing date of the Qualtrics acquisition, representing a fair value of  $\ref{thm:equaltrics}$  million after considering expected forfeitures dependent on grant dates and remaining vesting periods. Of the total fair value,  $\ref{thm:equaltrics}$  million was allocated to consideration transferred, while  $\ref{thm:equaltrics}$  million was allocated to future services to be provided. Post-acquisition compensation expense will be recognized as the awards vest over the remainder of the original vesting terms. The remaining vesting periods for such Qualtrics Rights are in a range of up to five years from closing date.

The unvested RSUs include grants as at the closing date of 6.1 million replacement RSUs. These RSUs have a two-year service period.

From January 23, 2019, through December 31, 2019, 7.8 million Qualtrics Rights vested. The unrecognized expense related to Qualtrics Rights was €225 million as at December 31, 2019, and will be recognized over a remaining vesting period of up to four years.

The valuation of our outstanding cash-settled plans was based on the following parameters and assumptions:

#### Fair Value and Parameters Used at Year End 2019 for Cash-Settled Plans

€, unless otherwise stated	LTI 2016 Plan (2016–2019 Tranches)	SOP 2010 (2014-2015 Tranches)	RSU Plan (2016-2019 Tranches)	Qualtrics Rights
Weighted average fair value as at 12/31/2019	94.06	49.51	118.72	37.55
Information how fair value was measured at measurement date				
Option pricing model used	Monte Carlo	Monte Carlo	Other <sup>1)</sup>	Other <sup>1)</sup>
Share price	120.32	120.32	120.32	120.32
Risk-free interest rate, depending on maturity (in %)	−0.68 to −0.57	−0.25 to −0.08	-0.68 to -0.31	-0.55 to -0.35
Expected volatility (in %)	20.4 to 24.8	27.4 to 35.8	NA	NA
Expected dividend yield (in %)	1.26	1.26	1.26	1.26
Weighted average remaining life of awards outstanding as at 12/31/2019 (in years)	1.9	0.3	1.0	1.7

<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 at the valuation date.

#### Fair Value and Parameters Used at Year End 2018 for Cash-Settled Plans

€, unless otherwise stated	LTI 2016 Plan (2016–2018 Tranches)	SOP 2010 (2013-2015 Tranches)	RSU Plan (2015–2018 Tranches)	LTI 2015 Plan (2015 Tranche)
Weighted average fair value as at 12/31/2018	65.89	20.67	85.24	86.93
Information how fair value was measured at measurement date				
Option pricing model used	Monte Carlo	Monte Carlo	Other <sup>1)</sup>	Other <sup>1)</sup>
Share price	86.93	86.93	86.93	86.93
Risk-free interest rate, depending on maturity (in %)	-0.70 to -0.55	-0.67 to -0.25	-0.69 to -0.31	NA
Expected volatility (in %)	17.9 to 21.4	22.8 to 38.5	NA	NA
Expected dividend yield (in %)	1.63	1.63	1.63	NA
Weighted average remaining life of awards outstanding as at 12/31/2018 (in years)	2.4	1.2	1.0	0.1

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 at the valuation date.

For the SOP 2010, expected volatility of the SAP share price is based on a blend of implied volatility from traded options with corresponding remaining lives and exercise prices as well as historical volatility with the same expected life as the options granted

For the LTI 2016 Plan valuation, the Peer Group Index price on December 31, 2019, was US\$363.63 (2018: US\$277.92); the expected dividend yield of the index of 1.17% (2018: 1.30%), the expected volatility of the index of 18% to 22% (2018: 19% to 24%),

and the expected correlation of the SAP share price and the index price of 38% to 40% (2018: 36% to 42%) are based on historical data for the SAP share price and index price.

The 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 Outstanding Awards Under Our Cash-Settled Plans**

Thousands, unless otherwise stated	LTI 2016 Plan (2016-2019 Tranches)	LTI 2015 Plan (2014-2015 Tranches)	SOP 2010 (2012-2015 Tranches)	RSU Plan (2015–2019 Tranches)	Qualtrics Rights
12/31/2017	631	531	14,472	13,520	NA
Granted	295	0	0	8,512	NA
Adjustment based upon KPI target achievement	NA	0	NA	49	NA
Exercised	0	-146	-6,913	-5,840	NA
Forfeited	0	0	-473	-977	NA
12/31/2018	926	385	7,086	15,264	NA
Granted <sup>1)</sup>	344	0	0	9,339	24,666
Adjustment based upon KPI target achievement	NA	0	NA	122	NA
Exercised	0	-385	-3,904	-7,540	-7,776
Forfeited	-160	0	-144	-1,057	-883
12/31/2019	1,110	0	3,039	16,128	16,007
<sup>1)</sup> Granted includes additions from business combinations			-		
Outstanding awards exercisable as at					
12/31/2018	0	0	7,086	0	NA
12/31/2019	0	0	3,039	0	0
Total carrying amount (in € millions) of liabilities as at					
12/31/2018	30	35	146	774	NA
12/31/2019	73	0	150	1,100	377
Total intrinsic value of vested awards (in € millions) as at					
12/31/2018	3	34	137	0	NA
12/31/2019	51	0	155	0	0
Weighted average share price (in €) for awards exercised in	 n				
2018	NA	88.27	100.61	88.67	NA
2019	NA	90.75	111.58	98.11	106.15
Total expense (in € millions) recognized in					
	14	9	221	712	NA
2017					
2017	8	-3	43	611	NA

#### **Share-Based Payment Balances**

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Share-based payment liabilities	1,130	605	1,735	714	316	1,030
$oldsymbol{\Phi}$ Other non-financial liabilities	4,818	814	5,632	4,120	501	4,622
Share-based payment liabilities as % of P other non-financial liabilities	23	74	31	17	63	22
Derivatives – Call options for share- based payments	95	0	95	68	0	68
$oldsymbol{\Phi}$ Other financial assets	297	2,336	2,633	448	1,536	1,984
Derivatives – Call options for share- based payments as % of <b>4</b> other financial assets	32	0	4	15	0	3

For more information about the derivatives, see *Note (F.1)*.

# b) Equity-Settled Share-Based Payments **Own SAP Plan (Own)**

Under Own, employees have the opportunity to purchase, on a monthly basis, SAP shares without any required holding period. The investment per each eligible employee is limited to a percentage of the respective employee's monthly base salary. SAP matches the employee investment by 40% and adds a subsidy of €20 per month for non-executives. This plan is not open to members of the Executive Board.

#### **Number of Shares Purchased**

Millions	2019	2018	2017
Own	5.2	5.3	5.0

As a result of our equity-settled share-based payments transactions, we have commitments to grant SAP shares to employees. We intend to meet these commitments by reissuing treasury shares or through an agent who administers the equity-settled programs and purchases shares on the open market. We have fulfilled the obligations of Own through an agent.

#### **Recognized Expense for Equity-Settled Plans**

€ millions	2019	2018	2017
Own	171	149	140

# **(B.4) Pension Plans and Similar Obligations**

#### Defined Contribution Plans

Amounts for domestic and foreign defined contribution plans are based on a percentage of the employees' salaries or on the amount of contributions made by employees. In Germany and some other countries, we make contributions to public pension schemes that are operated by national or local government or similar institutions. Expenses for such local state pension plans are recognized as short-term employee benefits, that is, social security expenses.

#### Defined Benefit Pension Plans

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. 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 postretirement 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. Total expenses on defined benefit pension plans comprise related current and past service costs as well as interest income and expense.

#### **Total Expense of Pension Plans**

€ millions	2019	2018	2017
Defined contribution plans	314	280	260
Defined benefit pension plans	55	50	52
Pension expenses	369	330	312

#### **Defined Benefit Plans**

#### Present Value of the Defined Benefit Obligations (DBO) and the Fair Value of the Plan Assets

€ millions	Do	mestic Plans		Foreign Plans		Foreign Post- oyment Plans		Total
	2019	2018	2019	2018	2019	2018	2019	2018
Present value of the DBO	1,026	886	533	418	156	132	1,715	1,436
Fair value of the plan assets	1,009	878	411	355	65	59	1,485	1,292
Net defined benefit liability (asset)	17	8	122	63	91	73	230	144
Net defined benefit liability (asset) as % of:								
$oldsymbol{\Phi}$ Non-current other financial assets	0	0	0	0	0	0	0	0
♣ Non-current provisions	4	3	26	24	19	27	49	54

Of the present value of the DBO of our domestic plans,  $\$  9951 million (2018:  $\$ 824 million) relate to plans that provide for lump-sum payments not based on final salary; of the present value of the DBO of our foreign plans,  $\$ 459 million (2018:  $\$ 356 million) relate to plans that provide for annuity payments not based on final salary.

The following significant 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:

#### **Significant Actuarial Assumptions**

Percent		Domes	stic Plans	Foreign Plans			Other Foreign Post-Employment Plans		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
Discount rate	0.8	2.3	2.3	0.3	1.0	0.8	3.7	4.2	3.9

The sensitivity analysis table below shows how the present value of all defined benefit obligations would have been influenced by reasonably possible changes to significant actuarial assumptions. The sensitivity analysis considers change in discount rate assumptions, holding all other actuarial assumptions constant.

#### **Sensitivity Analysis**

€ millions	Domestic Plans			Foreign Plans			Other Foreign Post- Employment Plans			Total		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Present value of all defined benefit obligations if:												
Discount rate was 50 basis points higher	968	836	806	495	391	357	154	126	114	1,617	1,353	1,277
Discount rate was 50 basis points lower	1,090	940	912	576	450	411	159	141	123	1,825	1,531	1,446

#### **Investments in Plan Assets**

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. We have adopted a long-term investment horizon 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		2019	2018		
		Not Quoted in an Active Market		Not Quoted in an Active Market	
Total plan assets	445	1,040	387	905	
Thereof: Asset category					
Equity investments	137	0	116	0	
Corporate bonds	156	0	142	0	
Insurance policies	6	1,040	5	905	

Our expected contribution in 2020 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, 2019, and 12 years as at December 31, 2018.

Total future benefit payments from our defined benefit plans as at December 31, 2019, are expected to be €1,831 million (2018: €1,783 million). Of this amount, 77% (2018: 80%) has maturities of over five years, and 61% (2018: 66%) relates to domestic plans.

# **(B.5) Other Employee-Related Obligations**

#### Accounting Policy

As far as the provision for long-term employee benefits is secured by pledged reinsurance coverage, it is offset with the relating plan asset.

## Other Employee-Related Liabilities

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Other employee-related liabilities	3,038	209	3,247	2,866	185	3,051
4 Other non-financial liabilities	4,818	814	5,632	4,120	501	4,622
Other employee-related liabilities as % of 4 other non-financial liabilities	63	26	58	70	37	66

Other employee-related liabilities mainly relate to bonus and sales commission obligations, vacation obligations, and employee-related social security obligations.

#### **Other Employee-Related Provisions**

€ millions			2019
	Current	Non- Current	Total
Other employee-related provisions as at 1/1/2019	25	52	77
Addition	53	137	190
Utilization	-52	-43	-95
Release	-5	-3	-8
Other employee-related provisions as at 12/31/2019	21	143	164
<b>₽</b> Provisions	268	478	746
Other employee-related provisions as % of 🍄 provisions	8	30	22

Employee-related provisions primarily comprise obligations for time credits accumulated in the working time account, severance payments outside restructuring programs, and jubilee expenses. 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.

## (B.6) Restructuring

#### Recognition of Restructuring Provisions

We only recognize provisions for restructuring if and when the following occurs:

- SAP has designed a program that materially changes the scope of one of our businesses or the manner in which the business is conducted, and
- A detailed and documented restructuring plan has been approved by our Executive Board, a member thereof, or a direct report of an Executive Board member, and
- The program established is planned to start shortly after the program plan is approved and is expected to be capable of being completed within 12 months, and
- The program has been announced to the parties affected or has commenced.

We consider whether a change in business is material based on the business affected rather than for SAP as a whole. In judging whether a unit qualifies as a business for restructuring purposes, we consider if the unit has its own management team, has access to all inputs and processes necessary to provide outputs, and generates or could generate revenues. The materiality of a change to a business is assessed based on both the size and the nature of the change and therefore does not necessarily involve a material quantitative impact on our financial statements.

In early 2019, we launched a Company-wide restructuring program to further increase our focus on our key strategic growth areas. The program is aimed at further simplifying Company structures and processes and to ensure that SAP's organizational setup, skillsets, and resource allocation continue to meet evolving customer demand. The main features of the restructuring plan were announced on January 29, 2019. Substantially all restructuring expenses recognized in 2019 result from this program. Cash outflows related to restructuring were €0.9 billion in 2019 (2018: €0.1 billion).

In total, approximately 4,000 employees will leave or have already left the Company under the plan. Restructuring expenses primarily include the following components:

## **Restructuring Expenses**

€ millions	2019	2018	2017
Employee-related restructuring expenses	-1,111	-19	-180
Onerous contract-related restructuring expenses and restructuring-related impairment losses	-19	0	-2
.il Restructuring expenses	-1,130	-19	-182

Restructuring provisions are predominantly short-term in nature. They primarily include employee termination benefits. For more information about the accounting treatment of share-based compensation in connection with the restructuring program, see *Note (B.3)*.

#### **Restructuring Provisions**

€ millions	Restructuring Provisions
1/1/2019	24
Addition	1,125
Utilization	-938
Release	-4
Currency impact	1
12/31/2019	208
Total provisions	746
Restructuring provisions as % of total provisions	28

If not presented separately in our income statement, restructuring expenses would have been classified in the different expense items in our income statement as follows:

#### **Restructuring Expenses by Functional Area**

€ millions	2019	2018	2017
Cost of cloud and software	-138	-3	-55
Cost of services	-154	-3	-118
Research and development	-467	-3	-9
Sales and marketing	-299	-11	-2
General and administration	-71	0	2
III Restructuring expenses	-1,130	-19	-182

## Section C - Financial Results

This section provides insight into the financial results of SAP's reportable segments and of SAP overall as far as not already covered by previous sections. This includes but is not limited to segment results, income taxes, and earnings per share.

## (C.1) Results of Segments

#### **General Information**

At year end 2019, SAP had four 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 our chief operating decision maker (CODM). The operating segments are largely organized and managed separately according to their product and service offerings, notably whether the products and services relate to our business network activities, experience management activities, or communication offerings, or cover other activities of our business.

The Applications, Technology & Services segment derives its revenues primarily from the sale of software licenses and cloud subscriptions (as far as not included in one of the other segments), and from the sale of related services (mainly support services, various professional services, premium support services, implementation services for our software products, and education services on the use of our products).

The former SAP Business Network segment was renamed during 2019 without any changes in the composition of this segment. The new name is Intelligent Spend Group. The Intelligent Spend Group segment derives its revenues mainly from transaction fees charged for the use of SAP's cloud-based collaborative business networks and from the sale of subscriptions to the Intelligent Spend Group's cloud offerings (mainly SAP Ariba, SAP Concur, and SAP Fieldglass offerings) and of related professional and educational services.

The Qualtrics segment derives its revenues mainly from the sale of experience management cloud solutions (offerings of Qualtrics) that run front-office functions across the experience data and from the sale of related services. Before we acquired Qualtrics on January 23, 2019, this segment was called Customer Experience and included our customer experience offerings. Following the Qualtrics acquisition, we combined our existing customer experience solutions with the Qualtrics business and renamed the Customer Experience segment to Customer and Experience Management. The customer experience offerings continued to belong to this segment until they became part of the Applications, Technology & Services segment in October 2019 through splitting and partial integration into other company functions. The segment was thereafter renamed to Qualtrics. The expenses reflected in the Qualtrics segment, however, do not comprise the full impact of the acquisition due to the fact that some functions of Qualtrics mostly affecting general and administration expense have already been integrated into SAP's corporate functions. There are no prior-period numbers for the Qualtrics segment presented, since we acquired Qualtrics on January 23, 2019.

Further, we changed the composition of our non-reportable
Digital Interconnect segment through integration of telephony, video

chat, and routing offerings, which formerly were included in the Applications, Technology & Services segment and former Customer Experience segment. Due to its size, however, Digital Interconnect continues to not qualify as a reportable segment.

The segment information for 2019 and the comparative prior periods were both restated to conform with the new segment composition of the Applications, Technology & Services segment, the Qualtrics segment, and the Digital Interconnect segment.

#### Segment Reporting Policies

Our management reporting system, and hence our segment 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 but 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, where both actual and constant currency numbers are reported to and used by our CODM. 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 expense measures exclude:
  - Acquisition-related charges such as 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 business relationships in connection with a business combination, and 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, global business operations, and global marketing. They are not included in the results of our reportable segments.

Revenues and expenses of our operating but non-reportable segment, and the certain activities managed on corporate level, as

outlined above, are presented under the Other revenue and Other expenses items in the reconciliation in *Note (C.2)*.

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 (D.2)*.

#### **Applications, Technology & Services**

€ millions		2019		2018	2017	
	Actual Currency	Constant Currency <sup>3)</sup>	Actual Currency	Constant Currency <sup>3)</sup>	Actual Currency	
Cloud – SaaS/PaaS <sup>1)</sup>	3,243	3,152	2,347	2,424	1,593	
Cloud – IaaS <sup>2)</sup>	695	673	488	506	328	
Cloud	3,938	3,825	2,835	2,929	1,922	
Software licenses	4,523	4,422	4,645	4,875	4,869	
Software support	11,532	11,269	10,969	11,478	10,890	
Software licenses and support	16,054	15,691	15,614	16,353	15,760	
Cloud and software	19,993	19,516	18,449	19,283	17,681	
Services	3,551	3,464	3,305	3,577	3,176	
Total segment revenue	23,544	22,980	21,753	22,859	20,857	
Cost of cloud – SaaS/PaaS <sup>1)</sup>	-1,126	-1,092	-948	-992	-676	
Cost of cloud – IaaS <sup>2)</sup>	-493	-481	-428	-441	-305	
Cost of cloud	-1,620	-1,573	-1,377	-1,433	-981	
Cost of software licenses and support	-1,972	-1,933	-1,924	-2,056	-1,998	
Cost of cloud and software	-3,592	-3,505	-3,300	-3,489	-2,978	
Cost of services	-2,636	-2,583	-2,523	-2,694	-2,434	
Total cost of revenue	-6,228	-6,089	-5,823	-6,183	-5,412	
Segment gross profit	17,316	16,892	15,931	16,677	15,445	
Other segment expenses	-7,448	-7,294	-7,008	-7,318	-6,858	
Segment profit	9,868	9,597	8,922	9,359	8,587	

 $<sup>^{\</sup>rm 1)}$  Software as a service/platform as a service

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

<sup>3)</sup> The 2019 constant currency amounts are only comparable to 2018 actual currency amounts; 2018 constant currency amounts are only comparable to 2017 actual currency amounts.

## **Intelligent Spend Group**

€ millions		2019		2018	2017
	Actual Currency	Constant Currency <sup>2)</sup>	Actual Currency	Constant Currency <sup>2)</sup>	Actual Currency
Cloud – SaaS/PaaS <sup>1)</sup>	2,693	2,585	2,178	2,265	1,840
Cloud	2,693	2,585	2,178	2,265	1,840
Software licenses	0	0	0	0	-1
Software support	15	14	16	16	18
Software licenses and support	15	14	16	17	17
Cloud and software	2,708	2,599	2,193	2,282	1,857
Services	476	458	436	451	404
Total segment revenue	3,184	3,057	2,629	2,733	2,261
Cost of cloud – SaaS/PaaS <sup>1)</sup>	-591	-569	-483	-503	-428
Cost of cloud	-591	-569	-483	-503	-428
Cost of software licenses and support	-11	-10	-6	-7	-5
Cost of cloud and software	-601	-579	-489	-510	-433
Cost of services	-352	-340	-324	-338	-292
Total cost of revenue	-953	-919	-813	-847	-725
Segment gross profit	2,231	2,138	1,816	1,886	1,536
Other segment expenses	-1,534	-1,477	-1,285	-1,341	-1,148
Segment profit	696	661	531	545	388

<sup>1)</sup> Software as a service/platform as a service

<sup>&</sup>lt;sup>2)</sup> The 2019 constant currency amounts are only comparable to 2018 actual currency amounts; 2018 constant currency amounts are only comparable to 2017 actual currency amounts.

## Qualtrics

€ millions		2019		20182)	20172)	
	Actual Currency	Constant Currency	Actual Currency	Constant Currency	Actual Currency	
Cloud – SaaS/PaaS <sup>1)</sup>	371	353	NA	NA	NA	
Cloud	371	353	NA	NA	NA	
Software licenses	0	0	NA	NA	NA	
Software support	0	0	NA	NA	NA	
Software licenses and support	0	0	NA	NA	NA	
Cloud and software	371	353	NA	NA	NA	
Services	137	130	NA	NA	NA	
Total segment revenue	508	483	NA	NA	NA	
Cost of cloud – SaaS/PaaS <sup>1)</sup>	-33	-31	NA	NA	NA	
Cost of cloud	-33	-31	NA	NA	NA	
Cost of software licenses and support	0	0	NA	NA	NA	
Cost of cloud and software	-33	-31	NA	NA	NA	
Cost of services	-78	-74	NA	NA	NA	
Total cost of revenue	-110	-106	NA	NA	NA	
Segment gross profit	398	377	NA	NA	NA	
Other segment expenses	-389	-368	NA	NA	NA	
Segment profit	8	9	NA	NA	NA	

<sup>1)</sup> Software as a service/platform as a service

## **Segment Revenue by Region**

€ millions	11			Applications, Technology Intelligent Spend Group Qualtrics & Services							Total Reportable Segments		
	<b>2019</b> 2018		2018		2019	2018		2019			2019	2018	
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency	Actual Currency	
EMEA	11,279	11,152	10,610	612	594	443	68	65	NA	11,959	11,811	11,053	
Americas	8,463	8,158	7,604	2,216	2,115	1,915	403	383	NA	11,081	10,655	9,519	
APJ	3,802	3,669	3,539	356	348	271	37	36	NA	4,196	4,053	3,810	
Total segment revenue	23,544	22,980	21,753	3,184	3,057	2,629	508	483	NA	27,236	26,520	24,383	

For a breakdown of revenue by region for the SAP Group, see *Note (A.1)*.

 $<sup>^{2)}\,</sup> There\, are\, no\, prior-period\, numbers\, for\, the\, Qualtrics\, segment\, presented,\, since\, we\, acquired\, Qualtrics\, in\, 2019.$ 

## (C.2) Reconciliation of Segment Measures to the Consolidated Income Statements

€ millions		2019		2018	2017
	Actual Currency	Constant Currency <sup>1)</sup>	Actual Currency	Constant Currency <sup>1)</sup>	Actual Currency
Applications, Technology & Services	23,544	22,980	21,753	22,859	20,857
Intelligent Spend Group	3,184	3,057	2,629	2,733	2,261
Qualtrics	508	483	NA	NA	NA
Total segment revenue for reportable segments	27,236	26,520	24,383	25,593	23,118
Other revenue	398	385	359	368	345
Adjustment for currency impact	0	728	0	-1,219	0
Adjustment of revenue under fair value accounting	-81	-81	-33	-33	-3
.III Total revenue	27,553	27,553	24,708	24,708	23,461
Applications, Technology & Services	9,868	9,597	8,922	9,359	8,587
Intelligent Spend Group	696	661	531	545	388
Qualtrics	8	9	NA	NA	NA
Total segment profit for reportable segments	10,573	10,268	9,453	9,904	8,975
Other revenue	398	385	359	368	345
Other expenses	-2,763	-2,700	-2,649	-2,791	-2,551
Adjustment for currency impact	0	255	0	-317	0
Adjustment for					
Revenue under fair value accounting	-81	-81	-33	-33	-3
Acquisition-related charges	-689	-689	-577	-577	-587
Share-based payment expenses	-1,835	-1,835	-830	-830	-1,120
.I.I Restructuring	-1,130	-1,130	-19	-19	-182
.III Operating profit	4,473	4,473	5,703	5,703	4,877
.lıl Other non-operating income/expense, net	-74	-74	-56	-56	-36
.i.l Financial income, net	198	198	-47	-47	188
.III Profit before tax	4,596	4,596	5,600	5,600	5,029

<sup>1)</sup> The 2019 constant currency amounts are only comparable to 2018 actual currency amounts; 2018 constant currency amounts are only comparable to 2017 actual currency amounts.

# (C.3) Other Non-Operating Income/Expense, Net

€ millions	2019	2018	2017
Foreign currency exchange gain/loss, net	-51	-31	-12
Thereof from financial assets at fair value through profit or loss	358	444	615
Thereof from financial assets at amortized cost (2017: loans and receivables)	194	148	96
Thereof from financial liabilities at fair value through profit or loss	-396	-415	-435
Thereof from financial liabilities at amortized cost	-176	-202	-317
Miscellaneous income/expense, net	-23	-25	-24
III Other non-operating income/expense, net	-74	-56	-36

## (C.4) Financial Income, Net

€ millions	2019	2018	2017
Finance income	787	371	476
Thereof gains from financial assets at fair value through profit or loss (2017: from available-for-sale financial assets)	596	227	382
Finance costs	-589	-418	-288
Thereof interest expense from financial liabilities at amortized cost	-207	-106	-89
Thereof interest expense from financial liabilities at fair value through profit or loss (2017: from available-for-sale financial liabilities)	-155	-206	-116
.iil Financial income, net	198	-47	188

### (C.5) Income Taxes

#### Judgments and Estimates

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 interpretations 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. In determining our worldwide income tax provisions, judgment is involved in assessing whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments and whether to reflect the respective effect of uncertainty based on the most likely amount or the expected value. In applying these judgments, we consider the nature and the individual facts and circumstances of each uncertain tax treatment as well as the specifics of the respective jurisdiction, including applicable tax laws and our interpretation thereof.

The assessment whether a deferred tax asset is impaired requires 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.

Judgment is also required in evaluating whether interest or penalties related to income taxes meet the definition of income taxes, and, if not, whether it is of financial nature. In this judgment, we particularly consider applicable local tax laws and interpretations on IFRS by national standard setters in the area of group financial reporting.

#### **Tax Expense by Geographic Location**

€ millions	2019	2018	2017
Current tax expense			
Germany	625	733	935
Foreign	1,153	1,019	716
Total current tax expense	1,778	1,752	1,651
Deferred tax expense/income			
Germany	-3	57	-584
Foreign	-549	-298	-84
Total deferred tax income	-552	-241	-668
.lıl Total income tax expense	1,226	1,511	983

## **Major Components of Tax Expense**

€ millions	2019	2018	2017
Current tax expense/income			.,
Tax expense for current year	1,818	1,665	1,623
Taxes for prior years	-40	87	28
Total current tax expense	1,778	1,752	1,651
Deferred tax expense/income			
Origination and reversal of temporary differences	-710	-501	-891
Unused tax losses, research and development tax credits, and foreign tax credits	158	260	223
Total deferred tax income	-552	-241	-668
III Total income tax expense	1,226	1,511	983

#### **Profit Before Tax by Geographic Location**

€ millions	2019	2018	2017
Germany	2,012	3,106	,
Foreign	2,584	2,494	2,241
.lıİ Total	4,596	5,600	5,029

The following table reconciles the expected income tax expense, computed by applying our combined German tax rate of 26.4% (2018: 26.4%; 2017: 26.4%), to the actual income tax expense. Our 2019 combined German tax rate includes a corporate income tax rate of 15.0% (2018: 15.0%; 2017: 15.0%), plus a solidarity surcharge of 5.5% (2018: 5.5%; 2017: 5.5%) thereon, and trade taxes of 10.6% (2018: 10.6%; 2017: 10.6%).

# Relationship Between Tax Expense and Profit Before Tax

€ millions, unless otherwise stated	2019	2018	2017
Jul Profit before tax	4,596	5,600	5,029
Tax expense at applicable tax rate of 26.4% (2018: 26.4%; 2017: 26.4%)	1,212	1,478	1,327
Tax effect of:			
Foreign tax rates	-209	-147	-403
Changes in tax laws and tax rates	10	0	-212
Non-deductible expenses	116	106	82
Tax-exempt income	-93	-38	-95
Withholding taxes	138	91	131
Research and development and for eign tax credits	-89	-33	-26
Prior-year taxes	80	-17	-26
Reassessment of deferred tax assets, research and development tax credits, and foreign tax credits	48	58	185
Other	13	13	20
III Total income tax expense	1,226	1,511	983
Effective tax rate (in %)	26.7	27.0	19.5

# Components of Recognized Deferred Tax Assets and Liabilities

€ millions	2019	2018
Deferred tax assets		•
Intangible assets	504	668
Property, plant, and equipment	19	28
Other financial assets	11	11
Trade and other receivables	61	55
Pension provisions	135	116
Share-based payments	268	140
Other provisions and obligations	1,330	424
Contract liabilities	553	229
Carryforwards of unused tax losses	131	150
Research and development and foreign tax credits	56	21
Other	152	181
Total deferred tax assets	3,220	2,023
Deferred tax liabilities		
Deferred tax liabilities  Intangible assets	1,006	628
Intangible assets Property, plant, and equipment	1,006 544	628 95
Intangible assets		
Intangible assets Property, plant, and equipment Other financial assets Trade and other receivables	544	95
Intangible assets  Property, plant, and equipment  Other financial assets  Trade and other receivables  Pension provisions	544 224	95 139
Intangible assets  Property, plant, and equipment  Other financial assets  Trade and other receivables	544 224 148	95 139 153
Intangible assets  Property, plant, and equipment  Other financial assets  Trade and other receivables  Pension provisions  Share-based payments	544 224 148 13	95 139 153 12
Intangible assets Property, plant, and equipment Other financial assets Trade and other receivables Pension provisions	544 224 148 13	95 139 153 12 0
Intangible assets Property, plant, and equipment Other financial assets Trade and other receivables Pension provisions Share-based payments Other provisions and obligations	544 224 148 13 1 50	95 139 153 12 0
Intangible assets  Property, plant, and equipment  Other financial assets  Trade and other receivables  Pension provisions  Share-based payments  Other provisions and obligations  Contract liabilities	544 224 148 13 1 50 6	95 139 153 12 0 18 23

The increase in deferred tax assets for other provisions and obligations mainly results from deferred intercompany income and the adoption of IFRS 16 'Leases', the latter leading also to a corresponding increase in deferred tax liabilities for property, plant, and equipment. Furthermore, the deferred tax assets for contract liabilities increased mainly because of deferred revenue, and the deferred tax liabilities for intangible assets increased mainly due to our business combination in 2019.

#### Items Not Resulting in a Deferred Tax Asset

-			
€ millions	2019	2018	2017
Unused tax losses			
Not expiring	688	575	375
Expiring in the following year	63	7	9
Expiring after the following year	373	476	535
Total unused tax losses	1,124	1,058	919
Deductible temporary differences	538	509	524
Unused research and development and foreign tax credits			
Not expiring	28	54	38
Expiring in the following year	0	0	2
Expiring after the following year	17	18	34
Total unused tax credits	45	72	74

Of the unused tax losses, €187 million (2018: €213 million; 2017: €263 million) relate to U.S. state tax loss carryforwards.

We have not recognized a deferred tax liability on approximately €17.41 billion (2018: €14.04 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.

#### **Income Tax-Related Litigation**

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 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 expense of approximately €2,013 million (2018: €1,746 million) in total (including related interest expenses and penalties of €982 million (2018: €842 million)).

## (C.6) Earnings per Share

€ millions, unless otherwise stated	2019	2018	2017
Profit attributable to equity holders of SAP SE	3,321	4,083	4,008
Issued ordinary shares <sup>1)</sup>	1,229	1,229	1,229
Effect of treasury shares <sup>1)</sup>	-35	-35	-31
Weighted average shares outstanding, basic <sup>1)</sup>	1,194	1,194	1,197
Dilutive effect of share-based payments <sup>1)</sup>	0	0	1
Weighted average shares outstanding, diluted <sup>1)</sup>	1,194	1,194	1,198
Earnings per share, basic, attributable to equity holders of SAP SE (in €)	2.78	3.42	3.35
Earnings per share, diluted, attributable to equity holders of SAP SE (in €)	2.78	3.42	3.35

<sup>1)</sup> Number of shares in millions

## **Section D - Invested Capital**

This section highlights our non-current assets including investments that form the basis of our operating activities. Additions to invested capital include separate asset acquisitions or business combinations. Further, we disclose information about purchase obligations and capital contributions.

For more information about the effects resulting from the application of IFRS 16 'Leases', see *Note (D.8)*.

#### (D.1) Business Combinations

#### Measuring Non-Controlling Interests and Allocation of Consideration Transferred

We decide for each business combination 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.

We classify costs related to executing business combinations as general and administration expense.

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 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).

We acquire businesses in specific areas of strategic interest to us, particularly to broaden our product and service portfolio.

## 2019 Acquisitions

On January 23, 2019, we concluded the acquisition of Qualtrics, following satisfaction of applicable regulatory and other approvals (also see Note (G.9) of our 2018 Consolidated Financial Statements).

Qualtrics is a leading provider of experience management solutions. By combining Qualtrics products and SAP products, we aim to deliver an end-to-end experience and operational management system to our customers.

We acquired 100% of the Qualtrics shares for approx. US\$35 per share, representing consideration transferred in cash of approximately US\$7.1 billion. In addition to the cash payments, SAP also incurs liabilities and post-closing expenses relating to assumed share-based payment awards amounting to approximately US\$0.9 billion.

The operating results and assets and liabilities of Qualtrics are reflected in our consolidated financial statements from January 23, 2019, onward.

#### **Qualtrics Acquisition: Consideration Transferred**

€ millions	
Cash paid	6,212
Liabilities incurred	237
Total consideration transferred	6,449

The liabilities incurred relate to the earned portion of unvested share-based payment awards. These liabilities were incurred by replacing, upon acquisition, equity-settled share-based payment awards held by employees of Qualtrics with cash-settled share-based payment awards, which are subject to forfeiture. The respective liabilities represent the portion of the replacement awards that relates to pre-acquisition services provided by the acquiree's employees and were measured at the fair value determined under IFRS 2 (also see *Note* (*B.3*)).

Measurement period adjustments recorded in 2019 (which were not material) mostly relate to intangible assets (finalization of the fair value calculation) and tax-related assets and liabilities.

The following table summarizes the values of identifiable assets acquired and liabilities assumed in connection with the acquisition of Qualtrics, as at the acquisition date.

## Qualtrics Acquisition: Recognized Assets and Liabilities

	1.434
Total identifiable liabilities	640
Contract liabilities	129
Provisions and other non-financial liabilities	41
Current and deferred tax liabilities	320
Financial liabilities	53
Trade and other payables	97
Total identifiable assets	2,074
Thereof software and database licenses	2
Thereof customer relationship and other intangibles	1,226
Thereof acquired technology	575
Intangible assets	1,803
Property, plant, and equipment	75
Other non-financial assets	20
Trade and other receivables	37
Other financial assets	1
Cash and cash equivalents	138
	138

In general, the goodwill arising from our acquisitions consists largely of the synergies and the know-how and technical skills of the acquired businesses' workforces.

Qualtrics goodwill is attributed to expected synergies from the acquisition, particularly in the following areas:

- Cross-selling opportunities to existing SAP customers across all regions, using SAP's sales organization
- Creation of new offerings by combining Qualtrics products and SAP products to deliver an end-to-end experience and operational management system to the customers
- Improved profitability in Qualtrics sales and operations

The allocation of the goodwill resulting from the Qualtrics acquisition to our operating segments depends on how our operating segments actually benefit from the synergies of the Qualtrics business combination. For more information, see *Note (D.2)*.

For more information about our segments and about the changes in our segment structure, see Note (C.1).

# Impact of the Business Combination on Our Financial Statements

The amounts of revenue and profit or loss of the Qualtrics business acquired in 2019 since the acquisition date are included in our consolidated income statements for the reporting period as follows:

#### **Qualtrics Acquisition: Impact on SAP's Financials**

€ millions	2019 as Reported	Contribution of Qualtrics
.III Revenue	27,553	429
.III Profit after tax	3,370	-526

Had Qualtrics been consolidated as at January 1, 2019, our revenue and profit after tax for the reporting period would not have been materially different.

#### 2018 Acquisitions

On April 5, 2018, following satisfaction of applicable regulatory and other approvals, we acquired 100% of the shares of Callidus (NDSQ: CALD), a leading provider of customer relationship management (CRM) solutions. SAP paid US\$36 per share, representing consideration transferred in cash of approximately US\$2.4 billion. The acquisition aimed to accelerate and strengthen SAP's position and solution offerings in the sales performance management (SPM) and configure-price-quote (CPQ) spaces.

#### **Callidus Acquisition: Consideration Transferred**

Total consideration transferred	2,004
Liabilities incurred	47
Cash paid	1,957
€ millions	

The liabilities incurred related to the earned portion of unvested share-based payment awards. These liabilities were incurred by replacing, upon acquisition, equity-settled share-based payment awards held by employees of Callidus with cash-settled share-based payment awards, which are subject to forfeiture. The respective liabilities represented the portion of the replacement awards that relates to pre-acquisition services provided by the acquiree's employees and were measured at the fair value determined under IFRS 2.

Measurement period adjustments recorded in both 2018 and 2019 were not material.

The following table summarizes the values of identifiable assets acquired and liabilities assumed in connection with the acquisition of Callidus, as at the acquisition date:

## Callidus Acquisition: Recognized Assets and Liabilities

€ millions	
Cash and cash equivalents	63
Other financial assets	64
Trade and other receivables	32
Other non-financial assets	11
Property, plant, and equipment	26
Intangible assets	515
Thereof acquired technology	121
Thereof customer relationship and other intangibles	390
Thereof software and database licenses	4
Total identifiable assets	711
Trade and other payables	59
Current and deferred tax liabilities	71
Provisions and other non-financial liabilities	15
Contract liabilities/deferred income	55
Total identifiable liabilities	200
Total identifiable net assets	511
Goodwill	1,493
Total consideration transferred	2,004

The goodwill arising from our acquisitions consists largely of synergies and the know-how and technical skills of the acquired businesses' workforces.

- Cross-selling opportunities of Callidus products to existing SAP customers across all regions, using SAP's sales organization
- Integrating Callidus products into SAP C/4HANA to strengthen SAP's customer experience suite of solutions
- Improved profitability in Callidus sales and operations

After the acquisition, we had allocated the Callidus goodwill and intangibles to the newly established Customer Experience segment. For more information about our segments and about the changes in our segment structure after the allocation, see Note (C.1).

# Impact of the Business Combination on Our Financial Statements

The amounts of revenue and profit or loss of the Callidus business acquired in 2018 since the acquisition date are included in the consolidated income statements for the reporting period as follows:

#### **Callidus Acquisition: Impact on SAP's Financials**

€ millions	2018 as Reported	Contribution of Callidus
.iil Revenue	24,708	180
III Profit after tax	4,088	-60

Had Callidus been consolidated as at January 1, 2018, our estimated pro forma revenue for the reporting period would have been €24,766 million, and pro forma profit after tax would have been €4.071 million.

These amounts were calculated after applying SAP's accounting policies and after adjusting the results for Callidus to reflect significant effects from, for example:

- Additional depreciation and amortization that would have been charged assuming the fair value adjustment to property, plant, and equipment, and to intangible assets had been applied from January 1, 2018
- The impact of fair value adjustments on contract liabilities/deferred income on a cumulative basis
- The borrowing costs on the funding levels and debt/equity position of SAP after the business combination
- Employee benefits, such as share-based compensation
- Transaction expenses incurred as part of the acquisition
- Related income taxes

These pro forma numbers have been prepared for comparative purposes only. The pro forma revenue and profit numbers are not necessarily indicative either of the results of operations that would have actually occurred had the acquisition been in effect at the beginning of the respective period, or of future results.

### (D.2) Goodwill

#### @ Goodwill and Intangible Asset Impairment Testing

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.

In general, the test is performed at the same time (at the beginning of the fourth quarter) for all operating segments.

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.

Changes in our segment structure result in the reallocation of goodwill with the reallocated goodwill being calculated based on relative values (if a direct allocation is not possible).

#### Goodwill

€ millions	
Historical cost	
1/1/2018	21,371
Foreign currency exchange differences	847
Additions from business combinations	1,620
12/31/2018	23,838
Foreign currency exchange differences	417
Additions from business combinations	5,017
Retirements/disposals	-9
12/31/2019	29,263
Accumulated amortization	
1/1/2018	100
Foreign currency exchange differences	2
12/31/2018	102
Foreign currency exchange differences	-1
12/31/2019	101
Carrying amount	
12/31/2018	23,736
12/31/2019	29,162

For more information about our segments and the changes in 2019, see Note (C.1).

For impairment testing purposes, the carrying amount of goodwill is allocated to the operating segments expected to benefit from goodwill as follows:

#### **Goodwill by Operating Segment**

€ millions	Applications, Technology & Services	Intelligent Spend Group (Formerly SAP Business Network)	Qualtrics (Formerly Customer and Experience Management) <sup>1)</sup>	Other	Total
12/31/2018	13,498	6,925	3,304	9	23,736
12/31/2019	18,509	7,762	2,882	9	29,162

<sup>1)</sup> The Customer Experience segment existing at the end of 2018 was renamed to Customer and Experience Management following the addition of Qualtrics at the beginning of 2019.

Based on the expected synergies, the goodwill added through the Qualtrics acquisition (see *Note (D.1)* for more information) was partially allocated to the Applications, Technology & Services ( $\[ \le \]$ 1,509 million) and the Intelligent Spend Group ( $\[ \le \]$ 734 million) segments, with the residual amount being allocated to the Qualtrics segment.

Due to the changes in our segments in 2019, the former Customer Experience segment goodwill of €3,438 million was moved to the Applications, Technology & Services segment.

#### **Goodwill Impairment Test**

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 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 year, increased by expected efficiency gains. Values assigned reflect past experience, except for efficiency gains.
Discount rates	Our estimated cash flow projections are discounted to present value using discount rates (after-tax rates). 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	unless otherwise stated Applications, Technology & Intelligent Spend Group Services <sup>2)</sup> (Formerly SAP Business Network				Qualtrics <sup>3)</sup> erly Customer and nce Management) <sup>1)</sup>	
	2019	2018	2019	2018	2019	20184)
Budgeted revenue growth (average of the budgeted period)	3.0	4.8	13.3	13.8	22.6	NA NA
Pre-tax discount rate	NA	11.0	NA	11.5	NA	NA
After-tax discount rate	9.1	8.6	10.4	9.0	11.1	NA
Terminal growth rate	3.0	3.0	3.0	3.0	3.0	NA
Detailed planning period (in years)	5	5	9	9	13	NA

<sup>1)</sup> The Customer Experience segment existing at the end of 2018 was renamed to Customer and Experience Management following the addition of Qualtrics at the beginning of 2019.

On October 1, 2019, we performed a goodwill impairment test for the Applications, Technology & Services and Intelligent Spend Group (formerly SAP Business Network) reportable segments as well as for the part of the Customer and Experience Management segment that was moved to the Applications, Technology & Services segment in October (given the proximity of the move to the testing date, the tests coincided). At the beginning of October, we had not yet completed the synergy identification/valuation and thus tested Qualtrics at the beginning of December (after completion of the synergy identification/valuation).

#### Goodwill Impairment Test Performed on October 1

Applications, Technology & Services Segment and Intelligent Spend Group Segment

The recoverable amount of these segments was determined based on fair value less costs of disposal calculation (in 2018, a value-in-use calculation was performed for the Applications, Technology & Services segment). The fair value measurement was

categorized as a Level 3 fair value based on the inputs used in the valuation. The cash flow projections were 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 (target operating margins of 35.9% (Applications, Technology & Services) and 30.6% (Intelligent Spend Group) were used in the valuation).

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 and Intelligent Spend Group segment to exceed the recoverable amount.

#### Customer and Experience Management Segment

The Customer Experience offerings that continued to belong to the Customer and Experience Management segment during the first three quarters of 2019 became part of the Applications, Technology

<sup>2)</sup> Testing date: October 1

<sup>3)</sup> Testing date: December 1

<sup>&</sup>lt;sup>4)</sup> See below for information about the assumptions used for the former Customer Experience segment – given the segment changes, comparability to the previous year is limited.

& Services segment in October 2019 through splitting and partial integration into other company functions (for more information, see *Note (C.1)*). The impairment test at the time of the transfer coincided with the impairment test on October 1.

When performing the impairment test, the recoverable amount was determined based on fair value less costs of disposal calculation (in 2018, a value-in-use calculation was performed). The fair value measurement was categorized as a Level 3 fair value based on the inputs used in the valuation. The cash flow projections were 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 (a target operating margin of 22.6% was used in the valuation).

The following key assumptions were factored into the calculation of the recoverable amount (percent, unless otherwise stated):

- Budgeted revenue growth: 18.6 (2018: 32.9)
- Pre-tax discount rate: NA (2018: 11.7)
- After-tax discount rate: 9.0 (2018: 9.4)
- Terminal growth rate: 3.0 (2018: 3.0)
- Detailed planning period in years: 9 (2018: 5)

Given the fact that the Customer Experience part of the former Customer and Experience Management segment has still not reached a steady state, we have used a longer and more detailed planning period than one would apply in a more mature segment.

Based on these key assumptions, at the time of the transfer, the recoverable amount exceeded the carrying amount by  $\le 4,574$  million (2018:  $\le 8,476$  million).

The following table shows the amounts by which the key assumptions could – at the time of the impairment test – have changed individually (that is, without changing the other key assumptions) for the recoverable amount to be at least equal to the carrying amount. For budgeted revenue growth sensitivity, the cost structure was not adjusted, hence leading to a modified terminal operating margin:

#### **Sensitivity to Change in Assumptions**

	Customer Experience Part of the Customer and Experience Management Segment		
	<b>2019</b> 2018		
Budgeted revenue growth (change in pp)	-1.9	-8.3	
After-tax discount rate (change in pp)	4.9	8.7	
Pre-tax discount rate (change in pp)	NA	10.2	
Target operating margin at the end of the budgeted period (change in pp)	-13	-28	

#### Goodwill Impairment Test Performed on December 1

Applications, Technology & Services Segment and Intelligent Spend Group Segment

The goodwill impairment test on October 1 resulted in a headroom that is significantly higher than the portion of the goodwill that – at the beginning of December – was allocated to the segments respectively. Thus, there is no impairment risk resulting from the partial allocation of the Qualtrics goodwill.

#### **Oualtrics**

For more information about the Qualtrics segment, see  $Note\ (C.1)$ .

The impairment test for the Qualtrics segment was performed on December 1 because at that time, we had finalized the initial allocation of the Qualtrics goodwill to our segments. The test already reflects the allocation of parts of the Qualtrics goodwill to the Applications, Technology & Services segment and Intelligent Spend Group segment.

The recoverable amount was 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. The cash flow projections were 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 (a target operating margin of 21.5% was used in the valuation).

Given the fact that the Qualtrics segment is expected to show disproportionate growth in the coming years and has not yet reached a steady state, we have used a longer and more detailed planning period than one would apply in a more mature segment.

The recoverable amount exceeded the carrying amount by  $ext{$\leq$4,071$ million.}$ 

The following table shows the amounts by which the key assumptions would need to change individually (that is, without changing the other key assumptions) for the recoverable amount to be equal to the carrying amount. For budgeted revenue growth sensitivity, the cost structure was not adjusted, hence leading to a modified terminal operating margin:

#### Sensitivity to Change in Assumptions

		Qualtrics
	2019	20185)
Budgeted revenue growth (change in pp)	-1.6	NA
After-tax discount rate (change in pp)	6.3	NA
Target operating margin at the end of the budgeted period (change in pp)	-15	NA

<sup>5)</sup> See above for more information about the sensitivity analysis performed for the former Customer Experience segment – given the segment changes, comparability to the previous year is limited.

### (D.3) Intangible Assets

#### Recognition of Intangibles

Whereas in general, expenses for internally generated intangibles are expensed as incurred, development expenses incurred on standard-related customer development projects (for which the IAS 38 criteria are met cumulatively) are capitalized on a limited scale with those amounts being amortized over the estimated useful life of up to 12 years.

Determining whether internally generated intangible assets from development qualify for recognition 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.

#### Measurement of Intangibles

All our purchased intangible assets other than goodwill have finite useful lives. They are initially measured at acquisition cost and subsequently amortized based on the expected consumption of economic benefits over their estimated useful lives ranging from two to 20 years.

Acquired in-process research and development project assets are typically amortized over five to seven years (starting upon completion / marketing of the respective projects).

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.

#### Classification of Intangibles

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 relationships and acquired trademark licenses.

Amortization expenses of intangible assets are classified as cost of cloud, cost of services, research and development, sales and marketing, and general and administration, depending on the use of the respective intangible assets.

## **Intangible Assets**

€ millions	Software and Database Licenses	Acquired Technology/IPRD	Customer Relationship and Other Intangibles	Total
Historical cost				
1/1/2018	809	1,992	4,631	7,432
Foreign currency exchange differences	8	100	204	312
Additions from business combinations	4	148	410	562
Other additions	193	0	36	229
Retirements/disposals	-43	-62	-41	-146
Transfers	25	0	-28	-3
12/31/2018	996	2,178	5,212	8,386
Foreign currency exchange differences	4	48	100	152
Additions from business combinations	2	574	1,226	1,802
Other additions	84	0	68	152
Retirements/disposals	-182	-48	-166	-396
Transfers	25	0	-25	0
12/31/2019	929	2,752	6,415	10,096
Accumulated amortization				
1/1/2018	601	1,544	2,306	4,451
Foreign currency exchange differences	6	77	87	170
Additions amortization	95	216	337	648
Retirements/disposals	-23	-62	-25	-110
12/31/2018	679	1,775	2,705	5,159
Foreign currency exchange differences	5	33	39	77
Additions amortization	94	271	395	760
Retirements/disposals	-180	-48	-163	-391
12/31/2019	598	2,031	2,976	5,605
Carrying amount				
12/31/2018	317	403	2,507	3,227
12/31/2019	331	721	3,439	4,491

## **Significant Intangible Assets**

€ millions, unless otherwise stated		Carrying Amount	Remaining Useful Life
	2019	2018	(in years)
Sybase – Customer relationships	131	179	2 to 4
SuccessFactors – Customer relationships	184	225	6
Ariba – Customer relationships	273	323	6 to 8
Concur – Customer relationships	955	1,033	11 to 15
Callidus – Customer relationships	336	384	9 to 13
Qualtrics – Acquired technologies	495	0	6
Qualtrics – Customer relationships	1,152	0	13 to 18
Total significant intangible assets	3,526	2,144	·

### (D.4) Property, Plant, and Equipment

#### **Operation** Depreciation of Property, Plant and Equipment

Property, plant, and equipment are typically depreciated using the straight-line method. Judgment is required in estimating the useful life of the assets. In this assessment we consider, among others, our history with similar assets and current and future changes in technology.

#### Changed Estimates of Useful Lives

At the beginning of 2019, we changed our estimate of the expected useful lives of certain information technology equipment. This change from four to five years is still within the range of two to six years. This change reduces our depreciation expense by  $\mathfrak{\P} 3$  million in the year 2019 (thereof  $\mathfrak{\P} 65$  million in cost of cloud).

#### **Useful Lives of Property, Plant, and Equipment**

Buildings	Predominantly 25 to 50 years
Leased assets and 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

#### **Property, Plant, and Equipment**

€ millions	Land and Buildings	Land and Buildings Leased	Other Property, Plant, and Equipment	Other Property, Plant, and Equipment Leased	Advance Payments and Construction in Progress	Total
12/31/2018	1,344	-	1,985	-	224	3,553
12/31/2019	1,537	1,929	1,956	38	36	5,496
Additions						
2018	199	-	1,026	-	77	1,302
2019	85	360	586	19	17	1,067

The additions (other than from business combinations) relate primarily to the replacement and purchase of information technology equipment and the construction and leasing of buildings and data centers. For more information about the effect of the adoption of IFRS 16, see *Note (D.8)*.

#### (D.5) Equity Investments

#### **Accounting Policies, Judgments, and Estimates**

As we do not designate financial assets as "at fair value through profit or loss," we generally classify financial assets into the following categories: at amortized cost (AC), at fair value through other comprehensive income (FVOCI), and at fair value through profit or

loss (FVTPL), depending on the contractual cash flows of and our business model for holding the respective asset.

For equity securities, as the cash flow characteristics are typically other than solely principal and interest, we take an investment-by-investment decision whether to classify as FVTPL or FVOCI. Judgment is required particularly in estimating the fair values of equity securities that are not listed publicly.

Gains/losses on equity securities at FVTPL include gains/losses from fair value fluctuations, from disposals as well as dividends, while gains/losses on equity securities at FVOCI only include dividends, all of which are shown in Financial Income, net. Regular way purchases and sales are recorded as at the trade date.

### **Equity Investments**

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Equity securities	0	1,996	1,996	0	1,248	1,248
Investments in associates	0	16	16	0	26	26
Equity investments	0	2,012	2,012	0	1,274	1,274
4 Other financial assets	297	2,336	2,633	448	1,536	1,984
Equity investments as % of 🍄 other financial assets	0	86	76	0	83	64

For a list of the names of other equity investments, see *Note (G.9)*.

#### **Financial Commitments in Venture Capital Funds**

€ millions	2019	2018
Investments in venture capital funds	206	187

SAP invests and holds interests in unrelated parties that manage investments in venture capital. On December 31, 2019, total commitments to make such investments amounted to €517 million (2018: €418 million), of which €312 million had been drawn (2018: €232 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 contractually committed future capital contributions.

#### **Maturities**

€ millions	12/31/2019
	Investments in Venture Capital Funds
Due 2020	206
Total	206

### (D.6) Non-Current Assets by Region

The table below shows non-current assets excluding financial instruments, deferred tax assets, post-employment benefit assets, and rights arising under insurance contracts.

#### **Non-Current Assets by Region**

€ millions	2019	2018
Germany	4,486	4,184
Rest of EMEA	5,386	4,742
EMEA	9,872	8,926
United States	29,744	22,133
Rest of Americas	411	258
Americas	30,154	22,391
APJ	1,276	922
SAP Group	41,302	32,239

For a breakdown of our employee headcount by region, see *Note (B.1)*, and for a breakdown of revenue by region, see *Note (A.1)*.

## (D.7) Purchase Obligations

€ millions	2019	2018
Contractual obligations for acquisition of property, plant, and equipment and intangible assets	342	123
Other purchase obligations	2,251	2,010
Purchase obligations	2,592	2,133

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. The increase is mainly due to new purchase obligations related to cloud services and obligations to purchase hardware. Historically, the majority of such purchase obligations have been realized.

Of the other purchase obligations reported in 2018,  $\$ 205 million contain lease components which are now in the scope of IFRS 16. Those purchase obligations can be seen in the reconciliation table in *Note* (*D.8*).

#### **Maturities**

€ millions	12/31/2019
	Purchase Obligations
Due 2020	1.251
Due 2020	1,231
Due 2021 to 2024	1.298
Due thereafter	43
Total	2,592

## (D.8) Adoption of IFRS 16

#### Accounting Policies, Judgments, and Estimates

On January 1, 2019, we adopted IFRS 16 'Leases' using the modified retrospective transition approach. This approach requires that the cumulative effect of initially applying the standard be recognized as an adjustment to the opening balance of retained earnings on the date of initial application while the prior-year figures are not adjusted. The new standard impacts our lease accounting as, in general, all leases need to be recognized on the lessee's balance sheet. A lessee recognizes a right-of-use asset representing its right to use the underlying asset and a lease liability representing its obligation to make lease payments. The nature of expenses related to those leases has now changed because we recognize depreciation expense for right-of-use assets and interest expense on lease liabilities. These changes apply to leases that had previously been classified as operating leases under IAS 17. We have used practical expedients offered by the standard (such as non-capitalization of short-term leases and low-value leases, and the use of hindsight when determining the lease term if the contract contains options to extend or terminate the lease). For measuring our right-of-use assets for pre-existing leases, we have applied the retrospective approach for our most significant leases (primarily facility and data center leases), while smaller leases were measured at an amount equal to the lease liability and adjusted by the amount of any prepaid or accrued lease payments existing immediately prior to the date of initial application.

Upon IFRS 16 adoption, lease liabilities from pre-existing leases were discounted at the incremental borrowing rates as at January 1, 2019. The weighted average discount rate applied to the lease liabilities on January 1, 2019, was 2.5%. The following reconciliation to the opening balance for the lease liabilities as at January 1, 2019, is based upon the operating lease obligations disclosed as at December 31, 2018:

€ millions	
Purchase obligations relevant to IFRS 16 as at 12/31/2018	205
Financial commitments as at 12/31/2018	1,442
Lease related commitments as at 12/31/2018	1,647
(Less): commitments starting in 2019	(51)
(Less): non-lease components	(238)
Add: data updates	108
Adjusted commitments	1,466
Add: adjustments as a result of different treatment of extension and termination options	953
Discounting using the Company's incremental borrowing rate	(279)
Lease liabilities recognized as at 1/1/2019	2,140

Leases are shown as follows in the balance sheet as at December 31, 2019, and in the income statement for the year:

#### Leases in the Balance Sheet

€ millions	12/31/2019
Right-of-use assets	
Right-of-use assets – land and buildings	1,929
Right-of-use assets – other property, plant, and equipment	38
Total right-of-use assets	1,967
♠ Non-current assets	45,002
Right-of-use assets as % of 🍄 non-current assets	4
Lease liabilities	
Current lease liabilities	389
♠ Current financial liabilities	3,273
Current lease liabilities as % of 🏖 current financial liabilities	12
Non-current lease liabilities	1,814
1 Non-current financial liabilities	12,923
Non-current lease liabilities as % of $\P$ non-current financial liabilities	14

#### **Leases in the Income Statement**

€ millions	2019
Lease expenses within operating profit	
Depreciation of right-of-use assets	396
Lease expenses within finance income, net	
Interest expense on lease liabilities	55

IFRS 16 also affects SAP's cash flow statement for the year ended 2019: operating cash flow increased by  $\mathfrak{E}$ 319 million and cash flow from financing activities decreased by  $\mathfrak{E}$ 319 million.

The adjustments to the opening balances resulting from the initial application of IFRS 16 as at January 1, 2019, were as follows:

- Property, plant, and equipment increased by €1.9 billion
- Trade and other payables decreased by €0.1 billion
- Financial liabilities increased by €2.1 billion

For more information about right-of-use asset additions, see *Note (D.4)*, and for a maturity analysis of lease liabilities, see *Note (F.1)*. For more information about the cash flow related to lease liabilities, see the "Reconciliation of Liabilities Arising from Financing Activities" table within *Note (E.3)*.

## Section E - Capital Structure, Financing, and Liquidity

This section describes how SAP manages its capital structure. Our capital management is based on a high equity ratio, modest financial leverage, a well-balanced maturity profile, and deep debt capacity.

### (E.1) 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 on reasonable terms 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 and "A" by Standard & Poor's, both with stable outlook.

		12/31/2019			
	€ millions	% of Total Equity and Liabilities	€ millions	% of Total Equity and Liabilities	∆ in %
<b>₽</b> Equity	30,822	51	28,877	56	7
T Current liabilities	14,462	24	10,486	20	38
♣ Non-current liabilities	14,931	25	12,138	24	23
<b>₽</b> Liabilities	29,393	49	22,624	44	30
Thereof financial debt	13,668	23	11,331	22	21
Thereof lease liabilities	2,203	4	0	0	
4 Total equity and liabilities	60,215	100	51,502	100	17

Upon IFRS 16 adoption, liabilities and assets increased by €2,203 million, representing 4pp of the increase in total equity and liabilities.

In 2019, we drew  $\pounds 2,500$  million of an acquisition term loan for Qualtrics, whereof we repaid  $\pounds 500$  million. At maturity, we repaid  $\pounds 750$  million in Eurobonds. We refinanced  $\pounds 1,100$  million through the issuance of commercial papers. Thus, the ratio of total nominal volume of financial debt to total equity and liabilities increased by 1pp.

## (E.2) 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
1/1/2017	1,228.5	-29.9
Purchase of treasury shares	0	-5.4
Reissuance of treasury shares under share- based payments	0	0.2
12/31/2017	1,228.5	-35.1
Reissuance of treasury shares under share- based payments	0	0.2
12/31/2018	1,228.5	-34.9
12/31/2019	1,228.5	-34.9

#### **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. 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, 2019, €100 million, representing 100 million shares, was still available for issuance (2018: €100 million).

#### **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

#### Other Components of Equity

€ millions	Exchange Differences	Available-for-Sale Financial Assets	Cash Flow Hedges/Cost of Hedging	Total
1/1/2017	3,062	292	-8	3,345
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	-2,732	-135	29	-2,838
12/31/2017	330	157	21	508
Adoption of IFRS 9	0	-158	-3	-160
1/1/2018	330	0	18	347
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	910	0	-23	887
12/31/2018	1,239	0	-5	1,234
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	537	0	-1	536
12/31/2019	1,776	0	-6	1,770

#### **Treasury Shares**

By resolution of SAP SE's General Meeting of Shareholders held on May 17, 2018, the authorization granted by the General Meeting of Shareholders on June 4, 2013, 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 May 16, 2023, 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. Although treasury shares are legally considered outstanding, there are no dividend or voting rights associated with them. 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.

#### Distribution Policy and Dividends

Our general intention is to remain in a position to return liquidity to our shareholders by distributing annual dividends totaling 40% or more of our profit after tax and by potentially repurchasing treasury shares in future. We intend to repurchase shares with a volume of €1.5 billion in 2020.

In 2019, we distributed  $\[ \le \]$ 1,790 million ( $\[ \le \]$ 1.50 per share) in dividends for 2018 compared to  $\[ \le \]$ 1,671 million ( $\[ \le \]$ 1.40 per share) paid in 2018 for 2017 and  $\[ \le \]$ 1,499 million ( $\[ \le \]$ 1.25 per share) paid in 2017 for 2016. Aside from the distributed dividend, in 2017, we also returned  $\[ \le \]$ 500 million to our shareholders by repurchasing treasury shares.

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, 2019, the Executive Board intends to propose that a dividend of  $\[ \in \]$ 1.58 per share (that is, an estimated total dividend of  $\[ \in \]$ 1.886 million), be paid from the profits of SAP SE.

### (E.3) Liquidity

# Accounting for Non-Derivative Financial Instruments Classification and Measurement of Non-Derivative Financial Debt Investments

Our non-derivative financial debt investments comprise cash at banks and cash equivalents (highly liquid investments with original maturities of three months or less, such as time deposits and money-market funds), loans and other financial receivables, and acquired debt securities.

As we do not designate financial assets as "at fair value through profit or loss," we generally classify financial assets as: at amortized cost (AC), at fair value through other comprehensive income (FVOCI), or at fair value through profit or loss (FVTPL), depending on the contractual cash flows of, and our business model for, holding the respective asset. Financial assets having cash flow characteristics other than solely principal and interest such as money market and similar funds are generally classified as FVTPL. Generally, all other financial assets with cash flows consisting solely of principal and interest are classified as AC because we follow a conservative investment approach, safeguarding our liquidity by ensuring the safety of principal investment amounts.

Gains/losses on non-derivative financial debt investments at FVTPL are reported in Financial income, net and show interest income/expenses separately from other gains/losses which include gains/losses from fair value fluctuations and disposals. Gains/losses on non-derivative financial debt investments at AC are reported in Financial income, net and show interest income/expenses separately from other gains/losses which include gains/losses disposals and changes in expected and incurred credit losses. Gains/losses from foreign currency exchange rate fluctuations are included in Other non-operating income/expense, net. Regular way purchases and sales are recorded as at the trade date.

#### Impairment of Non-Derivative Financial Debt Investments

For these financial assets, we apply considerable judgment by employing the general impairment approach as follows:

For cash at banks, time deposits, and debt securities such as acquired bonds and commercial paper, we apply the low credit risk exception, as it is our policy to invest only in high-quality assets of issuers with a minimum rating of at least investment grade to minimize the risk of credit losses. Thus, these assets are always allocated to stage 1 of the three-stage credit loss model, and we record a loss allowance at an amount equal to 12-month expected credit losses. This loss allowance is calculated based on our exposure at the respective reporting date, the loss given default for this exposure, and the credit default swap spread as a measure for the probability of default. Even though we invest only in assets of at least investment-grade, we also closely observe the

development of credit default swap spreads as a measure of market participants' assessments of the creditworthiness of a debtor to evaluate probable significant increases in credit risk to timely react to changes should these manifest. Among others, we consider cash at banks, time deposits, and debt securities to be in default when the counterparty is unlikely to pay its obligations in full, when there is information about a counterparty's financial difficulties or if there is a drastic increase in a counterparty's credit default swap spread for a prolonged time period while the overall market environment remains generally stable. Such financial assets are written off either partially or in full if the likelihood of recovery is considered remote, which might be evidenced, for example, by the bankruptcy of a counterparty of such financial assets.

 Loans and other financial receivables are monitored based on borrower-specific internal and external information to determine whether there has been a significant increase in credit risk since initial recognition. We consider such assets to be in default if they are significantly beyond their due date or if the borrower is unlikely to pay its obligation. A write-off occurs when the likelihood of recovery is considered remote, for example when bankruptcy proceedings have been finalized or when all enforcement efforts have been exhausted.

#### Non-Derivative Financial Liabilities

Non-derivative financial liabilities include bank loans, issued bonds, private placements, and other financial liabilities. Included in other financial liabilities are customer funding liabilities which 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.

As we do not designate financial liabilities as FVTPL, we generally classify non-derivative financial liabilities as AC.

Expenses and gains or losses on financial liabilities at AC mainly consist of interest expense which is shown in Financial income, net. Gains/losses from foreign currency exchange rate fluctuations are included in Other non-operating income/expense, net.

#### Group Liquidity, Financial Debt, and Net Debt

Group liquidity consists of cash at banks, money market and other funds, time deposits, and debt securities (both with remaining maturities of less than one year). Financial debt is defined as the nominal volume of bank loans, commercial papers, private placements, and bonds. Net debt is group liquidity less financial debt.

### **Group Liquidity and Net Debt**

€ millions	2019	2018	Δ
◆ Cash and cash equivalents	5,314	8,627	-3,313
Current time deposits and debt securities	67	211	-144
Group liquidity	5,382	8,838	-3,456
Current financial debt	-2,529	-759	-1,770
Non-current financial debt	-11,139	-10,572	-567
Financial debt	-13,668	-11,331	-2,337
Net debt (-)	-8,286	-2,493	-5,793

While we continuously monitor the ratios presented in the capital structure table, we actively manage our liquidity and structure of our financial indebtedness based on the ratios group liquidity and net debt

### **Cash and Cash Equivalents**

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Cash at banks	2,877	0	2,877	2,918	0	2,918
Time deposits	1,093	0	1,093	4,117	0	4,117
Money market and other funds	1,347	0	1,347	1,195	0	1,195
Debt securities	0	0	0	400	0	400
Expected credit loss allowance	-3	0	-3	-3	0	-3
⊕ Cash and cash equivalents	5,314	0	5,314	8,627	0	8,627

### **Non-Derivative Financial Debt Investments**

€ millions	2019					2018		
	Current	Non-Current	Total	Current	Non-Current	Total		
Time deposits	44	0	44	137	0	137		
Debt securities	27	0	27	77	0	77		
Financial instruments related to employee benefit plans	0	183	183	0	165	165		
Loans and other financial receivables	100	117	217	57	91	147		
Expected credit loss allowance	-3	0	-3	-3	0	-3		
Non-derivative financial debt investments	167	300	467	268	256	524		
4 Other financial assets	297	2,336	2,633	448	1,536	1,984		
Non-derivative financial debt investments as % of $f T$ other financial assets	56	13	18	60	17	26		

Time deposits and debt securities with original maturity of three months or less are presented as cash and cash equivalents, and those with original maturities of greater than three months (investments considered in group liquidity) are presented as other financial assets. Debt securities consist of commercial papers and

acquired bonds of mainly financial and non-financial corporations and municipalities.

For more information about financial risk and the nature of risk, see *Note (F.1)*.

#### **Financial Debt**

€ millions					2019					2018
-	Nomi	nal Volume		Carry	ring Amount	Nomir	nal Volume		Carryii	ng Amount
-	Current	Non- Current	Current	Non-Current	Total	Current	Non- Current	Current	Non- Current	Total
Bonds	1,150	8,367	1,150	8,283	9,433	750	9,512	759	9,445	10,204
Private placement transactions	258	772	259	808	1,067	0	1,011	0	1,041	1,041
Commercial Papers	1,100	0	1,100	0	1,100	NA	NA	NA	NA	NA
Bank loans	21	2,000	22	1,995	2,017	9	49	9	49	58
Financial debt	2,529	11,139	2,531	11,086	13,617	759	10,572	768	10,535	11,303
<b>⊈</b> Financial liabilities			3,273	12,923	16,196			1,125	10,553	11,678
Financial debt as % of <b>4</b> financial liabilities			77	86	84			68	100	97

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 1.09% in 2019, 1.33% in 2018, and in 1.29% 2017.

For information about the risk associated with our financial liabilities, see *Note (F.1)*. For information about fair values, see *Note (F.2)*.

#### **Bonds**

						2019	2018
	Maturity	Issue Price	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	Carrying Amount (in € millions)	Carrying Amount (in€ millions)
Eurobond 6 – 2012	2019	99.307%	2.125% (fix)	2.29%	€750	0	759
Eurobond 8 – 2014	2023	99.478%	1.125% (fix)	1.24%	€1,000	997	996
Eurobond 9 – 2014	2027	99.284%	1.750% (fix)	1.87%	€1,000	985	992
Eurobond 11 – 2015	2020	100.000%	0.000% (var.)	0.07%	€650	650	649
Eurobond 12 – 2015	2025	99.264%	1.000% (fix)	1.13%	€600	596	595
Eurobond 14 – 2018	2021	100.519%	0.000% (var.)	-0.15%	€500	501	502
Eurobond 15 – 2018	2026	99.576%	1.000% (fix)	1.06%	€500	498	498
Eurobond 16 – 2018	2030	98.687%	1.375% (fix)	1.50%	€500	491	494
Eurobond 17 – 2018	2020	100.024%	0.000% (var.)	-0.01%	€500	500	500
Eurobond 18 – 2018	2022	99.654%	0.250% (fix)	0.36%	€900	898	897
Eurobond 19 – 2018	2024	99.227%	0.750% (fix)	0.89%	€850	844	843
Eurobond 20 – 2018	2028	98.871%	1.250% (fix)	1.38%	€1,000	982	988
Eurobond 21 – 2018	2031	98.382%	1.625% (fix)	1.78%	€1,250	1,224	1,229
Eurobonds						9,166	9,942
USD bond - 2018	2025	100.000%	2.607% (var.)	2.46%	US\$300	267	262
Bonds						9,433	10,204

All of our Eurobonds are listed for trading on the Luxembourg Stock Exchange.

#### **Private Placements**

					2019	2018
	Maturity	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	Carrying Amount (in € millions)	Carrying Amount (in € millions)
U.S. private placements						
Tranche 6 – 2012	2020	2.82% (fix)	2.86%	US\$290	259	251
Tranche 7 – 2012	2022	3.18% (fix)	3.22%	US\$444.5	406	395
Tranche 8 - 2012	2024	3.33% (fix)	3.37%	US\$323	305	299
Tranche 9 – 2012	2027	3.53% (fix)	3.57%	US\$100	97	96
Private placements		-			1,067	1,041

The U.S. private placement notes were issued by one of our subsidiaries that has the U.S. dollar as its functional currency.

#### **Commercial Paper**

The net proceeds from our commercial paper program ("Commercial Paper") are being used for general corporate purposes, including dividends and share repurchases. As at December 31, 2019, we had €1,099.5 million of Commercial Paper outstanding with maturities generally less than six months and the carrying amount amounted to €1,100.5 million (December 31, 2018: NA). The weighted average interest rate of our Commercial Paper was −0.38% as at December 31, 2019 (December 31, 2018: NA).

## **Reconciliation of Liabilities Arising from Financing Activities**

The changes in our financial debts are reconciled to the cash flows from borrowings included in the cash flow from financing activities.

€ millions	1/1/2019	Cash Flows	Business Combinations	Foreign Currency	Fair Value Changes	Other	12/31/2019
Current financial debt	759	-188	0	-6	0	1,963	2,529
Non-current financial debt	10,572	2,500	0	30	0	-1,963	11,139
Financial debt (nominal volume)	11,331	2,312	0	25	0	0	13,668
Basis adjustment	42	0	0	1	-30	0	13
Transaction costs	-70	0	0	0	0	5	-64
Financial debt (carrying amount)	11,303	2,312	0	25	-30	5	13,616
Accrued interest	47	0	0	1	0	19	67
Interest rate swaps	-7	0	0	0	14	0	7
Lease <sup>1)</sup>	2,168	-403	52	38	0	348	2,204
Total liabilities from financing activities	13,512	1,910	52	64	-16	373	15,895

<sup>&</sup>lt;sup>1)</sup> Other includes new lease liabilities

€ millions	1/1/2018	Cash Flows	Business Combinations	Foreign Currency	Fair Value Changes	Other	12/31/2018
Current financial debt	1,299	-1,300	7	3	0	750	759
Non-current financial debt	4,965	6,308	0	49	0	-750	10,572
Financial debt (nominal volume)	6,264	5,008	7	51	0	0	11,331
Basis adjustment	62	0	0	-1	-19	0	42
Transaction costs	-26	-48	0	0	0	3	-70
Financial debt (carrying amount)	6,301	4,961	7	50	-19	3	11,303
Accrued interest	34	0	0	-1	0	14	47
Interest rate swaps	-24	0	0	-1	17	0	-7
Total liabilities from financing activities	6,311	4,961	7	48	-1	18	11,343

## **Section F – Management of Financial Risk Factors**

This section discusses financial risk factors and risk management regarding foreign currency exchange rate risk, interest rate risk, equity price risk, credit risk, and liquidity risk. Further, it contains information about financial instruments.

# (F.1) Financial Risk Factors and Risk Management

#### Accounting for Derivative Financial 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 IFRS 9, which involves judgment.

## **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 IFRS 9. 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.

Fair value fluctuations in the spot component of such derivatives at FVTPL are included in Other non-operating income/expense, net while the forward element is shown in Financial income, net.

#### **Derivatives Designated as Hedging Instruments**

#### a) Cash Flow Hedge

In general, we apply cash flow hedge accounting to the foreign currency risk of highly probable forecasted transactions. 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. Accordingly, the effective portion of these components determined on a present value basis is recorded in other comprehensive income. The forward element and time element as well as foreign currency basis spreads excluded from the hedging relationship are recorded as cost of hedging in a separate position in other comprehensive income. As the amounts are not material, they are presented together with the effective portion of the cash flow hedges in our consolidated statements of comprehensive income and consolidated statements of changes in equity. All other components including counterparty credit risk adjustments of the derivative and the ineffective portion are immediately recognized in Financial Income, net in profit or loss. Amounts accumulated in other comprehensive income are reclassified to profit or loss to Other non-operating income/expense, net and Financial income, net in the same period when the hedged item affects profit or loss.

#### b) Fair Value Hedge

We apply fair value hedge accounting for certain of our fixed-rate financial liabilities and show the fair value fluctuations in Financial income, net.

#### c) Valuation and Testing of Effectiveness

At inception of a designated hedging relationship, we document our risk management strategy and the economic relationship between hedged item and hedging instrument. The existence of an economic relationship is demonstrated as well as the effectiveness of the hedging relationship tested prospectively by applying the critical terms match for our foreign currency hedges, since currencies, maturities, and the amounts are closely aligned for the forecasted transactions and for the spot element of the forward exchange rate contract or intrinsic value of the currency options, respectively. For interest rate swaps, effectiveness is tested prospectively 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 main sources of ineffectiveness are:

- The effect of the counterparty and our own credit risk on the fair value of the forward exchange contracts and interest rate swaps, which is not reflected in the respective hedged item, and
- Differences in the timing of hedged item and hedged transaction in our cash flow hedges.

We are exposed to various financial risks, such as market risks (that is, foreign currency exchange rate risk, interest rate risk, and equity price risk), credit risk, and liquidity risk.

We manage market risks, credit risk, and liquidity risk on a Group-wide basis through our global treasury department, global risk management, and global credit management. Risk management policies are established to identify risks, to set appropriate risk limits, and to monitor risks. Risk management policies and hedging strategies are laid out in our internal guidelines (for example, treasury guideline and other internal guidelines), and are subject to continuous internal review and analysis to reflect changes in market conditions and our business.

We only purchase derivative financial instruments 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 Foreign Currency Exchange Rate Risk Factors

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 fluctuations from ongoing ordinary operations is not considered significant. However, SAP occasionally generates 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 below.

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.

## 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.

## 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 hedge ratio of 1:1 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, ineffectiveness was either not material or non-existent 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.

The amounts as at December 31, 2019, relating to items designated as hedged items were as follows:

#### Designated Hedged Items in Foreign Currency Exchange Rate Hedges

	Forecasted License Payments
€ millions	2019
Change in value used for calculating hedge ineffectiveness	-7
Cash flow hedge	_7
Cost of hedging	-2
Balances remaining in cash flow hedge reserve for which hedge accounting is no longer applied	0

The amounts as at December 31, 2019, designated as hedging instruments were as follows:

#### Designated Hedging Instruments in Foreign Currency Exchange Rate Hedges

·	Forecasted License Payments
€ millions	2019
Nominal amount	518
Carrying amount	
Other financial assets	3
Other financial liabilities	-11
Change in value recognized in OCI	7
Hedge ineffectiveness recognized in finance income, net	0
Cost of hedging recognized in OCI	2
Amount reclassified from cash flow hedge in OCI to other non-operating income, net	-22
Amount reclassified from cost of hedging in OCI to finance income, net	-6

On December 31, 2019, we held the following instruments to hedge exposures to changes in foreign currency:

## Details on Hedging Instruments in Foreign Currency Exchange Rate Hedges

_	_	
		Maturity
		2019
	1 to 6 months	7 to 12 months
Forward exchange contracts		
Net exposure in € millions	324	193
Average EUR:GBP forward rate	88.77	89.84
Average EUR:JPY forward rate	121.97	119.32
Average EUR:CHF forward rate	1.11	1.09
Average EUR:AUD forward rate	1.63	1.65

#### **Foreign Currency Exchange Rate Exposure**

Our risk exposure is based on the following assumptions:

- 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 do not have a significant impact on either profit or 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:

- The spot component of derivatives held within a designated cash flow hedge relationship affecting other comprehensive income
- Foreign currency embedded derivatives affecting other nonoperating expense, net

Thus, our foreign currency exposure (and our average/high/low exposure) as at December 31, 2019, was as follows:

#### **Foreign Currency Exposure**

€ billions	2019	2018
Year-end exposure toward all our major currencies	1.0	6.3
Average exposure	0.7	2.1
Highest exposure	1.0	6.3
Lowest exposure	0.6	0.7

#### Foreign Currency Exchange Rate Sensitivity

We calculate our sensitivity on an upward/downward shift of +/- 10% of the foreign currency exchange rate between the euro and all major currencies (2018: +/-10% of the foreign currency exchange rate between the euro and all other major currencies; 2017: +/-10% of the foreign currency exchange rate between the euro and all other major currencies). If, on December 31, 2019, 2018, and 2017, the foreign currency exchange rates had been higher/lower as described above, this would have had the following effects on other non-operating expense, net and other comprehensive income:

#### **Foreign Currency Sensitivity**

€ millions	Effects on Other Non-Operating Expense, Net			Effects on Other Comprehensive Income		
	2019	2018	2017	2019	2018	2017
Derivatives held within a designated cash flow hedge relationship						
All major currencies –10% (2018: all major currencies –10%; 2017: all major currencies –10%)				53	62	71
All major currencies +10% (2018: all major currencies +10%; 2017: all major currencies +10%)				-53	-62	-71
Embedded derivatives						
All currencies –10%	53	11	15	•••		
All currencies +10%	-53	-11	-15			
FX option held in connection with the acquisition of Qualtrics				•••		
USD -10%	0	-29	0			
USD +10%	0	559	0			

#### Interest Rate Risk

#### **Interest Rate Risk Factors**

We are exposed to interest rate risk as a result of our investing and financing activities mainly in euros and U.S. dollars, since a large part of our investments are based on variable rates and/or short maturities (2019: 80%; 2018: 48%) and most of our financing transactions are based on fixed rates and long maturities (2019: 69%; 2018: 83%).

#### **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. The desired fixed-floating mix of our net debt is set by the Treasury Committee.

## Derivatives Designated as Hedging Instruments (Fair Value Hedges)

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 on a 1:1 ratio. Including interest rate swaps, 35% (2018: 71%) of our total interest-bearing financial liabilities outstanding as at December 31, 2019, had a fixed interest rate.

The amounts as at December 31, 2019, relating to items designated as hedged items were as follows:

#### **Designated Hedged Items in Interest Rate Hedges**

		2019
€ millions	Fixed-Rate Borrowing in EUR	Fixed-Rate Borrowing in USD
Notional amount	3,750	545
Carrying amount	3,707	545
Accumulated fair value adjustments in Other financial liabilities	25	-38
Change in fair value used for measuring ineffectiveness	25	-11
Accumulated amount of fair value hedge adjustments for hedged items ceased to be adjusted for hedging gains/losses	0	-28

The amounts as at December 31, 2019, designated as hedging instruments were as follows:

## Designated Hedging Instruments in Interest Rate Hedges

		2019
€ millions	Interest Rate Swaps for EUR Borrowing	Interest Rate Swaps for USD Borrowing
Notional amount	3,750	545
Carrying amount		
Other financial assets	0	9
Other financial liabilities	-16	0
Change in fair value used for measuring ineffectiveness	-16	9

As at December 31, 2019, we held the following instruments to hedge exposures to changes in interest rates:

#### **Details on Hedging Instruments in Interest Rate Hedges**

			_				
							2019
							Maturity
€ millions	2020	2022	2024	2027	2028	2030	2031
EUR interest rate swaps							
Nominal amounts				1,000	1,000	500	1,250
Average variable interest rate				1.528%	0.952%	0.927%	1.090%
USD interest rate swaps							
Nominal amounts	258	198	89				
Average variable interest rate	2.516%	2.491%	2.370%				

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**

Our interest rate exposure (and our average/high/low exposure) as at December 31 was as follows:

#### **Interest Rate Risk Exposure**

€ billions	2019								
	Year-End	Average	High	Low	Year-End	Average	High	Low	
Fair value interest rate risk								,,	
From investments	0.03	0.05	0.07	0.03	0.08	0.09	0.10	0.08	
Cash flow interest rate risk									
From investments (including cash)	4.32	4.32	5.04	3.89	4.24	4.16	5.65	3.50	
From financing	3.92	4.25	4.43	3.92	1.96	2.08	2.32	1.45	
From interest rate swaps	4.29	3.05	5.06	1.28	1.28	1.31	1.36	1.27	

#### Interest Rate Sensitivity

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 fair value through profit or loss 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, we include those effects of market interest rates on interest payments 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 +50/+10 basis points (bps) for the U.S. dollar/euro area (2018: +100/+30bps for the U.S. dollar/euro area; 2017: +100/+25bps for the U.S. dollar/euro area), and a yield curve downward shift of -50/-20bps for the U.S. dollar/euro area (2018: -25/-10bps for the U.S. dollar/euro area; 2017: -25bps).

If, on December 31, 2019, 2018, and 2017, 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 Fina	ncial Income, Net
	2019	2018	2017
Derivatives held within a designated fair value hedge relationship			
Interest rates +50bps for U.S. dollar area/+10bps for euro area (2018: +100/+30bps for U.S. dollar/euro area; 2017: +100/+25bps for U.S. dollar/euro area)	-41	-20	-26
Interest rates –50bps for U.S. dollar/–20bps for euro area (2018: –25 /–10bps for U.S. dollar/euro area; 2017: –25bps for U.S. dollar/euro area)	76	5	9
Variable-rate financing			
Interest rates +50bps for U.S. dollar area/+10bps for euro area (2018: +100/+30bps for U.S. dollar/euro area; 2017: +25bps for euro area)	-8	-24	-5
Interest rates –50bps for U.S. dollar/–20bps for for euro area (2018: –25/–10bps for U.S. dollar/euro area; 2017: –25bps for euro area)	8	4	0

#### **Equity Price Risk**

#### **Equity Price Risk Factors**

We are exposed to equity price risk with regard to our investments in equity securities and our share-based payments plans

#### **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.

We also monitor the exposure with regard to our share-based payment plans. To reduce resulting profit or loss volatility, we hedge certain cash flow exposures associated with these plans by purchasing derivative instruments, but we do not establish a designated hedge relationship.

#### **Equity Price Exposure**

On December 31, 2019, our exposure from our investments in equity securities was  $\[ \le \]$ 1,996 million (2018:  $\[ \le \]$ 1,248 million; 2017:  $\[ \le \]$ 827 million).

For information about the exposure from our share-based payments plans, see *Note (B.3)*.

#### **Equity Price Sensitivity**

In our sensitivity analysis for our share-based payments plans, we include the hedging instruments and the underlying share-based payments even though the latter are scoped out of IFRS 7, as we believe that taking only the derivative instrument into account would not properly reflect our equity price risk exposure.

Our sensitivity towards a fluctuation in equity prices is as follows:

#### **Equity Price Sensitivity**

€ millions	2019	2018	2017
Investments in equity securities			
Increase in equity prices and respective unobservable inputs of 10% - increase of financial income, net by	156	65	56
Decrease in equity prices and respective unobservable inputs of 10% - decrease of financial income, net by	-156	-65	-56
Share-based payments			
Increase in equity prices of 20%			
Increase of share-based payment expenses by	-298	-279	-371
Increase of offsetting gains from hedging instruments by	48	57	65
Decrease in equity prices of 20%			
Decrease of share-based payment expenses by	307	262	337
Decrease of offsetting gains from hedging instruments by	-46	-44	-46

#### Credit Risk

#### **Credit Risk Factors**

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.

#### **Credit Risk Management**

Cash at Banks, Time Deposits, and Debt Securities

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 invest in issuers with a lower rating in exceptional cases. Such investments were not material in 2019 and 2018. The weighted average rating of our financial assets is in the range A to A–. 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 that depends on the lowest official longterm 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 and react in a timely manner to changes should these manifest.

For cash at banks, time deposits, and debt securities such as acquired bonds or commercial paper, we apply the general impairment approach. As it is our policy to only invest in high-quality assets of issuers with a minimum rating of at least investment grade so as to minimize the risk of credit losses, we use the low credit risk exception. Thus, these assets are always allocated to stage 1 of the three-stage credit loss model and we record a loss allowance for an amount equal to 12-month expected credit losses. This loss

allowance is calculated based on our exposure as at the respective reporting date, the loss given default for this exposure, and the credit default swap spread as a measure for the probability of default. To ensure that during their lifetime our investments always fulfill the requirement of being investment-grade, we monitor changes in credit risk by tracking published external credit ratings. Among other things, we consider cash at banks, time deposits, and debt securities to be in default when the counterparty is unlikely to pay its obligations in full, when there is information about a counterparty's financial difficulties, or in case of a drastic increase in the credit default swap spread of a counterparty for a prolonged time period while the overall market environment remains rather stable. Such financial assets are written off either partially or in full if the likelihood of recovery is considered remote, which might be evidenced, for example, by the bankruptcy of a counterparty of such financial assets.

#### Trade Receivables

The default risk of our trade receivables is managed separately, mainly based on assessing the creditworthiness of customers through external ratings and on our past experience with the customers concerned. Based on this assessment, individual credit limits are established for each customer and deviations from such credit limits need to be approved by management.

We apply the simplified impairment approach using a provision matrix for all trade receivables and contract assets to take into account any lifetime expected credit losses already at initial recognition. For the purpose of the provision matrix, customers are clustered into different risk classes, mainly based on market information such as the country risk assessment of their country of origin. Loss rates used to reflect lifetime expected credit losses are determined using a roll-rate method based on the probability of a receivable progressing through different stages of being overdue and

on our actual credit loss experience over the past years. These loss rates are enhanced by forward-looking information to reflect differences between economic conditions during the period over which the historical data has been collected, current conditions, and the expected changes in the economic conditions over the expected life of the receivables. Forward-looking information is based on changes in country risk ratings, or fluctuations in credit default swaps of countries of the customers we do business with. We continuously monitor outstanding receivables locally to assess whether there is objective evidence that our trade receivables and contract assets are credit-impaired. Evidence that trade receivables and contract assets are credit-impaired include, among the trade receivables being past due, information about significant financial difficulty of the customer or non-adherence to a payment plan. We consider receivables to be in default when the counterparty is unlikely to pay its obligations in full, However, a delay of payments (for example, more than 90 days past due) in the normal course of business alone does not necessarily indicate a customer default. We write off account balances either partially or in full if we judge that the likelihood of recovery is remote, which might be evidenced, for example, when bankruptcy proceedings for a customer are finalized or when all enforcement efforts have been exhausted.

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 (A.2.)*.

#### **Credit Risk Exposure**

Cash, Time Deposits, and Debt Securities

As at December 31, 2019, our exposure to credit risk from cash, time deposits, and debt securities was as follows:

#### Credit Risk Exposure from Cash, Time Deposits, and Debt Securities

€ millions, unless					2019
otherwise stated	Equivalent to External Rating	Weighted Average Loss Rate	Gross Carrying Amount Not Credit-Impaired	Gross Carrying Amount Credit-Impaired	ECL Allowance
Risk class 1 - low risk	AAA to BBB-	-0.1%	3,838	0	-3
Risk class 2 - high risk	BB to D	0.0%	23	0	0
Risk class 3 - unrated	NA	-5.0%	52	0	-3
Total	-	-0.2%	3.913	0	-6
. ota.			-,		
€ millions, unless					2018
	Equivalent to External Rating	Weighted Average Loss Rate	Gross Carrying Amount Not Credit-Impaired	Gross Carrying Amount Credit-Impaired	2018 ECL Allowance
€ millions, unless	Rating				
€ millions, unless otherwise stated	Rating  AAA to BBB-	Rate	Not Credit-Impaired		
€ millions, unless otherwise stated Risk class 1 - low risk	Rating  AAA to BBB-  BB to D	Rate -0.1%	Not Credit-Impaired 7,406		

As at December 31, 2019, the major part of our time deposits, other loans, and other financial receivables was concentrated in Germany. There were no time deposits, loans, or other financial receivables past due but not impaired and we had no indications of impairments of such assets that were not past due and not impaired as at that date.

#### Trade Receivables and Contract Assets

As at December 31, 2019, our exposure to credit risk from trade receivables was as follows:

#### **Credit Risk Exposure from Trade Receivables and Contract Assets**

€ millions, unless otherwise				2019
stated	Weighted Average Loss Rate	Gross Carrying Amount Not Credit-Impaired	Gross Carrying Amount Credit-Impaired	ECL Allowance
AR not due and due	-0.2%	5,226	0	-9
AR overdue 1 to 30 days	-0.5%	733	36	-4
AR overdue 30 to 90 days	-0.8%	668	23	-5
AR overdue more than 90 days	-11.1%	869	158	-114
TOTAL	-1.7%	7,496	217	-131

€ millions, unless otherwise				2018
stated	Weighted Average Loss Rate	Gross Carrying Amount Not Credit-Impaired	Gross Carrying Amount Credit-Impaired	ECL Allowance
AR not due and due	-0.3%	4,288	0	-13
AR overdue 1 to 30 days	-0.3%	749	15	-2
AR overdue 30 to 90 days	-0.5%	551	8	-3
AR overdue more than 90 days	-13.0%	558	125	-89
TOTAL	-1.7%	6,146	148	-107

For 2019, the movement in the ECL allowance for trade receivables and contract assets is as follows:

## Movement in ECL Allowance for Trade Receivables and Contract Assets

	2019	2018
€ millions	ECL Allowance	ECL Allowance
Balance as at 1/1 under IFRS 9	-107	-99
Net credit losses recognized	-38	-18
Amounts written off	13	10
Balance as at 12/31	-131	-107

#### Liquidity Risk

#### **Liquidity Risk Factors**

We are exposed to liquidity risk from our obligations towards suppliers, employees, and financial institutions.

#### **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 operations, 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, in 2017, SAP SE entered into a €2.5 billion syndicated credit facility agreement with a term

until 2024. 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 17bps. We are also required to pay a commitment fee of 5.95bps per annum on the unused available credit. We have not drawn on the facility.

In September 2019, we initiated a commercial paper program ("Commercial Paper"). As at December 31, 2019, we had €1,099.5 million of Commercial Paper outstanding with maturities generally less than six months.

#### **Liquidity Risk Exposure**

The table below is an analysis of the remaining contractual maturities of all our financial liabilities held as at December 31, 2019. 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, 2019. 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.

#### **Contractual Maturities of Non-Derivative Financial Liabilities**

€ millions	Carrying Amount					Contractua	al Cash Flows
	12/31/2019	2020	2021	2022	2023	2024	Thereafter
Non-derivative financial liabilities							
Trade payables	-1,283	-1,283	0	0	0	0	0
Lease liabilities	-2,203	-431	-363	-284	-224	-190	-1,019
Other financial liabilities	-13,912	-2,888	-630	-3,414	-1,095	-1,231	-5,467
Total of non-derivative financial liabilities	-17,398	-4,602	-993	-3,698	-1,319	-1,421	-6,486
€ millions	Carrying Amount					Contractua	al Cash Flows
	12/31/2018	2019	2020	2021	2022	2023	Thereafter
Non-derivative financial liabilities							
Trade payables	-1,265	-1,265	0	0	0	0	0
Financial liabilities	-11,602	-1,149	-1,585	-622	-1,410	-1,097	-6,689
Total of non-derivative financial liabilities	-12,866	-2,414	-1,585	-622	-1,410	-1,097	-6,689

#### Contractual Maturities of Derivative Financial Liabilities and Financial Assets

€ millions	Carrying Amount	Contractu	al Cash Flows	Carrying Amount	Contractual Cash Flows		
_	12/31/2019	2020	Thereafter	12/31/2018	2019	Thereafter	
Derivative financial liabilities and assets							
Derivative financial liabilities							
Currency derivatives not designated as hedging instruments	-55			-64			
Cash outflows		-2,865	-3		-2,111	-11	
Cash inflows		2,816	0		2,062	0	
Currency derivatives designated as hedging instruments	-11			-9			
Cash outflows		-415	0		-340	0	
Cash inflows		401	0		330	0	
Interest rate derivatives designated as hedging instruments	-16			-3			
Cash outflows		-28	-536		-15	-27	
Cash inflows		36	515		13	26	
Total of derivative financial liabilities	-82	-55	-24	-76	-61	-12	
Derivative financial assets							
Currency derivatives not designated as hedging instruments	33			100			
Cash outflows		-3,442	0		-4,025	0	
Cash inflows		3,468	0		4,076	0	
Currency derivatives designated as hedging instruments	3			2			
Cash outflows		-114	0		-203	0	
Cash inflows		117	0		202	0	
Interest rate derivatives designated as hedging instruments	9			11			
Cash outflows		-14	-18		-8	-14	
Cash inflows		17	24		19	15	
Total of derivative financial assets	44	32	6	113	61	1	
Total of derivative financial liabilities and assets	-37	-23	-18	37	0	-11	

# (F.2) Fair Value Disclosures on Financial Instruments

#### Level Transfers

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.

### Fair Value of Financial Instruments

We use various types of financial instruments in the ordinary course of business, which are classified as either amortized cost (AC) or fair value through profit or loss (FVTPL). 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						12	2/31/2019
		Carrying	Measurement	Categories				Fair Value
		Amount	At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents		5,314						
Cash at banks <sup>1)</sup>	AC	2,877	2,877					
Time deposits <sup>1)</sup>	AC	1,090	1,090					
Money market and similar funds	FVTPL	1,347		1,347	1,347			1,347
Trade and other receivables		8,037						
Trade receivables <sup>1)</sup>	AC	7,582	7,582					
Other receivables <sup>2)</sup>	_	454						
Other financial assets		2,633						
Debt securities	AC	27	27		27			27
Equity securities	FVTPL	1,996		1,996	25	89	1,882	1,996
Investments in associates <sup>2)</sup>	_	16						
Time deposits	AC	41	41			41		41
Financial instruments related to employee benefit plans <sup>2)</sup>	_	183						
Loans and other financial receivables	AC	217	217			217		217
Derivative assets								
Designated as hedging instrument								
FX forward contracts	_	3		3		3		3
Interest rate swaps	_	9		9		9		9
Not designated as hedging instrument								
FX forward contracts	FVTPL	33		33		33		33
Call options for share-based payments	FVTPL	95		95		95		95
Call option on equity shares	FVTPL	15		15			15	15
Liabilities						· · · · · · · · · · · · · · · · · · ·		
Trade and other payables		-1,589		•••••••••••••••••••••••••••••••••••••••				
Trade payables <sup>1)</sup>	AC	-1,283	-1,283	······································				
Other payables <sup>2)</sup>	_	-306						
Financial liabilities		-16,196						
Non-derivative financial liabilities								
Loans	AC	-3,116	-3,116			-3,116		-3,116
Bonds	AC	-9,433	-9,433		-10,003			-10,003
Private placements	AC	-1,067	-1,067			-1,078		-1,078
Other non-derivative financial liabilities <sup>3)</sup>	AC	-2,498	-2,498			-296		-296
Derivatives								
Designated as hedging instrument								
FX forward contracts	_	-11		-11		-11		-11
Interest rate swaps	_	-16		-16		-16		-16
Not designated as hedging instrument								
FX forward contracts	FVTPL	-55		-55		-55		-55
Total financial instruments, net		-1,801	-5,564	3,416	-8,604	-4,086	1,896	-10,793

### Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

€ millions	Category						12	2/31/2018
		Carrying Amount	Measurement	Categories				Fair Value
		Amount	At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents		8,627						
Cash at banks <sup>1)</sup>	AC	2,918	2,918					
Time deposits <sup>1)</sup>	AC	4,514	4,514					
Money market and similar funds	FVTPL	1,195		1,195	1,195			1,195
Trade and other receivables		6,480						
Trade receivables <sup>1)</sup>	AC	6,188	6,188					
Other receivables <sup>2)</sup>	_	293						
Other financial assets		1,984						
Debt s ecurities	AC	77	77		77			77
Equity securities	FVTPL	1,248		1,248	52		1,196	1,248
Investments in associates <sup>2)</sup>	_	26						
Time deposits	AC	134	134			134	•••••••••••	134
Financial instruments related to employee benefit plans <sup>2)</sup>	_	165						
Loans and other financial receivables	AC	147	147			147		147
Derivative assets								
Designated as hedging instrument								
FX forward contracts	_	2		2		2		2
Interest rate swaps	_	11		11		11		11
Not designated as hedging instrument				•••••				
FX forward contracts	FVTPL	100		100		100		100
Call options for share-based payments	FVTPL	68		68		68		68
Call option on equity shares	FVTPL	5		5			5	5
Liabilities								
Trade and other payables		-1,614						
Trade payables <sup>1)</sup>	AC	-1,265	-1,265					
Other payables <sup>2)</sup>	_	-350						
Financial liabilities		-11,678						
Non-derivative financial liabilities								
Loans	AC	-58	–58			-58		-58
Bonds	AC	-10,204	-10,204		-10,365			-10,365
Private placements	AC	-1,041	-1,041			-1,035		-1,035
Other non-derivative financial liabilities	AC	-298	-298			-298		-298
Derivatives								
Designated as hedging instrument								
FX forward contracts	_	-9		-9		-9		
Interest rate swaps	_	-3		-3		-3		 -3
Not designated as hedging instrument								
FX forward contracts	FVTPL	_65		-65		-65		65
Total financial instruments, net		3,798	1,112	2,553	-9,041	-1,006	1,201	-8,845

<sup>&</sup>lt;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>&</sup>lt;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.

<sup>3)</sup> For lease liabilities, included in the line item other non-derivative financial liabilities, separate disclosure of fair value is not required.

## Fair Values of Financial Instruments by Instrument Classification

€ millions	Category			12/31/2019
		Carrying Amount	At Amortized Cost	At Fair Value
Financial assets				
At fair value through profit or loss	FVTPL	3,486		3,486
At amortized cost	AC	11,834	11,834	
Financial liabilities				
At fair value through profit or loss	FVTPL	-55		-55
At amortized cost	AC	-17,398	-17,398	

## **Fair Values of Financial Instruments by Instrument Classification**

€ millions	Category			12/31/2018
		Carrying Amount	At Amortized Cost	At Fair Value
Financial assets				
At fair value through profit or loss	FVTPL	2,617		2,617
At amortized cost	AC	13,978	13,978	
Financial liabilities				
At fair value through profit or loss	FVTPL	-65		-65
At amortized cost	AC	-12,866	-12,866	

## **Determination of Fair Values**

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

Туре	Fair Value Hierarchy	Determination of Fair Value/ Valuation Technique	Significant Unobservable Inputs	Interrelationship Between Significant Unobservable Inputs and Fair Value Measurement
Other financial assets				-
Money-market and similar funds	Level 1	Quoted prices in an active market	NA	NA
Debt securities	Level 1	Quoted prices in an active market	NA	NA
Listed equity	Level 1	Quoted prices in an active market	NA	NA
securities	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 securities	Level 3	Market approach. Comparable company valuation using revenue multiples derived from companies comparable to the investee.	Peer companies used (revenue multiples range from 3.0 to 9.1) Revenues of investees Discounts for lack of marketability (10% to 30%)	The estimated fair value would increase (decrease) if:  - The revenue multiples were higher (lower)  - The investees' revenues werhigher (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	2018: Market approach. Company valuation using revenue multiples based on actual results derived from the investee.	2018: Revenue multiples used revenue of the investee	2018: The estimated fair value would increase (decrease) if: - The revenue multiples were higher (lower) - The investees' revenue were higher (lower)
		2019: 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
Other financial assets/Financial I	iabilities			
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**

	Туре	Fair Value Hierarchy	Determination of Fair Value/Valuation Technique
Financial liabilities			
	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 at 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 equity securities from Level 2 to Level 1, which occurred because disposal restrictions lapsed and deducting a discount for such restriction was no longer necessary, were

€5 million in 2019 (2018: €46 million), while transfers from Level 1 to Level 2 did not occur at all.

#### Level 3 Fair Value Disclosures

The following table shows the reconciliation of fair values from the opening to the closing balances for our unlisted equity securities and call options on equity shares classified as Level 3 fair values:

#### **Reconciliation of Level 3 Fair Values**

€ millions	2019	2018
1/1	1,202	742
Transfers		
Into Level 3	0	0
Out of Level 3	-39	-12
Purchases	487	409
Sales	-183	-143
Gains/losses		
Included in financial income, net in profit or loss	411	168
Included in exchange differences in other comprehensive income	18	38
12/31	1,896	1,202
Change in unrealized gains/losses in profit or loss for equity investments held at the end of the reporting period		117

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 securities held as FVTPL as at the reporting date.

## **Section G – Other Disclosures**

This section provides additional disclosures on miscellaneous topics, including information pertaining to the Executive Board, Supervisory Board, related party transactions, and other corporate governance topics.

## (G.1) Prepaid Expenses and Other Tax Assets

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Prepaid expenses	427	179	606	305	131	436
Other tax assets	225	87	312	170	98	268
Total	652	266	918	475	229	704
$oldsymbol{\Phi}$ Other non-financial assets	1,188	1,701	2,889	889	1,301	2,191
Prepaid expenses and other tax assets as % of 🏵 other non-financial assets	55	16	32	53	18	32

Prepaid expenses primarily consist of prepayments for operating leases, support services, and software royalties. Other tax assets primarily consist of VAT.

## (G.2) Other Tax Liabilities

€ millions			2019			2018
	Current	Non-Current	Total	Current	Non-Current	Total
Other tax liabilities	650	0	650	541	0	541
The Other non-financial liabilities	4,818	814	5,632	4,120	501	4,622
Other tax liabilities as % of 🍄 other non-financial liabilities	13	0	12	13	0	12

Other tax liabilities primarily consist of VAT, payroll tax, sales tax, and withholding tax.

# (G.3) Other Litigation, Claims, and Legal Contingencies

This Note discloses information about intellectual propertyrelated litigation and claims, tax-related litigation other than income tax-related litigation (see *Note (C.5)*), and anti-bribery and export control matters.

#### Uncertainty in Context of Legal Matters

The policies outlined in *Note* (A.4) for customer-related provisions, which include provisions for customer-related litigation cases and claims, equally apply to our other litigation, claims, and legal contingencies disclosed in this Note.

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 resolve 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 typically not practicable to reliably estimate the financial effect that these lawsuits and claims would have if SAP were to incur expenditure for these cases.

Further, the expected timing of any resulting outflows of economic benefits from these lawsuits and claims is typically uncertain and not estimable, as it depends generally on the duration of the legal proceedings and settlement negotiations required to resolve them.

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. We will continue to vigorously defend against all claims and lawsuits against us. The provisions recorded for these claims and lawsuits as at December 31, 2019, are neither individually nor in the aggregate material to SAP.

Among the claims and lawsuits disclosed in this Note 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.

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, 2019 and 2018. 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. We currently believe that resolving the intellectual property-related claims and lawsuits pending as at December 31, 2019, will neither individually nor in the aggregate have a material adverse effect on our business, financial position, profit, or cash flows.

Individual cases of intellectual property-related litigation and claims include the following:

In June 2018, Teradata Corporation, Teradata US, Inc. and Teradata Operations, Inc. (collectively "Teradata") filed a civil lawsuit against SAP SE, SAP America, Inc. and SAP Labs, LLC in U.S. federal court in California. Teradata alleges that SAP misappropriated trade secrets of Teradata, infringed Teradata's copyrights, and violated U.S. antitrust laws. Teradata seeks unspecified monetary damages and injunctive relief. Trial is scheduled for late 2021.

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 trial for SAP (including its subsidiary Sybase) has not yet been scheduled, but is anticipated for 2020.

#### Tax-Related Litigation

We are subject to ongoing audits by domestic and foreign tax authorities. In respect of non-income taxes, we are involved in various proceedings with only a few foreign 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 €189 million (2018: €95 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  $Note\ (C.5)$ .

#### Anti-Bribery and Export Control Matters

SAP has received communications and whistleblower information alleging conduct that may violate anti-bribery laws in the United States (including the U.S. Foreign Corrupt Practices Act (FCPA)), and other countries. The Office of Ethics and Compliance (OEC), formerly the Legal Compliance and Integrity Office, of SAP is

conducting investigations with the assistance of an external law firm and voluntarily advised the U.S. Securities and Exchange Commission (U.S. SEC) and the U.S. Department of Justice (U.S. DOJ), as well as local authorities where potential violations are being investigated. The investigations and dialogue between SAP and the local authorities and the U.S. SEC and U.S. DOJ are ongoing.

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. The comprehensive and exhaustive investigations and the corresponding remediation activities are still ongoing. Considering the complexity of individual factors and the large number of open questions, it is impossible at this point in time to assess the risk of a financial impact.

Furthermore, we continue to investigate separate allegations regarding conduct that certain 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 from SAP to certain customers, who may have engaged in unauthorized activities in embargoed countries. The investigations are being conducted by SAP's OEC and SAP's Export Control team, with the assistance of an external law firm and forensic advisors.

In this context, SAP voluntarily self-disclosed potential export controls and economic sanctions violations to the U.S. DOJ 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. 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 U.S. SEC. The alleged conduct may result in monetary penalties or other sanctions under U.S. sanctions and export control laws.

The comprehensive and exhaustive investigations and the corresponding remediation activities are ongoing, 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 2019. It is also not practicable to estimate the financial effect of any contingent liabilities that may result from these potential violations.

## (G.4) Board of Directors

#### **Executive Board**

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP, on December 31, 2019

#### Christian Klein

Co-Chief Executive Officer Intelligent Enterprise Group Global Business Operations, IT Services

#### Jennifer Morgan

Co-Chief Executive Officer Cloud Business Group Intelligent Spend Group, Qualtrics, CX Product Engineering and Product Management

Board of Directors, Bank of New York Mellon, New York, NY, United States

#### Adaire Fox-Martin

Global Customer Operations Global Sales, Regional Field Organizations, Line of Business Solutions Sales

Board of Directors, Equinix, Inc., Redwood City, CA, United States (from January 1, 2020)

#### Michael Kleinemeier

SAP Digital Business Services Global Services Delivery, Regional Field Services

Supervisory Board, innogy SE, Essen, Germany (until October 4, 2019)

Board of Partners, E. Merck KG, Darmstadt, Germany (from January 27, 2019)

Supervisory Board, Merck KGaA, Darmstadt, Germany (from April 26, 2019)

#### Luka Mucic

Chief Financial Officer

Global Finance and Administration including Investor Relations, Internal Audit, and Data Protection & Privacy

Supervisory Board, HeidelbergCement AG (from May 9, 2019)

#### Jürgen Müller (from January 1, 2019)

Chief Technology Officer
Technology & Innovation
Technology and Innovation Strategy, SAP HANA,
SAP Cloud Platform, SAP Leonardo, SAP Analytics

#### 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

#### Thomas Saueressig (from November 1, 2019)

SAP Product Engineering

Global Responsibility for all SAP Applications, Product Development and Delivery as well as Product Management for SAP S/4HANA, Supply Chain, SME, and Industry Solutions

#### **Executive Board Members Who Left During 2019**

Robert Enslin (until April 5, 2019) Bernd Leukert (until March 31, 2019) Bill McDermott (until November 15, 2019)

### Supervisory Board

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP, on December 31, 2019

#### Prof. Dr. h.c. mult. Hasso Plattner 2), 4), 6)

Chairman

#### Margret Klein-Magar 1), 2), 3)

**Deputy Chairperson** 

Vice President, Head of SAP Alumni Relations Chairperson of the Spokespersons' Committee of Senior Managers

of SAP SE

#### Pekka Ala-Pietilä 2), 6), 7)

Chairman of the Board of Directors, Huhtamäki Oyj, Espoo, Finland

Chairman of the Board of Directors, Sanoma Corporation, Helsinki, Finland

Chairman of the Board of Directors, Netcompany A/S, Copenhagen, Denmark (until August 20, 2019)

#### Panagiotis Bissiritsas 1), 2), 3), 5)

Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)

#### Aicha Evans 2), 4), 7)

Chief Executive Officer and Member of the Board of Directors, Zoox, Inc., Foster City, CA, United States

#### Diane Greene 4), 6)

Board of Directors, Stripe Inc., San Francisco, CA, United States Board of Directors, Alphabet, Inc., Mountain View, CA, United States (until June 19, 2019)

#### Prof. Dr. Gesche Joost 4),7)

Professor for Design Research and Head of the Design Research Lab, University of Arts Berlin

Supervisory Board, Ottobock SE & Co. KGaA, Duderstadt, Germany Supervisory Board, ING-DiBa AG, Frankfurt, Germany

#### Monika Kovachka-Dimitrova (from May 15, 2019) 1), 4), 7)

Chief Project Expert Development Member of SAP SE Works Council (Europe)

#### Lars Lamadé 1), 2), 4)

Head of Sponsorships Europe and Asia

Supervisory Board, Rhein-Neckar Loewen GmbH, Kronau, Germany

#### Bernard Liautaud 2), 4), 6)

Managing Partner Balderton Capital, London, United Kingdom

Board of Directors, nlyte Software Ltd., London, United Kingdom 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 (until July 3, 2019)

Board of Directors, eWise Group, Inc., Redwood City, CA, United States

Board of Directors, Qubit Digital Ltd., London, United Kingdom

Board of Directors, Aircall.io, New York City, NY, United States

Board of Directors, Virtuo Technologies, Paris, France

Board of Directors, The Hut Group, Manchester, United Kingdom

Board of Directors, Peakon Aps, Copenhagen, Denmark

Board of Directors, Tim Talent SAS, Paris, France

Board of Directors, Citymapper Ltd., London, United Kingdom

Board of Directors, Toucan Toco SAS, Paris, France (from

November 14, 2019)

Board of Directors, Containous SAS, Lyon, France (from December 16, 2019)

#### Gerhard Oswald (from January 1, 2019) 3), 4), 5), 7)

Managing Director of Oswald Consulting GmbH, Walldorf, Germany

Advisory Board, TSG 1899 Hoffenheim Fußball-Spielbetriebs GmbH, Sinsheim, Germany

#### Christine Regitz 1), 2), 4), 5)

Vice President User Experience Chief Product Expert

#### Dr. Friederike Rotsch 2), 3), 5)

Group General Counsel and Head of Group Legal & Compliance, Merck KGaA, Darmstadt, Germany

#### Heike Steck (from May 15, 2019) 1), 4), 7)

Senior Operations Manager

Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)

#### Christa Vergien-Knopf (from May 15, 2019) 1), 4,7)

Member of SAP SE Works Council and Member of SAP SE Works Council (Europe)

#### Dr. Gunnar Wiedenfels (from May 15, 2019) 3), 5)

Chief Financial Officer, Discovery Communications, Inc., New York, NY, United States

Board of Directors, Motor Trend Group, LLC, El Segundo, CA, United States

Board of Directors, OWN LLC, West Hollywood, CA, United States Board of Directors, Scripps Networks Interactive (Asia) Pte. Ltd., Singapore (until April 1, 2019)

#### James Wright (from May 15, 2019) 1), 3), 4), 5)

Chairman of SAP SE Works Council (Europe)

#### Ralf Zeiger (from May 15, 2019) 1), 2), 7)

Chairman of SAP SE Works Council and Member of SAP SE Works Council (Europe)

#### **Supervisory Board Members Who Left During 2019**

Martin Duffek (until May 15, 2019)

Andreas Hahn (until May 15, 2019)

Dr. Erhard Schipporeit (until May 15, 2019)

Robert Schuschnig-Fowler (until May 15, 2019)

Dr. Sebastian Sick (until May 15, 2019)

Pierre Thiollet (until May 15, 2019)

 $<sup>^{\</sup>rm 1)}{\rm Appointed}$  by the SAP SE Works Council (Europe)

<sup>&</sup>lt;sup>2)</sup> Member of the Company's General and Compensation Committee

<sup>3)</sup> Member of the Company's Audit Committee

<sup>&</sup>lt;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>&</sup>lt;sup>6)</sup> Member of the Company's Nomination Committee

<sup>7)</sup> Member of the Company's People and Organization Committee

# (G.5) Executive and Supervisory Board Compensation

#### Accounting Policy

The share-based payment amounts disclosed below in the table "Executive Board Compensation" 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 reporting period under the LTI 2016 Plan.

In the table "Share-Based Payment for Executive Board Members," the share-based payment expense is the amount recorded in profit or loss under IFRS 2 (Share-Based Payment) in the respective period.

The total compensation of the Executive Board members for each of the years 2019, 2018, and 2017 was as follows:

#### **Executive Board Compensation**

€ thousands	2019	2018	2017
Short-term employee benefits	17,378	18,652	16,634
Share-based payment <sup>1)</sup>	32,393	23,646	25,723
Subtotal <sup>1)</sup>	49,771	42,298	42,357
Post-employment benefits	2,825	1,106	1,312
Thereof defined-benefit	2,056	250	423
Thereof defined-contribution	769	856	889
Total <sup>1)</sup>	52,596	43,404	43,669

<sup>&</sup>lt;sup>1)</sup> Portion of total executive compensation allocated to the respective year

## **Share-Based Payment for Executive Board Members**

	2019	2018	2017
Number of RSUs granted	137,619	118,072	117,929
Number of PSUs granted	206,428	177,106	176,886
Total expense in € thousands	44,447	8,054	19,068

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 62 based on entitlements from performance-based and salary-linked plans were as follows:

## Retirement Pension Plan for Executive Board Members

€ thousands	2019	2018	2017
DBO 12/31	5,497	3,441	3,191
Annual pension entitlement	215	192	148

The total annual compensation of the Supervisory Board members is as follows:

#### **Supervisory Board Compensation**

€ thousands	2019	2018	2017
Total compensation	3,770	3,702	3,663
Thereof fixed compensation	3,218	3,162	3,135
Thereof committee remuneration	553	540	528

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	2019	2018	2017
Payments	2,081	2,054	1,997
DBO 12/31	44,586	38,374	39,993

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 2019, 2018, or 2017.

## (G.6) Related Party Transactions Other Than Board Compensation

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 the Supervisory Board of SAP SE 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, and purchasing a house from SAP.

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 total, we sold products and services to companies controlled by members of the Supervisory Board in the amount of  $\[ \in \] 9$  million (2018:  $\[ \in \] 37$  million), we bought products and services from such companies in the amount of  $\[ \in \] 2$  million (2018:  $\[ \in \] 3$  million), and we provided sponsoring and other financial support to such companies in the amount of  $\[ \in \] 4$  million). Outstanding balances at year end from transactions with such companies were  $\[ \in \] 0$  million (2018:  $\[ \in \] 3$  million) for amounts owed to such companies and  $\[ \in \] 0$  million (2018:  $\[ \in \] 2$ 8 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 four years) made by us to purchase further goods or services from these companies and to provide further sponsoring and other financial support amount to €14 million as at December 31, 2019 (2018: €191 million).

For information about the compensation of our Executive Board and Supervisory Board members, see *Note (G.5)*.

# (G.7) Principal Accountant Fees and Services

At the Annual General Meeting of Shareholders held on May 15, 2019, our shareholders elected KPMG AG Wirtschaftsprüfungsgesellschaft (KPMG) as SAP's independent auditor for 2019. KPMG has been the Company's principal auditor since the fiscal year 2002. KPMG and other firms in the global KPMG network charged the following fees to SAP for audit and other professional services related to 2019 and the previous years:

€ millions			2019			2018			2017
	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	7	10
Audit-related fees	0	1	1	0	0	0	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
Total	3	8	10	3	6	9	3	7	10

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 as well as fees charged by KPMG for service organization attestation procedures.

## (G.8) Events After the Reporting Period

At the beginning of 2020, SAP modified its organizational structure to strengthen the focus on customer success and employee engagement while driving innovation and simplicity. The set-up moving forward aims at raising synergies, reducing complexity while initiating key steps towards further integration. The organizational changes will also affect SAP's segment reporting. SAP has already started the process of redefining its management reporting under the new organizational structure, which the segment reporting will follow.

Other than that, no events have occurred since December 31, 2019, that have a material impact on the Company's Consolidated Financial Statements.

## (G.9) Scope of Consolidation, Subsidiaries and Other Equity Investments

#### **Entities Consolidated in the Financial Statements**

	Total
12/31/2017	227
Additions	59
Disposals	-21
12/31/2018	265
Additions	20
Disposals	-21
12/31/2019	264

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.

## Subsidiaries

## **Major Subsidiaries**

Name and Location of Company	Owner -ship	Total Revenue in 2019 <sup>1)</sup>	Profit/Loss (–) After Tax for 2019 <sup>1)</sup>	Total Equity as at 12/31/2019 <sup>1)</sup>	Number of Employees as at 12/31/2019 <sup>2)</sup>	Foot- note
	%	€ thousands	€ thousands	€ thousands		
Ariba, Inc., Palo Alto, CA, United States	100.0	1,304,139	332,200	4,376,579	1,928	
Concur Technologies, Inc., Bellevue, WA, United States	100.0	1,804,158	258,770	7,680,075	3,788	
LLC SAP CIS, Moscow, Russia	100.0	482,524	-21,171	47,192	822	
Qualtrics, LLC, Wilmington, DE, United States	100.0	418,420	-535,867	6,124,414	2,112	4)
SAP (Schweiz) AG, Biel, Switzerland	100.0	924,676	99,481	145,085	769	
SAP (UK) Limited, Feltham, United Kingdom	100.0	1,246,454	41,886	10,166	1,762	10)
SAP America, Inc., Newtown Square, PA, United States	100.0	6,152,418	-781,584	19,587,457	8,162	
SAP Argentina S.A., Buenos Aires, Argentina	100.0	158,007	-34,937	16,846	918	16)
SAP Asia Pte Ltd, Singapore, Singapore	100.0	515,034	-32,511	-14,925	1,178	16)
SAP Australia Pty Ltd, Sydney, Australia	100.0	738,223	-11,496	28,411	1,274	
SAP Brasil Ltda, São Paulo, Brazil	100.0	556,269	-35,373	-216	2,029	
SAP Canada Inc., Toronto, Canada	100.0	965,891	38,905	507,722	2,946	
SAP China Co., Ltd., Shanghai, China	100.0	1,019,778	-4,633	-196,735	5,619	16)
SAP Deutschland SE & Co. KG, Walldorf, Germany	100.0	4,538,364	750,926	1,614,340	4,763	7), 9)
SAP España – Sistemas, Aplicaciones y Productos en la Informática, S.A., Madrid, Spain	100.0	542,651	34,834	271,147	724	
SAP France, Levallois Perret, France	100.0	1,151,489	124,438	1,588,563	1,503	
SAP Hungary Rendszerek, Alkalmazások és Termékek az Adatfeldolgozásban Informatikai Kft., Budapest, Hungary	100.0	124,890	-572	19,270	952	
SAP India Private Limited, Bangalore, India	100.0	637,052	71,940	382,053	2,045	
SAP Industries, Inc., Newtown Square, PA, United States	100.0	679,636	174,268	879,257	323	
SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., Vimercate, Italy	100.0	582,698	29,934	336,995	720	
SAP Japan Co., Ltd., Tokyo, Japan	100.0	1,167,363	108,649	290,021	1,291	
SAP Labs India Private Limited, Bangalore, India	100.0	577,030	43,225	173,224	8,466	
SAP Labs, LLC, Palo Alto, CA, United States	100.0	649,577	-61,161	426,810	1,803	
SAP México S.A. de C.V., Mexico City, Mexico	100.0	427,159	19,211	37,109	886	
SAP National Security Services, Inc., Newtown Square, PA, United States	100.0	699,688	169,664	496,277	475	
SAP Nederland B.V., 's-Hertogenbosch, the Netherlands	100.0	670,660	356,717	195,122	589	11)
SAP Service and Support Centre (Ireland) Limited, Dublin, Ireland	100.0	201,427	16,186	81,315	1,615	
SuccessFactors, Inc., South San Francisco, CA, United States	100.0	881,532	510,682	4,182,900	941	

## Other Subsidiaries<sup>3)</sup>

Name and Location of Company	Owner- ship	Foot- note
	%	
"SAP Kazakhstan" LLP, Almaty, Kazakhstan	100.0	
110405, Inc., Newtown Square, PA, United States	100.0	
Abakus Ukraine Limited Liability Company, Kiev, Ukraine	100.0	
Ambin Properties Proprietary Limited, Johannesburg, South Africa	100.0	
Apex Expert Solutions LLC, Arlington, VA, United States	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)
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	
Callidus Software Inc., Dublin, CA, United States	100.0	
Callidus Software Ltd., London, United Kingdom	100.0	10)
Callidus Software Pty. Ltd., Sydney, Australia	100.0	
CallidusCloud (India) Pvt. Ltd., Hyderabad, India	100.0	
CallidusCloud (Malaysia) Sdn. Bhd., Kuala Lumpur, Malaysia	100.0	
CallidusCloud Holdings Pty. Ltd., Sydney, Australia	100.0	
CallidusCloud Pty. Ltd., Sydney, Australia	100.0	
Christie Partners Holding C.V., 's-Hertogenbosch, the Netherlands	100.0	
C-Learning Pty. Ltd., Sydney, Australia	100.0	
ClearTrip Inc. (Mauritius), Ebene, Mauritius	100.0	
ClearTrip Inc., George Town, Cayman Islands	57.0	
Cleartrip MEA FZ LLC, Dubai, United Arab Emirates	100.0	

Name and Location of Company	Owner- ship	Foot- note
	%	
Cleartrip Packages and Tours Private Limited, Mumbai, India	100.0	
ClearTrip Private Limited, Mumbai, India	100.0	
Cleartrip Travel & Holidays LLC, Dubai, United Arab Emirates	49.0	4), 5)
Clicktools Limited, Dorset, United Kingdom	100.0	10)
CNQR Operations Mexico S. de. R.L. de. C.V., San Pedro Garza Garcia, Mexico	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., Tokyo, Japan	73.6	
Concur (New Zealand) Limited, Wellington, New Zealand	100.0	14)
Concur (Philippines) Inc., Makati City, Philippines	100.0	
Concur (Switzerland) GmbH, Zurich, Switzerland	100.0	13)
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)
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	16)
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	12)
Crystal Decisions Holdings Limited, Dublin, Ireland	100.0	12)
Crystal Decisions UK Limited, London, United Kingdom	100.0	10)
Datahug Limited, Dublin, Ireland	100.0	
Delighted, LLC, Wilmington, DE, United States	100.0	4)
Dorset Acquisition Corp., Dublin, CA, United States	100.0	

Name and Location of Company	Owner- ship	Foot- note
	%	
Ebreez Egypt LLC, Cairo, Egypt	100.0	
EssCubed Procurement Pty. Ltd., Johannesburg, South Africa	100.0	
Extended Systems, Inc., San Ramon, CA, United States	100.0	
Fieldglass Europe Limited, London, United Kingdom	100.0	10)
Financial Fusion, Inc., San Ramon, CA, United States	100.0	
Flyin Holding Limited, Dubai, United Arab Emirates	100.0	
Flyin Travel and Tourism Private Limited, Hyderabad, India	100.0	
Flyin Travel Limited, Limassol, Cyprus	100.0	
Flyin Travel S.A.E, Cairo, Egypt	100.0	
FreeMarkets Ltda., São Paulo, Brazil	100.0	
Gigya UK Ltd, London, United Kingdom	100.0	10), 16)
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)
Inxight Federal Systems Group, Inc., Wilmington, DE, United States	100.0	
IP Asset Holdings, LLC, Provo, UT, United States	100.0	4)
LeadFormix, Inc., Dublin, CA, United States	100.0	
Learning Heroes Ltd., Cheshire, United Kingdom	100.0	10)
Learning Seat Borrowings Pty. Ltd., Sydney, Australia	100.0	
Learning Seat Group Pty. Ltd., Sydney, Australia	100.0	
Learning Seat Holdings Pty. Ltd., Sydney, Australia	100.0	
Learning Seat Pty. Ltd., Sydney, Australia	100.0	
LLC "SAP Labs", Moscow, Russia	100.0	
LLC "SAP Ukraine", Kiev, Ukraine	100.0	16)
Merlin Systems Oy, Espoo, Finland	100.0	
Nihon Ariba K.K., Tokyo, Japan	100.0	
Noteshark, LLC, Chantilly, VA, United States	51.0	
OrientDB Limited, London, United Kingdom	100.0	10)
Outerjoin, Inc., Dublin, CA, United States	100.0	
OutlookSoft Deutschland GmbH, Walldorf, Germany	100.0	8), 9)
Plat. One Inc., Palo Alto, CA, United States	100.0	
Plat. One Lab Srl, Bogliasco, Italy	100.0	

Name and Location of Company	Owner- ship	Foot- note
	%	
PT SAP Indonesia, Jakarta, Indonesia	99.0	
Q (AGF2) Inc., Wilmington, DE, United States	100.0	4)
QAL Technologies Pty Ltd, Sydney, Australia	100.0	4)
QCL Techonologies Ltd., Toronto, Canada	100.0	4)
QDL Technologies GmbH, Munich, Germany	100.0	4)
QFL Technologies Sarl, Paris, France	100.0	4)
QIL Technologies Limited, Dublin, Ireland	100.0	4)
QPL Technologies sp. z o.o., Kraków, Poland	100.0	4)
QSL Technologies Pte. Ltd., Singapore, Singapore	100.0	4)
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	
Quadrem International Ltd., Hamilton, Bermuda	100.0	••••••
Quadrem Netherlands B.V., Amsterdam, the Netherlands	100.0	11)
Quadrem Overseas Cooperatief U.A., Amsterdam, the Netherlands	100.0	11)
Quadrem Peru S.A.C., Lima, Peru	100.0	
Qualtrics International Inc., Wilmington, DE, United States	100.0	4)
Qualtrics Japan LLC, Tokyo, Japan	100.0	4)
Qualtrics Sweden AB, Stockholm, Sweden	100.0	4)
Qualtrics Technologies Spain, S.L.U., Madrid, Spain	100.0	4)
QUL Technologies Limited, London, United Kingdom	100.0	4), 10)
SAP (Beijing) Software System Co., Ltd., Beijing, China	100.0	
SAP Andina y del Caribe C.A., Caracas, Venezuela	100.0	16)
SAP AZ LLC, Baku, Azerbaijan	100.0	
SAP Belgium – Systems, Applications and Products SA, Brussels, Belgium	100.0	
SAP Beteiligungs GmbH, Walldorf, Germany	100.0	
SAP Bulgaria EOOD, Sofia, Bulgaria	100.0	
SAP Business Services Center Nederland B.V., 's- Hertogenbosch, the Netherlands	100.0	11)
SAP Chile Limitada, Santiago, Chile	100.0	16)
SAP China Holding Co., Ltd., Beijing, China	100.0	
SAP Colombia S.A.S., Bogotá, Colombia	100.0	16)
SAP Commercial Services Ltd., Valletta, Malta	100.0	
SAP Costa Rica, S.A., San José, Costa Rica	100.0	16)

Name and Location of Company	Owner- ship	Foot- note
	%	
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	16)
SAP Egypt LLC, Cairo, Egypt	100.0	16)
SAP EMEA Inside Sales S.L., Madrid, Spain	100.0	
SAP Erste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	8), 9)
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 Hong Kong Co., Ltd., Hong Kong, China	100.0	16)
SAP Hosting Beteiligungs GmbH, St. Leon-Rot, Germany	100.0	8), 9)
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	12)
SAP Ireland US - Financial Services Designated Activity Company, Dublin, Ireland	100.0	
SAP Israel Ltd., Ra'anana, Israel	100.0	16)
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 Maita Investments Ltd., Valletta, Maita         100.0           SAP MENA FZ LL.C., Dubai, United Arab Emirates         100.0           SAP Middle East and North Africa LL.C., Dubai, United Arab Emirates         49.0         5),16)           SAP Nederland Holding B.V., 's-Hertogenbosch, the Netherlands         100.0         11)           SAP Nederland Holding B.V., 's-Hertogenbosch, the Netherlands         100.0         100.0           SAP Norge AS, Lysaker, Norway         100.0         16)           SAP Norge AS, Lysaker, Norway         100.0         16)           SAP Osterreich GmbH, Vienna, Austria         100.0         16)           SAP Osterreich GmbH, Vienna, Austria         100.0         16)           SAP Portials Europe GmbH, Vienna, Austria         100.0         16)           SAP Portials Space, Inc., Makati, Philippines         100.0         16)           SAP Portials Europe GmbH, Walldorf, Ger many         100.0         100.0           SAP Portials Europe GmbH, Walldorf, Ger many         100.0         100.0           SAP Portials Israel Ltd., Ra'anana, Israel         100.0         100.0           SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal         100.0         100.0           SAP Public Services, Inc., Washington, DC, United States         100.0         100.0 </th <th>Name and Location of Company</th> <th>Owner- ship</th> <th>Foot- note</th>	Name and Location of Company	Owner- ship	Foot- note
SAP MENA FZ L.L.C., Dubai, United Arab Emirates  SAP Middle East and North Africa L.L.C., Dubai, United Arab Emirates  SAP Middle East and North Africa L.L.C., Dubai, United Arab Emirates  SAP Nederland Holding B.V., 's-Hertogenbosch, the Netherlands  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 Osterreich GmbH, Vienna, Austria  100.0  SAP Perú S.A.C., Lima, Peru  100.0  SAP Philippines, Inc., Makati, Philippines  100.0  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda, Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  100.0  SAP Pouerto Rico GmbH, Walldorf, Germany  100.0  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Buchar est. Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd. Riyadh, Kingdom of Saudi Arabia Software Trading Ltd. Riyadh, Kingdom, SaP Senste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Sistemi, aplikacije in produkti za obdelavo podatkov do. o. Ljubljana, Slovenia  SAP Software and Services LLC, Doha, Qatar  49,0  5,16)  SAP System Application and Products Asia Myanmar  500.0  SAP System Application and Products Asia Myanmar		%	
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         5).16)           SAP Nederland Holding B.V., 'S-Hertogenbosch, the Netherlands         100.0         II)           SAP New Zealand Limited, Auckland, New Zealand         100.0         III)           SAP Norge AS, Lysaker, Norway         100.0         III           SAP North West Africa Ltd, Casablanca, Morocco         100.0         III           SAP Posterreich GmbH, Vienna, Austria         100.0         III           SAP Perú S.A.C., Lima, Peru         100.0         III           SAP Poliska Sp. z.o.o., Warsaw, Poland         100.0         III           SAP Portals Europe GmbH, Walldorf, Germany         100.0         III           SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany         100.0         III           SAP Portals Israel Ltd., Ra'anana, Israel         100.0         III           SAP Portugal – Sistemas, Aplicações e Produtos Informâticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal         100.0         III           SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany         100.0         III           SAP Poullic Services, Inc., Washington, DC, United States         100.0         III           SAP Paudi Arabia Software Services Ltd, Riyadh, Kingdom </td <td></td> <td></td> <td></td>			
SAP Middle East and North Africa L.L.C., Dubai, United Arab Emirates  SAP Nederland Holding B.V., 's-Hertogenbosch, the Netherlands  SAP New Zealand Limited, Auckland, New Zealand  SAP Norge AS, Lysaker, Norway  100.0  SAP Norge AS, Lysaker, Norway  SAP North West Africa Ltd, Casablanca, Morocco  SAP Osterreich GmbH, Vienna, Austria  100.0  SAP Perú S.A.C., Lima, Peru  100.0  SAP Pelilippines, Inc., Makati, Philippines  100.0  SAP Poliska Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Poiblic Services, Inc., Washington, DC, United States  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  SAP Saudi Arabia Software Services Ltd. Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Senvices s.r.o., Prague, Czech Republic  SAP Services S.r.o., Prague, Czech Republic  SAP Sistemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Svenska Aktiebolag, Stockholm, Sweden  100.0  SAP Svenska Aktiebolag, Stockholm, Sweden  100.0  SAP Svenska Aktiebolag, Stockholm, Sweden  100.0  SAP System Application and Products Asia Myanmar  100.0	SAP MENA FZ L.L.C., Dubai, United Arab Emirates	100.0	
Netherlands         100.0         53           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 Osterreich GmbH, Vienna, Austria         100.0           SAP Perû S.A.C., Lima, Peru         100.0           SAP Philippines, Inc., Makati, Philippines         100.0           SAP Poliska 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, Inc., Washington, DC, United States         100.0           SAP Puerto Rico GmbH, Walldorf, Germany         100.0           SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany         100.0           SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia         100.0           SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia         75.0           SAP Sechste Beteiligungs- und Ver	SAP Middle East and North Africa L.L.C., Dubai, United		5), 16)
SAP Norge AS, Lysaker, Norway  SAP North West Africa Ltd, Casablanca, Morocco  SAP Osterreich GmbH, Vienna, Austria  100.0  SAP Perú S.A.C., Lima, Peru  SAP Philippines, Inc., Makati, Philippines  100.0  SAP Polska Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Pojektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany		100.0	11)
SAP Norge AS, Lysaker, Norway  SAP North West Africa Ltd, Casablanca, Morocco  100.0  SAP Osterreich GmbH, Vienna, Austria  100.0  SAP Perú S.A.C., Lima, Peru  100.0  SAP Politippines, Inc., Makati, Philippines  100.0  SAP Polska Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  100.0  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermogensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermogensverwaltungs GmbH, Walldorf, Germany		100.0	
SAP North West Africa Ltd, Casablanca, Morocco  SAP Osterreich GmbH, Vienna, Austria  100.0  SAP Perú S.A.C., Lima, Peru  100.0  SAP Polika Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portals Israel Ltd., Ra'anana, Israel  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Poplektverwaltungs- und Beteiligungs GmbH,  Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH,  Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP System Application and Products Asia Myanmar  100.0	SAP Norge AS, Lysaker, Norway		
SAP Osterreich GmbH, Vienna, Austria  SAP Perú S.A.C., Lima, Peru  SAP Philippines, Inc., Makati, Philippines  100.0  SAP Polska Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  100.0  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Walldorf, Germany  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP North West Africa Ltd, Casablanca, Morocco		16)
SAP Perú S.A.C., Lima, Peru 100.0 16)  SAP Philippines, Inc., Makati, Philippines 100.0 16)  SAP Polska Sp. z o.o., Warsaw, Poland 100.0 SAP Portals Europe GmbH, Walldorf, Germany 100.0 SAP Portals Europe GmbH, Walldorf, Germany 100.0 SAP Portals Israel Ltd., Ra'anana, Israel 100.0 SAP Portals Israel Ltd., Ra'anana, Israel 100.0 SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany 100.0 SAP Public Services, Inc., Washington, DC, United States 100.0 SAP Puerto Rico GmbH, Walldorf, Germany 100.0 SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany 100.0 SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia SaP Services s.r.o., Prague, Czech Republic 100.0 SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 SAP Software and Services LLC, Doha, Qatar 49.0 5).16)	SAP Österreich GmbH, Vienna, Austria		
SAP Philippines, Inc., Makati, Philippines  SAP Polska Sp. z o.o., Warsaw, Poland  SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP Perú S.A.C., Lima, Peru		· ·
SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  100.0  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP Philippines, Inc., Makati, Philippines	100.0	
SAP Portals Europe GmbH, Walldorf, Germany  SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd., Ra'anana, Israel  100.0  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  100.0  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Ger	SAP Polska Sp. z o.o., Warsaw, Poland		
SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany  SAP Portals Israel Ltd Ra'anana, Israel  SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP Portals Europe GmbH, Walldorf, Germany		
SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH. Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  100.0  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP Portals Holding Beteiligungs GmbH, Walldorf,	100.0	
SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal  SAP Projektverwaltungs- und Beteiligungs GmbH. Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  100.0  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany		100.0	
Walldorf, Germany  SAP Public Services, Inc., Washington, DC, United States  100.0  SAP Puerto Rico GmbH, Walldorf, Germany  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	SAP Portugal – Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo,	100.0	
SAP Puerto Rico GmbH, Walldorf, Germany 100.0 8). 9). 16)  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany 100.0  SAP Romania SRL, Bucharest, Romania 100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia 100.0  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 8). 9)  SAP Services s.r.o., Prague, Czech Republic 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 8). 9)  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 8). 9)  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0 80. 9)  SAP Siebte Beteiligungs- und Vermögensverwaltungs 100.0 80. 9)  SAP Siebte Beteiligungs- und Vermögensverwaltungs 100.0 100. 0		100.0	
SAP Puerto Rico GmbH, Walldorf, Germany 100.0 8). 9). 16)  SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany 100.0  SAP Romania SRL, Bucharest, Romania 100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia 100.0  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany 100.0  SAP Siebte Beteiligungs- und Vermögensverwaltungs 100.0			
SAP Retail Solutions Beteiligungsgesellschaft mbH, Walldorf, Germany  SAP Romania SRL, Bucharest, Romania  100.0  SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siebte Beteiligungs- und Vermögensverwaltungs 100.0	SAP Puerto Rico GmbH, Walldorf, Germany		
SAP Saudi Arabia Software Services Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs 100.0  SAP Software and Services LLC, Doha, Qatar 49.0  SAP Svenska Aktiebolag, Stockholm, Sweden 100.0  SAP System Application and Products Asia Myanmar 100.0	SAP Retail Solutions Beteiligungsgesellschaft mbH,	100.0	
Kingdom of Saudi Arabia  SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siestemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Slovensko s.r.o., Bratislava, Slovakia  100.0  SAP Software and Services LLC, Doha, Qatar  49.0  SAP Svenska Aktiebolag, Stockholm, Sweden  100.0  SAP System Application and Products Asia Myanmar	SAP Romania SRL, Bucharest, Romania	100.0	
of Saudi Arabia  SAP Sechste Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP Siestemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Slovensko s.r.o., Bratislava, Slovakia  SAP Software and Services LLC, Doha, Qatar  SAP Svenska Aktiebolag, Stockholm, Sweden  SAP System Application and Products Asia Myanmar		100.0	
GmbH, Walldorf, Germany  SAP Services s.r.o., Prague, Czech Republic  SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP sistemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Slovensko s.r.o., Bratislava, Slovakia  SAP Software and Services LLC, Doha, Qatar  SAP Svenska Aktiebolag, Stockholm, Sweden  SAP System Application and Products Asia Myanmar		75.0	
SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH. Walldorf, Germany  SAP sistemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Slovensko s.r.o., Bratislava, Slovakia  100.0  SAP Software and Services LLC, Doha, Qatar  49.0  SAP Svenska Aktiebolag, Stockholm, Sweden  SAP System Application and Products Asia Myanmar	GmbH, Walldorf, Germany		8), 9)
SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany  SAP sistemi, aplikacije in produkti za obdelavo podatkov d.o.o., Ljubljana, Slovenia  SAP Slovensko s.r.o., Bratislava, Slovakia  SAP Software and Services LLC, Doha, Qatar  SAP Svenska Aktiebolag, Stockholm, Sweden  SAP System Application and Products Asia Myanmar	SAP Services s.r.o., Prague, Czech Republic	100.0	
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 5), 16)  SAP Svenska Aktiebolag, Stockholm, Sweden 100.0  SAP System Application and Products Asia Myanmar 100.0	SAP Siebte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	8), 9)
SAP Software and Services LLC, Doha, Qatar 49.0 5), 16)  SAP Svenska Aktiebolag, Stockholm, Sweden 100.0  SAP System Application and Products Asia Myanmar 100.0	SAP sistemi, aplikacije in produkti za obdelavo podatkov		
SAP Software and Services LLC, Doha, Qatar 49.0 5). 16)  SAP Svenska Aktiebolag, Stockholm, Sweden 100.0  SAP System Application and Products Asia Myanmar 100.0			
SAP Syenska Aktiebolag, Stockholm, Sweden 100.0  SAP System Application and Products Asia Myanmar 100.0	SAP Software and Services LLC, Doha, Qatar	49.0	5), 16)
SAP System Application and Products Asia Myanmar	SAP Svenska Aktiebolag, Stockholm, Sweden	100.0	
	SAP System Application and Products Asia Myanmar		

Name and Location of Company	Owner- ship	Foot- note
	%	
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 Yazilim Üretim ve Ticaret A.Ş., Istanbul, Turkey	100.0	
SAP UAB, Vilnius, Lithuania	100.0	
SAP Ventures Investment GmbH, Walldorf, Germany	100.0	8), 9)
SAP Vierte Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	
SAP Vietnam Company Limited, Ho Chi Minh City, Vietnam	100.0	
SAP West Balkans d.o.o., Belgrade, Serbia	100.0	
SAP Zweite Beteiligungs- und Vermögensverwaltungs GmbH, Walldorf, Germany	100.0	8), 9)
SAP.io Fund, L.P., San Francisco, CA, United States	0	6)
Sapphire Fund Investments II Holdings, LLC, Palo Alto, CA, United States	100.0	6)
Sapphire Fund Investments II, L.P., Palo Alto, CA, United States	0	6)
Sapphire Fund Investments III, L.P., Palo Alto, CA, United States	0	6)
Sapphire SAP HANA Fund of Funds, L.P., Palo Alto, CA, United States	0	6)
Sapphire Ventures Fund I, L.P., Palo Alto, CA, United States	0	6)
Sapphire Ventures Fund II, L.P., Palo Alto, CA, United States	0	6)
Sapphire Ventures Fund III, L.P., Palo Alto, CA, United States	0	6)
Sapphire Ventures Fund IV, L.P., Palo Alto, CA, United States	0	6)
SAPV (Mauritius), Ebene, Mauritius	100.0	6)
Saudi Ebreez Company for Electronic Services LLC, Riyadh, Kingdom of Saudi Arabia	100.0	
Statwing, LLC, Wilmington, DE, United States	100.0	4)
SuccessFactors (Philippines), Inc., Pasig City, Philippines	100.0	16)
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	15), 16)
Sybase Iberia S.L., Madrid, Spain	100.0	

Name and Location of Company	Owner- ship	Foot- note
	%	
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	
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	16)
Systems Applications Products Nigeria Limited, Victoria Island, Nigeria	100.0	16)
Technology Management Associates Inc., Herndon, VA, United States	100.0	
Temkin Group, LLC, Wilmington, DE, United States	100.0	4)
TM Property Holdings, LLC, Wilmington, DE, United States	100.0	4)
TomorrowNow, Inc., Bryan, TX, United States	100.0	
TRX Europe Limited, London, United Kingdom	100.0	10)
TRX Technologies India Private Limited, Raman Nagar, India	100.0	
TRX UK Limited, London, United Kingdom	100.0	10)
TRX, Inc., Bellevue, WA, United States	100.0	
Volume Integration, Inc., VA, United States	100.0	
Webcom, Inc., Dublin, CA, United States	100.0	

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 periodend closing exchange rates, and on average exchange rates for revenue and net income/loss.

- $^{\rm 2)}~$  As at December 31, 2019, 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.
- 4) Consolidated for the first time in 2019.
- 5) Agreements with the other shareholders provide that SAP SE fully controls the entity.
- <sup>6)</sup> SAP SE has the following structured entities: SAP.io Fund, L.P., Sapphire Fund Investments II Holdings, LLC, Sapphire Fund Investments II, L.P., Sapphire SAP HANA Fund of Funds, L.P., Sapphire Ventures Fund II, L.P., Sapphire Ventures Fund III, L.P., Sapphire Ventures Fund IIV, L.P., SAPV (Mauritius). The results of operations of these entities are included in SAP's consolidated financial statements in accordance with IFRS 10 (Consolidated Financial Statements).
- $^{7)}\;\;$  Entity whose personally liable partner is SAP SE.
- 8) 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.
- 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, 2019, or in respect of its financial year ended September 30, 2019, respectively.
- 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, 2019, or in respect of its financial year ended September 30, 2019, respectively.

## Other Equity Investments

Name and Location of Company	Owner- ship
	%
Joint Arrangements and Investments in Associates	
China DataCom Corporation Limited, Guangzhou, China	28.30
Convercent, Inc., Denver, CO, United States	37.12
Procurement Negócios Eletrônicos S/A, Rio de Janeiro, Brazil	17.00
Visage Mobile, Inc., Milwaukee, WI, United States	4.50

Name and Location of Company

#### Equity Investments with Ownership of at Least 5%

83North IV, L.P., Hertzalia, Israel

Alation, Inc., Redwood City, CA, United States

Alchemist Accelerator Fund LLLC. 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 III, 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

AuthO, Inc., Bellevue, WA, United States

Blue Yard Capital I GmbH & Co. KG, Berlin, Germany

Brightfield Holdings, Inc., New York, NY, United States

BY Capital 2 GmbH & Co. KG, Berlin, Germany

Catchpoint Systems, Inc., New York, NY, United States

Char Software, Inc., Boston, MA, United States

Clari, Inc., Sunnyvale, CA, United States

Contentful GmbH, Berlin, Germany

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

 $\hbox{Culture Amp, Inc., San Francisco, CA, United States}\\$ 

- Pursuant to Irish Companies Act 2014, chapter 16 of Part 6, section 365, the entity is exempt from having its financial statements audited on the grounds that the entity is entitled to the benefits from a dormant entity exemption in respect of its financial year ended December 31, 2019.
- <sup>13)</sup> Pursuant to article 727a, paragraph 2 of the Swiss Code of Obligations, the entity is exempt from having its financial statements audited in respect of its financial year ended December 31, 2019, or in respect of its financial year ended September 30, 2019, respectively.
- Pursuant to section 211 (3) of the New Zealand Companies Act 1993 and section 45 (2) of the Financial Reporting Act 2013, the entity had approved exclusions and is not required to lodge audited financial statements in respect of its financial year ended September 30, 2019.
- Pursuant to Angola Tax Law and Presidential Decree no. 147/13 of October 1, 2013, the entity does not qualify as being a Large Taxpayer and therefore is exempt from having its financial statements audited in respect of its financial year ended December 31, 2019.

<sup>16)</sup> Entity with support letter issued by SAP SE.

Name and Location of Company

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

DataRobot, Inc., Boston, MA, United States

Dharma Platform, Inc., Washington DC, United States

Digital Hub Rhein-Neckar GmbH, Ludwigshafen, Germany

EIT ICT Labs Germany GmbH, Berlin, Germany

FeedZai S.A., Lisbon, Portugal

Felix Capital Fund III, L.P., London, United Kingdom

Follow Analytics, Inc., San Francisco, CA, United States

Greater Pacific Capital (Cayman) L.P., Grand Cayman, Cayman Islands

Havstack Ventures V. L.P., Mill Valley, CA, United States

IDG Ventures USA III, L.P., San Francisco, CA, United States

IEX Group, Inc., New York, NY, United States

InfluxData, Inc., San Francisco, CA, United States

InnovationLab GmbH, Heidelberg, Germany

innoWerft Technologie- und Gründerzentrum Walldorf Stiftung GmbH, Walldorf, Germany

JFrog, Ltd., Netanya, Israel

Kaltura, Inc., New York, NY, United States

Kavacha TopCo LLC, 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

Localglobe X Limited, Guernsey, Channel Islands

Mango Capital 2018, L.P., Los Altos, CA, United States

Matillion Ltd., Altrincham, United Kingdom

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

 $Notation\ Capital\ II,\ L.P.,\ Brooklyn,\ NY,\ United\ States$ 

Name and Location of Company
Notation Capital, L.P., Brooklyn, NY, United States
OpenX Software Limited, Pasadena, CA, United States
OpsRamp, Inc., San Jose, CA, United States
Outreach Corporation, Seattle, WA, United States
Pendo.io, Inc., Raleigh, NC, United States
Pheonix Labs Canada, ULC, Burnaby, BC, Canada
PivotNorth Early Fund I, L.P., Atherton, CA, United States
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
Project 44, Inc., Chicago, IL, United States
PubNub, Inc., San Francisco, CA, United States
Punchh, Inc., San Mateo, CA, United States
Realize Corporation, Tokyo, Japan
Reltio, Inc., Redwood Shores, CA, United States
Ridge Ventures IV, L.P., San Francisco, CA, United States
SASS Labs, Inc., Palo Alto, CA, United States
Scryer, Inc., New York, NY, United States
Side, Inc., San Francisco, CA, United States
Smart City Planning, Inc., Tokyo, Japan
SportsTech Fund, L.P., Palo Alto, CA, United States
SportsTech Parallel Fund, L.P., Palo Alto, CA, United States
Spring Mobile Solutions, Inc., Reston, VA, United States
Storm Ventures V, L.P., Menlo Park, CA, United States
SumoLogic, Inc., Redwood City, CA, United States
Sun Basket, Inc., San Francisco, CA, United States
SV Angel IV, L.P., San Francisco, CA, United States
T3C Inc., San Jose, CA, United States
The Currency Cloud Group Limited, London, United Kingdom
The SaaStr Fund, L.P., Palo Alto, CA, United States
Third Kind Venture Capital II, L.P., New York, NY, United States
UJET, Inc., San Francisco, CA, United States
Upfront V, L.P., Santa Monica, CA, United States
Wandera, Inc., San Francisco, CA, United States

## **Group Headquarters**

SAP SE Dietmar-Hopp-Allee 16 69190 Walldorf Germany

www.sap.com www.sap.com/investor

