SAP SE
Form 20-F
February 28, 2019
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20-F

o **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2018

OR

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

o **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 from_____to_____

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

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(Name, Telephone, Email and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
American Depositary Shares, each Representing one Ordinary Share, without nominal value	New York Stock Exchange
Ordinary Shares, without nominal value	New York Stock Exchange*

Securities registered or to be registered pursuant to Section 12(g) of the Act: None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None

Indicate the number of outstanding shares of each of the issuer s classes of capital or common stock as of the close of the period covered by the annual report:

Ordinary Shares, without nominal value: 1,228,504,232 (as of December 31, 2018)**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes þ No o

If 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 15(d) of the Securities Exchange Act of 1934.

Yes o No þ

Note Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange 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 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes þ No o

Indicate by check mark whether the registrant has submitted electronically and posted on its Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files.)

Yes þ No o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or an emerging growth company. See definition of accelerated filer, large accelerated filer, and emerging growth company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer þ Accelerated filer o Non-accelerated filer o Emerging growth company o

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

The term new or revised financial accounting standard refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP o International Financial Reporting Standards as issued by the International Accounting Standards Board þ Other o

If Other has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 o Item 18 o

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 o No þ

* 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.

** Including 34,854,354 treasury shares.

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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, 2018, which was US$1.1456 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 8, 2019, the Noon Buying Rate for converting euro to dollars was US$1.1326 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, ExpenseIt, PartnerEdge, PowerBuilder, PowerDesigner, Quadrem, R/3, Replication Server, SAP Ariba, SAP BusinessObjects Explorer, SAP Business Workflow, 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, TravelTrax, TripIt, 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 (www.sap.com) 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 (www.sec.gov). 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 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.

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.

Unethical behavior and non-compliance with our integrity standards due to intentional and fraudulent employee behavior could seriously harm our business, financial position, profit, and reputation.

A cybersecurity attack or breach, or undetected security 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, our partners, our financial position, our operations, our reputation, 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 guidance, intend, may, might, outlook, plan, predict, project, seek, should, strategy, want, will, would, and similar express 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 forward-looking information appearing in other parts of this report. To fully consider the

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factors that could affect our future financial results, both this report and our Annual Report on Form 20-F should be considered, as well as all of our other filings with the U.S. Securities and Exchange Commission (SEC). Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date specified or the date of this report. We undertake no obligation to publicly update or revise any forward-looking statements as a result of new information that we receive about conditions that existed upon issuance of this report, future events, or otherwise unless we are required to do so by law.

This report includes statistical data about the IT industry and global economic trends that comes from information published by sources including International Data Corporation (IDC), Gartner, the European Central Bank (ECB), and the International Monetary Fund (IMF). This type of data represents only the estimates of IDC, Gartner, ECB, IMF, and other sources of industry data. SAP does not adopt or endorse any of the statistical information provided by sources such as IDC, Gartner, ECB, IMF, or other similar sources that is contained in this report. The data from these sources is subject to risks and uncertainties, and subject to change based on various factors, including those described above, in the *Risk Factors* 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.

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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 2018, we used the following key measures to manage our operating financial performance:

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

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (IaaS)
- Premium cloud subscription support beyond regular support

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

We use the cloud subscriptions and support revenue (non-IFRS) measure at both actual currencies and constant currencies.

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

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

New cloud bookings: For our cloud activities, we also look at new cloud bookings (both in actual currencies and constant currencies). This measure reflects the committed order entry from new customers and from incremental purchases by existing customers for offerings that generate cloud subscriptions and support revenue. 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 subscriptions and support revenue. We focus primarily on the average

contract value variant of the new cloud bookings measure that generally takes into account annualized amounts for contracts. There are no comparable IFRS measures for these bookings metrics.

Cloud backlog: In addition to new cloud bookings, we use the measure cloud backlog to evaluate our sales success in the cloud business. We define cloud backlog as a measure that represents expected future cloud subscriptions and support 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 subscriptions and support gross margin (non-IFRS): We use our cloud subscriptions and support gross margin (non-IFRS) to measure our process efficiency in our cloud business. Cloud subscriptions and support gross margin (non-IFRS) is the ratio of our cloud subscriptions and support gross profit (non-IFRS) to cloud subscriptions and support revenue (non-IFRS), expressed as a percentage.

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

Measures 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

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with the other primary financial statements, it provides information that helps us evaluate the changes in our net assets, our financial structure (including our liquidity and solvency), and our ability to affect the amounts and timing of cash flows to adapt to changing circumstances and opportunities. We use our free cash flow measure to determine the cash flow remaining after all expenditures required to maintain or expand our organic business have been paid off. This measure provides management with supplemental information to assess our liquidity needs. We calculate free cash flow as net cash from operating activities minus purchases (other than purchases made in connection with business combinations) of intangible assets and property, plant, and equipment.

Measures to Manage Our Non-Financial Performance

In 2018, we used the following key measures to manage our non-financial performance in the areas of customer loyalty, employee engagement, and leadership trust:

Customer Net Promoter Score (Customer NPS): This score measures the willingness of our customers to recommend or promote SAP to others. It is derived from ongoing customer surveys that 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 methodology as we do to compute the Net Promoter Score (NPS).

Value-Based Management

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

SAP s long-term strategic plans are the point of reference for our short-term and midterm planning and controlling processes. We initially identify future growth and profitability drivers at a highly aggregated level. In a first step, the resulting financial plan is broken down into (i) our deployment models On Premise, Software as a Service/Platform as a Service, Infrastructure as a Service, and Business Networks ; and (ii) functions such as development, sales, and administration. In a second step, the planned total revenues and total expenses are generally allocated to the areas of functional responsibility of the individual members of the

Executive Board (the board areas). If a board area represents not only a functional department but also has a responsibility for operating segments within this board area (for example, SAP Business Network segment and Customer Experience 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.

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All forecast and performance reviews with all senior managers globally are based on these non-IFRS measures, rather than the respective IFRS financial measures.

Both our internal performance targets and the guidance we provide to the capital markets are based on non-IFRS revenue and profit measures rather than the respective IFRS financial measures.

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

Revenue (Non-IFRS)

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

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

Operating Expense (Non-IFRS)

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

Acquisition-related charges

§ Amortization expense/impairment charges 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

§ 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.

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Operating Profit (Non-IFRS), Cloud Subscriptions and Support Gross Margin (Non-IFRS), Operating Margin (Non-IFRS), Effective Tax Rate (Non-IFRS), and Earnings per Share (Non-IFRS)

Operating profit, cloud subscriptions and support gross margin, operating margin, effective tax rate, and earnings per share identified as operating profit (non-IFRS), cloud subscriptions and support 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.

Free Cash Flow

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

millions	**2018**	2017	Δ in %
Net cash flows from operating activities	4,303	5,045	15
Purchase of intangible assets and property, plant, and equipment (without acquisitions)	1,458	1,275	14
Free cash flow	**2,844**	**3,770**	**25**

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

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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.

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Reconciliations of IFRS to Non-IFRS Financial Measures for the Years 2018 and 2017

millions, unless otherwise stated	2018					2017		
	IFRS	**Adj.**	**Non-IFRS**	**Currency Impact**	**Non-IFRS Constant Currency**	IFRS	Adj.	Non-IFRS
Revenue measures								
Cloud subscriptions and support	4,993	33	5,027	179	5,205	3,769	2	3,771
Software licenses	4,647	0	4,647	231	4,877	4,872	0	4,872
Software support	10,981	0	10,982	513	11,494	10,908	0	10,908
Software licenses and support	15,628	0	15,629	743	16,372	15,780	0	15,780
Cloud and software	**20,622**	**33**	**20,655**	**922**	**21,577**	**19,549**	**3**	**19,552**
Services	**4,086**	**0**	**4,086**	**297**	**4,384**	**3,912**	**0**	**3,912**
Total revenue	**24,708**	**33**	**24,741**	**1,219**	**25,961**	**23,461**	**3**	**23,464**
Operating expense measures								
Cost of cloud subscriptions and support	2,068	213	1,855			1,660	233	1,427
Cost of software licenses and support	2,092	130	1,962			2,234	190	2,044
Cost of cloud and software	4,160	343	3,817			3,893	423	3,471
Cost of services	3,302	151	3,151			3,158	166	2,991
Total cost of revenue	**7,462**	**494**	**6,969**			**7,051**	**589**	**6,462**
Gross profit	**17,246**	**527**	**17,773**			**16,410**	**592**	**17,001**
Research and development	3,624	219	3,406			3,352	281	3,072
Sales and marketing	6,781	589	6,192			6,924	700	6,225
General and administration	1,098	106	992			1,075	138	936
Restructuring	19	19	0			182	182	0
Other operating income/expense, net	20	0	20			1	0	1
Total operating expenses	**19,005**	**1,426**	**17,579**	**902**	**18,481**	**18,584**	**1,889**	**16,694**
Profit numbers								
Operating profit	**5,703**	**1,459**	**7,163**	**317**	**7,480**	**4,877**	**1,892**	**6,769**
Other non-operating income/expense, net	**56**	**0**	**56**			**36**	**0**	**36**
Finance income	371	0	371			476	0	476
Finance costs	418	0	418			288	0	288
Financial income, net	**47**	**0**	**47**			**188**	**0**	**188**
Profit before tax	**5,600**	**1,459**	**7,059**			**5,029**	**1,892**	**6,921**
Income tax expense	1,511	349	1,860			983	592	1,575
Profit after tax	**4,088**	**1,111**	**5,199**			**4,046**	**1,300**	**5,346**
Attributable to owners of parent	4,083	1,111	5,193			4,008	1,300	5,307
Attributable to non-controlling interests	6	0	6			38	0	38

Key ratios								
Operating margin (in %)	**23.1**		**29.0**		**28.8**	**20.8**		**28.9**
Effective tax rate (in %)	**27.0**		**26.3**			**19.5**		**22.8**
Earnings per share, basic (in)	**3.42**		**4.35**			**3.35**		**4.43**

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

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Non-IFRS Adjustments by Functional Areas

millions	2018					2017				
	IFRS	**Acquisition-Related**	**SBP1)**	**Restructuring**	**Non-IFRS**	IFRS	Acquisition-Related	SBP1)	Restructuring	Non-IFRS
Cost of cloud and software	4,160	264	78	0	3,817	3,893	307	115	0	3,471
Cost of services	3,302	9	142	0	3,151	3,153	8	158	0	2,991
Research and development	3,624	9	210	0	3,406	3,352	11	269	0	3,072
Sales and marketing	6,781	277	312	0	6,192	6,924	258	442	0	6,225
General and administration	1,093	18	88	0	992	1,075	3	135	0	936
Restructuring	19	0	0	19	0	182	0	0	182	0
Other operating income/expense, net	20	0	0	0	20	1	0	0	0	1
Total operating expenses	**19,005**	**577**	**830**	**19**	**17,579**	**18,584**	**587**	**1,120**	**182**	**16,694**
1) Share-based payments										

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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, 2018. 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	2018	2017	2016	2015	2014
Income Statement Data: Years ended December 31,					
Cloud subscriptions and support revenue	4,993	3,769	2,993	2,286	1,087
Software licenses and support revenue	15,628	15,780	15,431	14,928	13,228
Cloud and software revenue	20,622	19,549	18,424	17,214	14,315
Total revenue	24,708	23,461	22,062	20,793	17,560
Operating profit	5,703	4,877	5,135	4,252	4,331
Profit after tax	4,088	4,046	3,629	3,056	3,280
Profit attributable to owners of parent	4,083	4,008	3,642	3,064	3,280
Earnings per share(1)					
Basic in	3.42	3.35	3.04	2.56	2.75
Diluted in	3.42	3.35	3.04	2.56	2.74
Other Data:					
Weighted-average number of shares outstanding					
Basic	1,194	1,197	1,198	1,197	1,195
Diluted	1,194	1,198	1,199	1,198	1,197
Statement of Financial Position Data: At December 31,					
Cash and cash equivalents	8,627	4,011	3,702	3,411	3,328
Total assets	51,491	42,484	44,262	41,390	38,565
Current financial liabilities(2)	1,125	1,561	1,813	841	2,561
Non-current financial liabilities(2)	10,553	5,034	6,481	8,681	8,980
Issued capital	1,229	1,229	1,229	1,229	1,229
Total equity	28,877	25,515	26,382	23,295	19,534

(1) Profit attributable to owners of parent is the numerator and weighted average number of shares outstanding is the denominator in the calculation of earnings per share. See Note (C.6) to our Consolidated Financial Statements for more information on earnings per share.
(2) The balances include primarily bonds, private placements and bank loans. Current is defined as having a remaining life of one year or less; non-current is defined as having a remaining term exceeding one year. The significant increase in 2014 was due to a long-term bank loan and the issuance of a three-tranche Eurobond, both in connection with the Concur acquisition. See Note (E.3) to our Consolidated Financial Statements for more information on our financial liabilities.

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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$**	
2014	1.10		1.22	(1)
2015	1.15		1.30	(1)
2016	1.25		1.37	(1)
2017	1.40		1.65	(1)
2018 (proposed)	1.50	(2)	1.70	(2), (3)

(1) 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.

(2) Subject to approval at the Annual General Meeting of Shareholders of SAP SE currently scheduled to be held on May 15, 2019.

(3) 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 8, 2019 of US$1.1326 per 1.00. The dividend paid may differ due to changes in the exchange rate.

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.

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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, Turkey, Venezuela, UK/ Brexit)
- Continued deterioration in global economic conditions (impact on accurate forecast) or budgetary constraints of national governments
- Tariff conflicts, as for example between the United States and China
- 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

Any of these events could limit our ability to reach our targets as they 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 in the Americas (Latin America and North America); Asia Pacific Japan (APJ); China, Hong Kong, Macau, and Taiwan (Greater China); Europe, Middle East, and Africa (EMEA); and Middle and Eastern Europe (MEE) regions. As a European company domiciled in Germany with securities listed in Germany and the United States, we are subject to European, German, U.S., and other governance-related regulatory requirements.

Our business in these countries is subject to numerous risks inherent to international business operations. Among others, these risks include:

Possible tax constraints impeding business operations in certain countries

Changes in accounting standards and tax laws including, but not limited to, conflict and overlap among tax regimes measures as well as the introduction of new tax concepts that harm digitized business models

Discriminatory, 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, and the lack of regulations at the time of the report to provide guidance on the interpretations thereon by the U.S. tax authorities, the Internal Revenue Services (IRS)

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), 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))

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.4).*

As we expand into new countries and markets and/or extend our business activities in these markets, including emerging and high-risk 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

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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 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.

As a global software and service provider, SAP is required to comply with local laws wherever SAP does business. With regard to data protection requirements, in May 2016, the EU enacted a General Data Protection Regulation (GDPR) with the aim of further harmonizing data protection laws across the EU. Since May 25, 2018, GDPR is applicable law in all EU and EEA member states. Within limits, member states can supplement the

GDPR with additional national rules. Some member states have already enacted such laws.

Furthermore, evolving regulations and new laws (such as the EU s proposed e-Privacy Regulation) globally 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, in particular the EU GDPR, by SAP and/or any of the subcontractors engaged by SAP within processing of personal data could lead, for example, to risks in the following areas:

- Mandatory disclosures of breaches to affected individuals, customers, and data protection supervisory authorities
- Investigations and administrative measures by data protection supervisory authorities, such as the instruction to alter or stop non-compliant data processing activities, including the instruction to stop using non-compliant subcontractors
- Fines of up to 4% of SAP s annual Group turnover
- Damage claims by customers
- Harm to SAP s reputation
- Increased complexity in times of digitalization with regards to legal requirements in the context of cross-border data transfer

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 and prevent attacks and intrusions, thus leading, for example, to risks in the following areas, among others:

- A globally increasing number of hacker 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 hackers

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

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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 due to intentional and fraudulent employee behavior could seriously harm our business, financial position, profit, and reputation.

SAP s leadership position in the global market is founded on the long-term and sustainable trust of our stakeholders worldwide. Our overarching approach is one of corporate transparency, open communication with financial markets, and adherence to recognized standards of business integrity. The SAP Code of Business Conduct, adopted by the Executive Board on January 29, 2003, and updated as necessary since then, codified and supplemented the already existing guidelines and expectations for the business behavior practiced at SAP.

However, we might for instance encounter the following risks associated with:

- Non-compliance with our integrity standards and violation of compliance related rules, regulations, and legal requirements including, but not limited to, anticorruption and bribery legislation in Germany, the U.S. Foreign Corrupt Practices Act, the UK Bribery Act, and other local laws prohibiting corrupt payments by employees, vendors, distributors, or agents

- Unethical and fraudulent behavior of individual employees or partners leading to criminal charges, fines, and claims by injured parties

- Collusion with external third parties, for example providing assistance in securing contracts

Fraud and corruption together with operational difficulties, especially in countries with a high Corruption Perceptions Index and particularly in emerging markets

Increased scrutiny of public sector transactions in high-risk territories

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.

In 2017 and 2018, SAP encountered situations that required clear messaging and strong action on non-compliance in the context of ethical behavior that has the potential to harm our business. In South Africa, SAP is

continuing to investigate its dealings with the public sector. For more information relating to the alleged anti-bribery law violations noted above, see the Notes to the Consolidated Financial Statements, *Note (G.4).*

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 Bill McDermott, Robert Enslin, and Jennifer Morgan all members of SAP SE s Executive Board, and except for Diane Greene and Aicha Evans, 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

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- 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
- High operating expenses or insufficient revenue generation to offset the significant research and development costs

In recent years, the trend has been towards an increased number of sales transactions, with the average deal size remaining more or less constant. However, the loss or delay of one or a few large opportunities could have an adverse effect on our business, financial position, profit, and cash flows.

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 2018, approximately 72.1% 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 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.

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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 maintenance and expansion of our highly skilled and specialized workforce in the area of cloud is a key success factor for our transition to be the leading cloud company. The availability of such personnel as well as business

experts is limited and, as a result, competition in our industry is intense.

We could face risks in the following areas, among others:

- Failure to apply workforce planning processes, adequate resource allocation, and location strategy in alignment with our general strategy
- Failure to identify, attract, develop, motivate, adequately compensate, and retain well-qualified and engaged personnel to scale to targeted markets
- Failure to successfully maintain, upskill, and expand our highly skilled and specialized workforce
- Poor succession management or failure to find adequate replacements
- Loss of key personnel of acquired business
- Failure to meet short-term and long-term workforce and skill requirements including achievements of internal gender diversity objectives
- Lack of appropriate or inadequately executed benefit and compensation programs
- Lack of availability and scalability of business experts and consultants
- Mismatch of expenses and revenue due to changes in headcount and infrastructure needs, as well as local legal or tax regulations
- Challenges with effectively managing a large distribution network of third-party companies

Any one or more of these events could reduce our ability to attract, develop, retain, and effectively manage our geographically dispersed workforce, which in turn could have an adverse effect on our business, financial position, profit, and cash flows.

Operational Business Risks

Sales and Services: Sales and implementation of SAP software and services, including cloud, is subject to a number of significant risks sometimes beyond our direct control.

A core element of our business is the successful implementation of software and service solutions to enable our customers to master complexity and help our customers businesses run at their best. The implementation of SAP software and cloud-based service deliveries is led by SAP, by partners, by customers, or by a combination thereof.

However, we might encounter risks in the following areas, among others:

Implementation risks, if, for example, implementations take longer than planned, or fail to generate the profit originally expected, scope deviations, solution complexity, individual integration and migration needs or functional requirement changes, or insufficient milestone management and tracking leading to delays in timeline, maybe even exceeding maintenance cycles of solutions in scope

Insufficient customer expectation management, including scope, integration capabilities and aspects as well as lack in purposeful selection, implementation, and utilization of SAP solutions

Lack of customer commitments and respective engagements, including lack of commitment of resources leading to delays or deviations from recommended best practices

Challenges to effectively implement acquired technologies

Protracted installation or significant third-party consulting costs

Improper calculations or estimates leading to costs exceeding the fees agreed in fixed-price contracts

Unrenderable services committed during the sales stage

Delayed customer payments due to differing perception on project outcome/results

Inadequate contracting and consumption models based on subscription models for services, support, and application management

Deviations from standard terms and conditions, which may lead to an increased risk exposure

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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 and train sufficient partner resources to promote, sell, and support to scale to targeted markets

Partners might not develop a sufficient number of new solutions and content on our platforms or might not provide high-quality products and services to meet customer expectations.

Partners might not embed our solutions sufficiently enough to profitably drive product adoption, especially with innovations such as SAP S/4HANA, 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 abide to contract terms in embargoed or high-risk countries.

If one or more of these risks materialize, this might have an adverse effect on the demand for our products and services as well as the partner s loyalty and ability to deliver. As a result, we might not be able to scale our business to compete successfully with other 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 related infrastructure against disruption or poor performance.

SAP is highly dependent on the availability of our infrastructure, and the software used in our cloud portfolio is inherently complex.

This could lead to risks in the following areas, among others:

Capacity shortage and SAP s inability to deliver and operate cloud services in a timely and efficient manner as expected by or committed to our customers

Customer concerns about the ability to scale operations for large enterprise customers

Defects or disruption to data center operations or system stability and availability

Interruptions in the availability of SAP s cloud applications portfolio 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

Incomplete cloud portfolio or certification representation could lead to customer misperception

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 an adverse effect on our business, financial position, profit, and cash flows.

Cybersecurity and Security: A cybersecurity attack or breach, or undetected security 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, our partners, our financial position, our operations, our reputation, 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, we face a progressively more complex security environment. The complexity of this security environment is amplified due to the increasingly malicious global cybersecurity threat landscape in which we operate, including third-party data, products, and services that we incorporate into SAP products, and the continually evolving and increasingly advanced techniques employed by threat actors targeting IT products and businesses. 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 and experience cybersecurity attacks of varying types and degrees on a regular basis. As a result, we are subject to risks and associated consequences in the following areas, among others:

Undetected security defects and vulnerabilities

Exposure of our business operations and service delivery due to virtual attack, disruption, damage, and/or unauthorized access, theft, destruction, industrial and/or economic espionage, serious and organized crime, and other illegal activities, as well as violent extremism and terrorism

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Abuse of data, social engineering, misuse or trespassers in our facilities, or systems could be rendered unusable

State-driven economic espionage or competitor-driven industrial espionage, and criminal activities including, but not limited to, cyberattacks and breaches against cloud services and hosted on-premise software

Disruptions to back-up, disaster recovery, and business continuity management processes

Failure to securely and successfully deliver cloud services by any cloud service provider could have a negative impact on customer trust in cloud solutions

Increased response time for identified security issues due to complexity and interdependencies could lead to security threats for SAP and customers

Customer systems or systems operated by SAP could be compromised by vulnerabilities due to hacker exploitation

Breach of security 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

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 or result in the issuance of orders or consent decrees that could require us to modify our business practices

Significant costs to attempt to detect, prevent, and mitigate any successful attacks, including but not limited to the costs of third-party legal and security experts and consultants, insurance costs, additional personnel and technologies, organizational changes, and incentives to customers and partners to retain their business

Increasing sophistication and frequency of cybersecurity attacks could mean that we might not discover a security breach or a loss of information for a significant amount of time after the breach, or at all, and might not be able to anticipate attacks or implement sufficient mitigating measures

Our cybersecurity and security protocols might not be able to keep pace with the ever-evolving and emerging threats

Customer concerns and loss of confidence in the current or future security and reliability of our products and services, including cloud solutions

Significant damage to the SAP brand, our reputation, our competitive position, our stock price, and our long-term shareholder value

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

We might not be as fast as expected in integrating our platforms and solutions, enabling the complete product and cloud service portfolio, harmonizing our user interface design and technology, integrating acquired technologies and products, or bringing packages, services, or

new solutions based on the SAP HANA platform as well as SAP Cloud Platform to the market.

New products, services, and cloud offerings, including third-party technologies, might not comply with local standards and requirements or could contain undetected or detected defects or could not be mature enough from the customer s point of view for business-critical solutions after shipment despite all the due diligence SAP puts into quality.

Inability to define and provide adequate solution packages and scope for all customer segments

Inability to fulfil expectations of customers regarding time and quality in the defect resolution process

Lack of customer references for new products and solutions

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

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:

Potential loss of existing on-premise customers due to competing cloud market trends

Adverse revenue effects due to increasing cloud business and conversions from on-premise licenses to cloud subscriptions from existing SAP customers, which could have an adverse effect on related maintenance and services revenue

Insufficient solution and service adoption together with increased complexity, as well as failures during the execution of our intelligent enterprise strategy in the context of our portfolio for solution 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 consider competitive cloud offerings.

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 growth-related efficiency gains in the cloud area could lead to significantly increased competition in the market with regards to pricing and ability to integrate solutions.

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Price pressure, cost increases, and loss of market share through traditional, new, and especially cooperating competitors

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

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 to make acquisitions in the future. Over time, certain of these acquisitions have increased in size and in strategic importance for SAP. Management negotiation of potential acquisitions and 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 (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 upon our ability to keep pace with technological and process innovations and new business models, as well as on our ability to develop new products and services, enhance and expand our existing products and services portfolio, and integrate products and services we obtain through acquisitions. To be successful, we are required to adapt our products and our go-to-market approach to a cloud-based delivery and consumption model to satisfy changing customer demand and

to ensure an appropriate level of adoption, customer satisfaction, and retention.

Considering preceding dependencies, this could lead to risks in the following areas, among others:

Not being able to bring new business models, solutions, solution enhancements, intelligent technologies, integrations and interfaces, and/or services to market before our competitors or at equally favorable conditions

Not being able to anticipate and develop technological improvements or succeed in adapting SAP products, services, processes, and business models to technological change, changing regulatory requirements, emerging industry standards, and changing requirements of our customers and partners (especially with innovations such as SAP S/4HANA, SAP C/4HANA, and SAP Cloud Platform) supporting 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 first.

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 competitive solutions in the market, or our strategy might not match customers expectations, specifically in the context of expanding the product portfolio into additional markets.

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.

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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.

As part of our activities to reduce the number of legal entities in the SAP group, in 2018 we integrated certain subsidiaries into the following significant SAP subsidiaries: SAP France, SAP America and SAP (Schweiz) AG.

For (i) a description of our principal capital expenditures and divestitures and the amount invested (including interests in other companies) since January 1, 2016 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 2018. 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	
SAP France, Levallois Perret	France
SAP (UK) Limited, Feltham	United Kingdom
SAP (Schweiz) AG, Biel	Switzerland
SAP Nederland B.V., s-Hertogenbosch	The Netherlands
SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., Vimercate	Italy
SAP España Sistemas, Aplicaciones y Productos en la Informática, S.A., Madrid	Spain
LLC SAP CIS, Moscow	Russia
United States	
SAP America, Inc., Newtown Square	USA
Concur Technologies, Inc., Bellevue	USA
Ariba, Inc., Palo Alto	USA
SuccessFactors, Inc., South San Francisco	USA
SAP National Security Services, Inc., Newtown Square	USA
SAP Industries, Inc., Newtown Square	USA
Rest of Americas	
SAP Canada, Inc., Toronto	Canada
Japan	
SAP Japan Co., Ltd., Tokyo	Japan
Rest of APJ	
SAP China Co., Ltd., Shanghai	China

SAP Australia Pty Ltd., Sydney	Australia
SAP India Private Limited, Bangalore	India

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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 software1 and also the leading analytics and business intelligence company. Globally, more than 77% of all transaction revenue touches an SAP system. With more than 425,000 customers in more than 180 countries, the SAP Group has a global presence and employs more than 96,000 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, TechDAX, the Dow Jones EURO STOXX 50, the Dow Jones Sustainability Index World, and the Dow Jones Sustainability Index Europe. As at December 31, 2018, SAP was the most valuable company in the DAX based on market capitalization. SAP was ranked as the most sustainable software company in the Dow Jones Sustainability Indices for the twelfth consecutive year.

As at December 31, 2018, SAP SE directly or indirectly controlled a worldwide group of 265 subsidiaries that develop, distribute, and provide our products, solutions, and services. For a list of our subsidiaries, associates, and other equity investments, see the Notes to the Consolidated Financial Statements, *Note (G.10)*.

Our Purpose

We are living in a time of global uncertainty that is caused by massive social change and digital disruption. Some of the world s greatest challenges can only be addressed by combining technology-driven innovations and corporate leadership.

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. With our innovations, we can help customers run at their best. Being the best means our customers can connect people and information to address the world s biggest challenges. That s why we focus on engineering solutions to fuel innovation, foster equality, and spread opportunity across borders and cultures. With our broad customer base and ecosystem of around 18,800 partners, we can amplify our collective economic, social, and environmental impact.

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 ecosystem, can execute initiatives across all 17 of the UN SDGs.

The Intelligent Enterprise

Most enterprises today are struggling to address three key challenges: How do they deliver a next-generation customer experience to stay relevant in a world of disruption? How do they drive maximum cost synergies to fund innovation? How do they better engage their employees to attract and retain top talent?

Enterprises are trying to leverage data-driven insights to solve these challenges. Winners in the digital economy are those that are able to extract intelligence and insights from their data and act faster relative to their competition. SAP can help our customers to win in the marketplace

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1 Enterprise application software is computer software specifically developed to support and automate business processes.

by reimagining entire business processes through injecting predictive insights leveraging technologies such as artificial intelligence (AI)/machine learning (ML), the Internet of Things (IoT), and analytics across an integrated value chain. With SAP innovations, our customers can engage in real time with their users to deliver and continuously improve their experiences.

SAP can deliver the intelligent enterprise by focusing on three key business outcomes:

Reimagining the **end-to-end customer experience** from predicting the demand to designing the product based on the unique need of the consumer, to procuring the best supplier for the product to manufacturing, and to delivering the product or service that maximizes customer satisfaction

Delivering a **step change in productivity** through the next level of automation in business processes powered by AI/ML that will be embedded in every part of the business process (across financials, supply chain, manufacturing, procurement, travel, and human resources). The key to doing this is improving cycle time of business processes and injecting speed everywhere

Transforming the way companies **engage their workforce** by delivering total workforce engagement across full-time and contingent labor and by improving the effectiveness of their workforce by driving touchless processes and voice/chat-enabled systems.

At SAP, our commitment to our customers is to help them meet today s challenges and to prepare for anticipated challenges of the future. Our strategy is to deliver the intelligent enterprise for our customers. Our vision for the intelligent enterprise is an event-driven, real-time business. SAP can deliver on these objectives by leveraging the power of data in SAP software with technologies such as AI/ML to build powerful intelligent applications. With SAP HANA and SAP Cloud Platform, we can embed intelligence into every part of our portfolio. This enables enterprises to get step change in productivity and enables higher focus on innovation, customer experience, and new business models. The intelligent enterprise is how SAP sees the future of business for our customers, the future of work for our customers employees, and the future of experience for our customers customers.

Delivering the Intelligent Enterprise

Our integrated end-to-end portfolio enables an intelligent enterprise by offering business value, data-driven innovation, rich customer experience insights, and embedded intelligence. We embed intelligent technologies throughout the extensive platform and rich portfolio of applications we deliver. Our software, technologies, and services address the three core elements of the intelligent enterprise for the 25 industries and 12 lines of business (LoBs) we serve:

An **intelligent suite** of LoB applications that includes next-generation enterprise resource planning (ERP) in the cloud, as well as solutions for customer experience, manufacturing and supply chain, network and spend management, and people engagement. The intelligent suite is integrated and differentiated by industry-specific business processes for end-to-end scenarios.

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A **digital platform** to help customers manage data orchestration across their entire application footprint. This includes real-time visibility into distributed data silos using next-generation **data management** solutions and an open **cloud platform** as a business platform for integration and business process innovation.

Intelligent technologies, such as AI/ML, IoT, and advanced analytics, help customers optimize their core business processes, extract real-time insights, and reinvent their business models. This intelligence is integrated across applications and helps us deliver unique outcomes to every customer.

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

The innovative power of our people is key to delivering the intelligent enterprise, as our people are key in helping our customers transform. We strive to create a workplace that can attract and retain the best talent in the market. We are fully committed to enabling our employees to grow their skills at every stage of their career at SAP.

Expanding to Experience Management

Every digital interaction is an opportunity to positively influence a customer. Each digital interaction is an opportunity to measure customer satisfaction, employee engagement, partner collaboration, and brand impact. It is also an opportunity to derive sentiment on how end users and customers perceive a company or a product. By combining experience data with operational data, SAP can expand from delivering the intelligent enterprise to delivering intelligent experiences to our customers.

Most successful companies do not just react to problems as they occur, they try to predict and mitigate those problems before they ever happen. Experience management is the process of analyzing the interactions that people experience with a company in real time and identifying opportunities for improvement. By analyzing employee surveys and service center tickets and calls, and combining this information with organizational data, SAP can help support a higher level of employee engagement and retention for our customers. By capturing feedback on how consumers experience the physical or digital product in real time, SAP can help our customers design better. By understanding the sentiment of every customer interaction, and correlating this with operational data on price and service delivery, SAP can help our customers drive better topline performance and create better products and services.

Acquisitions

We will continue to focus on investments in technology and innovations that ensure sustainable growth of our solution portfolio to drive our short-term, mid-term, and long-term ambitions. We will continue to unleash the full potential of our employees talent as well as foster strategic

partnerships with our ecosystem to cultivate innovation. Further, we may make targeted acquisitions to complement our solution offerings and improve coverage in key strategic markets.

In April 2018, we acquired **Callidus Software Inc.**, a company offering a cloud-based customer relationship management (CRM) solution marketed under CallidusCloud, which provides SAP and our customers a differentiated, cloud-based CRM solution. This helps put SAP in a leading position to compete in the CRM market. SAP has consolidated the CallidusCloud offerings with SAP Hybris solutions into the SAP C/4HANA suite of customer experience solutions, and is reported as part of the Customer Experience segment. For more information about the acquisition of Callidus Software Inc., see the Notes to the Consolidated Financial Statements, *Note (D.1)*.

In November 2018, we announced our intent to acquire **Qualtrics International, Inc.**, a global pioneer of the experience management software category that enables organizations to thrive in today s economy. The deal was closed on January 23, 2019. Experience management focuses on obtaining and tapping the value of outside-in customer, employee, product, and brand feedback in real time. Together, SAP and Qualtrics aim to accelerate the new experience management category by combining experience data and operational data to power the experience economy. This creates a highly differentiated offering for businesses to engage with their customers to deliver and continuously improve customer, employee, product, and brand experiences. Qualtrics will be reflected in our Customer Experience segment which we renamed, upon the Qualtrics acquisition in 2019, to Customer and Experience Management. For more information about the acquisition of Qualtrics International, Inc., see the Notes to the Consolidated Financial Statements, *Note (G.9)*.

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 currently has over US$3.5 billion under management and has invested in more than 160 companies on five continents. This includes 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 a dedicated 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 under-represented groups in technology to foster diversity and inclusion. One of these investment examples is women in technology.

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SAP s Impact

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

We innovate software and technology solutions that empower our customers to become

intelligent enterprises and create a better and more sustainable economy, environment, and society.

SAP s Impact

Our purpose comes to life through our contribution to the UN Sustainable Development Goals (SDGs). We innovate software and technology solutions that help empower our customers to become intelligent enterprises. It means connecting people and information to address the world s biggest challenges.

For us, delivering the Intelligent Enterprise and helping our customers thrive in the experience economy are essential for a better, more productive world. By unlocking the full potential of innovation, we can transform how businesses and governments impact 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. The close collaboration with our customers and partners throughout the process helps us 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 immediately generate results for SAP such as growth, profitability, employee engagement, and customer loyalty. Value creation for the customer

is realized when they implement the software and services to support their business and help achieve their own visions and purposes.

Inputs

This value creation process does not happen in a vacuum. It is enabled by external inputs, most importantly customer insights and broader stakeholder dialog, financial capital, employees expertise, and intellectual property, third party products and services, as well as the IT infrastructure we rely on.

Impact

Our solutions lead to significant 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, 9, 10, and 12 by helping provide meaningful work and strengthening industries and infrastructure. For example, SAP software helps as follows:

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

As such, our software supports the responsible growth practices necessary to ensure the survival of future generations.

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Society:

SAP software supports the UN SDGs 1, 2, 3, 4, 5, 7, 11, and 16 by helping create a peaceful and just society through better healthcare, education, and access to technology. For example:

SAP technology is at the epicenter of complex medical issues when it comes to prevention, treatments, and cures for cancer, diabetes and other diseases. 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, 13, 14, and 15 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, SAP knows there is power in collaboration and engages in a wide range of partnerships to address SDG 17.

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 KPIs used to measure performance within these objectives, and compares this performance with our goals.

Outlook and Results for 2018

Strategic Objective	**KPI**	**2018 Outlook*** (non-IFRS, at constant currencies)	**2018 Results** (non-IFRS, at constant currencies)
Growth	**Cloud subscriptions and support revenue**	5.150 billion to 5.250 billion	5.205 billion
	Cloud and software revenue	21.150 billion to 21.350 billion	21.577 billion
	Total revenue	25.200 billion to 25.500 billion	25.961 billion
Profitability	**Operating profit**	7.425 billion to 7.525 billion	7.480 billion
Customer Loyalty	**Customer Net Promoter Score**	21 to 23	5.0
Employee Engagement	**Employee Engagement Index**	84% to 86%	84%

* The outlook was communicated in January 2018 and financial targets were raised in April, July, and October 2018. The 2018 outlook numbers above reflect the raised outlook from October 2018.

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

Outlook for 2019

Strategic Objective	KPI	2018 Results (non-IFRS)	2019 Outlook (non-IFRS, at constant currencies)
Growth	Cloud subscriptions and support revenue	5.03 billion	6.7 billion to 7.0 billion
	Cloud and software revenue	20.66 billion	22.4 billion to 22.7 billion
	Total revenue	24.74 billion	strong increase, slightly lower rate than operating profit
Profitability	Operating profit	7.16 billion	7.7 billion to 8.0 billion
Customer Loyalty	Customer Net Promoter Score	5.0	+1.0
Employee Engagement	Employee Engagement Index	84%	84% to 86%

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

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Ambitions for 2020 and 2023

Strategic Objective	**KPI**	**2018 Results** (non-IFRS)	**2020 Ambition** (non-IFRS)	**2023 Ambition** (non-IFRS)
Growth	**Cloud subscriptions and support revenue**	5.03 billion	8.6 billion to 9.1 billion	More than triple
	Cloud and software revenue	20.66 billion		
	Total revenue	24.74 billion	28.6 billion to 29.2 billion	More than 35 billion
Profitability	**Operating profit**	7.16 billion	8.5 billion to 9.0 billion	7.5% to 10% CAGR
Customer Loyalty	**Customer Net Promoter Score**	5.0	steadily increase	
Employee Engagement	**Employee Engagement Index**	84%	84% to 86%	

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 2018, 2017, and 2016 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 subscriptions and support revenues are less subject to seasonality.

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Products, Research & Development, and Services

Bringing Together Machine and Human Intelligence

SAP works to deliver an intelligent enterprise that brings together machine and human intelligence across all business functions to provide value to customers. As we make that happen, we aim to help customers make best use of their data assets to achieve their desired outcomes faster and with less risk.

Intelligent Enterprise Vision

To make good on our commitment to help customers transform themselves into full digital enterprises operating in real time, we have created a framework for the intelligent enterprise, as described in the *Strategy and Business Model* section and illustrated below. This framework is further strengthened with a portfolio of services and support offerings to help customers maximize the value of their SAP software and technology implementations.

By bringing continuous innovation, we not only help our customers succeed as they adopt increasingly more sustainable business strategies, but we also realize our purpose of helping the world run better and improving people s lives.

Intelligent Suite

Whether a business needs to manage its total spend, gain a deeper understanding of its customers, engage its external workforce, or transform its workplace experience, our intelligent suite enables a global enterprise to thrive in the digital economy. Developed with new technologies such as artificial intelligence (AI)/machine learning, including chatbots and voice technology, SAP cloud applications provide businesses with insights and intelligence to anticipate and proactively respond to business imperatives and identify opportunities for improvement. Together, these solutions support the customer s journey to becoming an intelligent enterprise.

Integrated with SAP S/4HANA, our digital core, and built on an open cloud platform to enable integration across heterogeneous environments, these offerings can be linked easily with third-party applications and data, delivering the real-time and actionable insights that customers need.

With our acquisition of Qualtrics International Inc. on January 23, 2019, SAP adds experience management capabilities to further empower the intelligent enterprise, bringing a new dimension in which every digital interaction is an opportunity to influence a customer positively. A business can use each interaction to measure customer satisfaction, employee engagement, partner collaboration, brand impact, and user sentiment. By combining such experience data with the operational data already maintained in an SAP system, an intelligent enterprise can deliver intelligent experiences for customers.

Network and Spend Management

Every business can benefit from better managing its spend. Our cloud solutions under the SAP Ariba, SAP Concur, and SAP Fieldglass brands give customers the essential visibility and capacity to control their spend. Together, the solutions comprise the largest commerce platform in the world, with approximately $2.9 trillion in global commerce transacted annually in more than 230 countries and territories. These solutions enable insight and control across sourcing and supplier management, travel and expense, and external workforce. Our network and spend management solutions are built on an open platform of established business networks. They give customers greater understanding of all spend related to vendors and employees and the ability to share master data through SAP S/4HANA to maximize intelligence-based decisions. These solutions deliver best practices for our customers, no matter if they decide to use our entire portfolio or a specific solution to address their needs.

SAP Ariba

SAP Ariba solutions offer an online business-to-business marketplace connecting more than 3.8 million sellers in more than 190 countries, with sellers realizing more than US$2.6 trillion in goods and services every year.

New innovations in 2018 include the following:

The **SAP Ariba Spend Analysis** solution leverages AI and machine learning to reduce the time it takes to classify invoice data.

The **SAP Ariba Snap** program provides simple, affordable, and scalable options for fast-growing companies to implement sourcing solutions and reap the benefits they provide.

The **SAP Digital Manufacturing Cloud** solution offers a manufacturing network that integrates with the SAP Ariba Sourcing solution and Ariba Network, and enables manufacturers and service providers to connect and collaborate across the entire manufacturing process.

SAP Ariba Strategic Sourcing Suite significantly expanded its industry capabilities with new retail industry capabilities for direct spend.

The **SAP Ariba Supplier Risk** solution provides additional insights to help customers track 175 risk incident types in partnership with Semantic Vision, Made In a Free World, World Economic Forum, and other public and private data aggregators. These risk incident types are used to calculate a company s supplier risk-exposure score. This score is then used to analyze exposure to high-risk suppliers. The solution also provides a comprehensive risk-due-diligence process, which helps companies meet third-party regulatory compliance requirements.

The **SAP Ariba Cloud Integration Gateway** solution enabled by the SAP Cloud Platform Integration service provides with buyers a simple,

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reliable, and faster way to connect their SAP ERP and SAP S/4HANA systems with SAP Ariba solutions.

SAP Fieldglass

SAP Fieldglass solutions are cloud-based applications for external workforce management and services procurement. The SAP Fieldglass Vendor Management System helps organizations find, engage, and manage all types of flexible resources including contingent workers, statement-of-work-based consultants, freelancers, and more. In 2018, SAP Fieldglass solutions connected customers with 5.7 million active external workers and more than 131,000 suppliers in over 220 countries and territories.

New innovations in 2018 include the following:

The **Digital Partner Network** for SAP Fieldglass solutions was launched in 2018 as a new ecosystem network to help customers transform how they engage and manage an external workforce of freelancers, contingent workers, independent contractors, and other service providers.

We delivered a machine-learning powered **Resume Matching** service that automatically reads and ranks candidates based on role requirements, identifying best-fit candidates while increasing efficiency and speed to hire.

SAP Concur

With close to 58 million users worldwide, SAP Concur is the world s leading travel and expense management software. SAP Concur solutions help companies of all sizes and stages go beyond automation to a connected spend management system that encompasses travel, expense, invoice, compliance, and risk. These solutions help businesses gather instant, actionable insights that support the intelligent enterprise.

New innovations in 2018 include the following:

The **ExpenseIt** mobile app, an already established offering, was fully integrated with SAP Concur solutions in 2018, providing valuable functionality that uses receipt scanning technology powered by machine learning to turn receipts into expense report line items.

The **Budget** add-on is a Web service that aggregates data in near real time from SAP Concur solutions including Concur Expense and Concur Invoice, as well as purchase and travel requests, for a comprehensive dashboard on spend before and after the spend occurs.

The **Concur Drive** add-on is a Web service that allows businesses to automatically capture distance driven as an automated alternative to self-reported mileage, reducing overspending in organizations.

People Engagement

SAP SuccessFactors

SAP SuccessFactors Human Capital Management (HCM) solutions help organizations increase the value of their workforce by developing, managing, engaging, and empowering their people. SAP SuccessFactors solutions are delivered as a complete digital suite that addresses all aspects of human resources (HR), from administration, payroll, and benefits to talent management and collaboration across the employee journey. These solutions integrate fully with the customer s other business software, including SAP S/4HANA. SAP SuccessFactors HCM solutions are used by more than 6,700 customers in over 200 countries and territories, and core HR and talent management solutions reach more than 125 million users.

New innovations in 2018 include the following:

An **SAP SuccessFactors digital assistant** was developed to provide a business entire workforce with a personalized, engaging experience by applying machine learning to guide and recommend actions based on verbal and written questions or commands.

SAP SuccessFactors Visa and Permits Management is the first SAP SuccessFactors solution built on SAP Cloud Platform. It offers a single place for HR to centrally manage, automate, and gain insight into complex employee work visa and permit processes for international hiring.

Several key features were also added to existing HCM solutions, including functionality for the **General Data Protection Regulation (GDPR)**, a set of laws that came into force on May 25, 2018, which affects data privacy practices throughout the European Union (EU). This GDPR functionality is now embedded across the entire HCM suite, making it easier for HR leaders to properly handle and protect sensitive employee and candidate data. A candidate relationship management capability is now available as part of the SAP SuccessFactors Recruiting solution, helping recruiters to attract more relevant candidates, engage and nurture targeted talent pools, and manage the application and hiring process more efficiently.

Further improving usability across mobile devices, SAP and Google partnered in 2018 to redesign the SAP SuccessFactors Mobile app for Android. Employees and managers can now more easily engage and complete critical people-related tasks. We also joined forces with Thrive Global to introduce Well-Being at Work, a new initiative that puts employee well-being at the heart of organizations and positions technology as a catalyst for this cultural shift. SAP SuccessFactors Work-Life is the first solution to come from this partnership. It provides real-time insights into well-being needs and makes recommendations to improve employee satisfaction and engagement.

Digital Core

SAP S/4HANA

SAP S/4HANA is our enterprise resource planning (ERP) suite for the intelligent enterprise. Approximately 10,500 customers have chosen it to support their digital transformation. It enables a business to access and analyze data in real time, giving them insights to act in the moment, providing predictive suggestions, and connecting business functions and the people within them. SAP S/4HANA software spans all business functions including finance, human resources, sales, service, procurement, manufacturing, asset management, supply chain, and R&D.

Flexible Deployment Options

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

Real Time

Built specifically to take advantage of in-memory computing with SAP HANA, SAP S/4HANA reduces both the complexity of the data model and the data footprint. It enables SAP S/4HANA solutions to process huge amounts of data in real time and end users can flexibly change their perspective of the data. This not only saves time and costs for our customers but also delivers a new interactive experience and new business

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insights. SAP S/4HANA empowers business users to act in the moment, as they have immediate access to information at the most granular level to help make better, more informed decisions.

Integrated and Extendable

SAP S/4HANA is built with an open architecture and connects to the entire SAP portfolio and beyond. The SAP S/4HANA Cloud software development kit (SDK) allows our customers and partners to innovate quickly and easily on SAP Cloud Platform while leveraging the capabilities of their digital core.

Manufacturing and Supply Chain

Our SAP Digital Supply Chain portfolio offers enterprises an integrated suite of digital supply chain solutions to plan, design, manufacture, deliver, and operate their products. With these solutions, customers can blend the physical and the digital world throughout the complete supply chain from design, planning, and manufacturing to logistics and ongoing maintenance embedding intelligence and ensuring their customers are central to every phase of their business. Customers get total visibility as products are designed, delivered, and deployed by connecting their business processes with real-time data from assets, equipment, customers, and suppliers. This visibility is used to adequately anticipate and respond to real-world physical realities.

Integrated Business Planning

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

Asset Management

SAP Intelligent Asset Management solutions support manufacturers and asset operators to define, plan, and monitor the optimal service and maintenance strategy for their physical products and assets. The solutions do this by providing the required level of collaboration, integration, and analytical insights, using an asset central foundation, our digital twin for physical assets, as the common data set.

Customer Experience

SAP C/4HANA

In June 2018, we launched SAP C/4HANA, a unified suite of cloud solutions designed as the next generation of customer relationship management. SAP C/4HANA software provides companies with a single, holistic view of each customer across all channels and connects demand to the fulfillment engine in one end-to-end value chain. To complete our portfolio of customer experience solutions, SAP acquired and integrated Gigya, Callidus Software, and Coresystems, and rebranded the SAP Hybris business area to SAP Customer Experience to reflect the depth and breadth of our offerings.

SAP C/4HANA is now a major growth driver for SAP, showing triple-digit growth in cloud subscription revenue during 2018.

New innovations in 2018 include the following:

SAP Upscale Commerce is a commerce solution designed for midmarket retailers, major brands, and direct-to-consumer companies

looking to deploy a fast and highly engaging commerce experience. Built for today s mobile-first consumer, it can be deployed in a matter of days, bringing SAP customers speed to market with rich AI-powered experiences.

SAP Commerce Cloud on Microsoft Azure is a partnership that combines SAP s market-leading solution for B2B and B2C scenarios with the Microsoft Azure public cloud infrastructure.

We also announced the **Open Data Initiative**, a partnership between SAP, Microsoft, and Adobe, the goal of which is to meet a core need for our customers to unlock a single view of their customers by bringing siloed data together.

Winning in the CRM market hinges on our ability to deliver an integrated lead-to-cash process that connects the front office (SAP C/4HANA) with the digital core (SAP S/4HANA) while maintaining competitiveness in each area of the SAP Customer Experience portfolio.

Digital Platform

Helping customers manage data orchestration and system integration across their SAP installation, our digital platform consists of SAP Cloud Platform, the foundation on which the intelligent suite is built, and SAP HANA Data Management Suite, which manages distributed data from any source. The platform not only caters to the runtime and data storage needs of the end-to-end applications in the intelligent suite, but it also enriches them with intelligent technologies, such as machine learning, Internet of Things (IoT), and analytics capabilities, all offered as cloud services, which are easily embedded in business applications.

SAP Cloud Platform

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

Extend and customize cloud and on-premise SAP applications

Develop new applications for different processes

Integrate cloud and on-premise applications

SAP Cloud Platform offers an enterprise platform-as-a-service (PaaS) environment where companies can build, test, run, manage, and expand software applications in the cloud. It is the center of gravity for the intelligent enterprise, as applications can run on SAP Cloud Platform, or run with it, by using the platform s services while running on another stack. It offers comprehensive capabilities to help business users and developers create better, more agile applications in less time. Customers can apply, among other things, mobile services, advanced analytic tools, state-of-the-art authentication mechanisms, and social functionality. For maximum flexibility, portability, and agility, we use open source technologies. SAP Cloud Platform enables businesses to connect and integrate best-of-breed applications to our digital core and to custom-built solutions. The introduction of the SAP Cloud Platform Functions service and SAP Cloud Platform, ABAP environment, simplifies deployments and brings new choices for SAP customers in the cloud.

Giving Customers Freedom of Choice

With SAP Cloud Platform, customers are free to choose from a range of infrastructure-as-a-service (IaaS) providers, and today many enterprise customers are choosing more than one provider. SAP has partnered with Alibaba, Amazon, Google, and Microsoft, so our customers can run their applications in an SAP or a third-party data center, or in a combination thereof. We also offer SAP Cloud Platform as a private cloud deployment.

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SAP HANA Data Management

Since 2010, SAP has helped customers realize the value in their data with SAP HANA. Today, customers have a new challenge with distributed data. Data is no longer just in transactional systems, but is distributed across products, machines, and people. This is why SAP has brought together the SAP HANA business data platform and SAP Data Hub as a complete commercial solution to address the emerging challenges enterprises face in managing a distributed data landscape.

The SAP HANA business data platform is our flagship in-memory database, available both on premise and as a service in the cloud. It enables businesses to process and analyze live data and make business decisions based on the most up-to-date information, a requirement in today s digital economy. The innovative architecture in SAP HANA allows both transactional processing for data capture and retrieval, and analytical processing for business intelligence and reporting. It reduces time-consuming database and data management tasks and underpins intelligent applications that use advanced analytic processing. It includes features such as text analysis, multitenant database containers to support multiple isolated databases in a single SAP HANA system, as well as external machine learning libraries.

The SAP Data Hub solution enables businesses to manage data from numerous sources SAP or third party without having to centralize data into one location. SAP Data Hub allows data to be processed in flow, for example, while data is being recorded to the data store, or being prepared for use in machine learning. It also provides enterprise data governance to see who changed or accessed the data. The solution lets companies safely and effectively move and share their data to enable agile data operations across the enterprise.

Intelligent Technologies

SAP Leonardo

SAP Leonardo is a methodology that combines design thinking services with intelligent technologies for every business process, to enable rapid innovation and create better outcomes for the customer. SAP Leonardo brings together the customer vision, SAP s processes and industry knowledge, and technologies such as analytics, AI/machine learning, and IoT capabilities. SAP Cloud Platform provides the environment for applications to consume these technologies.

Analytics

The SAP Analytics Cloud solution leverages the inherent intersection of business intelligence (BI), planning, and predictive analytics to deliver new capabilities such as simulation and automated discovery in BI, as well as storytelling and predicted forecasts in planning. The solution allows organizations to close the gap between transactions, data preparation, analysis, and action. In addition, the SAP Analytics Cloud solution allows customers to take advantage of high-speed innovation in the cloud, while using their existing on-premise investments. To further enable a smooth transition to the cloud, we offer the SAP Analytics Hub solution. SAP Analytics Hub makes it easier for our customers to find the analytics applications they need, as it delivers a single point of access to all analytics offerings, cloud and on premise, from SAP and our many ecosystem partners.

SAP BW/4HANA

SAP BW/4HANA is a data warehouse solution built entirely on SAP HANA. It offers a unique real-time analytics layer, which can directly query

the database, instead of processing data at the application layer like traditional analytical engines do. It integrates data from across an organization to deliver key business intelligence. SAP BW/4HANA provides customers with enhanced data modelling and governance, so they can manage the availability, integrity, and security of data. The solution can be connected to various data sources, including SAP or unstructured third-party data, such as Hadoop.

SAP Leonardo Internet of Things

Intelligent devices that generate contextual sensor data are becoming more commonplace in the enterprise, as older machines are retrofitted with sensors and processing capabilities, while newer machines are made intelligent by design. The data generated from these things can be processed with business logic, either at source, in the cloud, or in both; it allows the intelligent enterprise to expand into new business models. Connectivity between these devices, aptly called the Internet of Things (IoT), has led to a surge of investment in opportunities to optimize and increase business outcomes by connecting things to people and processes.

The enterprise IoT capabilities we provide are catalysts for digital transformation, delivering real-time and forward-looking predictive insights that our customers need for their intelligent enterprises.

SAP Leonardo Machine Learning

Machine learning describes algorithms that learn from data and support employees to focus on higher value work, thus empowering enterprises to scale innovative solutions and make their organization intelligent. SAP Leonardo Machine Learning solutions are already integrated in our SAP portfolio, providing intelligent capabilities in SAP S/4HANA, SAP C/4HANA, SAP Concur, SAP Fieldglass, and SAP SuccessFactors solutions, among others. These intelligent capabilities are orchestrated through the SAP Leonardo Machine Learning Foundation, which runs on SAP Cloud Platform, and provides a variety of functional and business services. In addition to SAP s own software developers, our partners and customers can easily use pretrained or retrainable machine learning capabilities, train their own machine learning models, and build services on top of this foundation. Likewise, SAP Conversational AI provides a way to build bots that automate conversational interactions through natural language processing within SAP offerings in the SAP C/4HANA suite, for example. SAP customers and partners are also able to create their own custom bots with this service.

SAP Digital Business Services

In addition to our powerful software and technology, SAP provides an entire portfolio of service and support offerings to help customers maximize the value of their SAP implementations. These offerings enable the intelligent enterprise. Our people, processes, and tools help customers to achieve digital transformation, enabling them to produce exceptional business outcomes. In 2018, SAP continued a process that had begun the year before, to simplify its services portfolio, creating three categories continuous success, premium success, and project success and expanded the range of intelligent tools designed to underpin service and support offerings.

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Continuous Success

SAP helps accelerate the customer s time to value from our technology. As the foundation for customer success plans, the following support offerings are provided for our cloud solutions and on-premise software:

SAP Enterprise Support services provide proactive, predictive, and preventive support for customers across hybrid landscapes to help them move to the cloud, make SAP S/4HANA their digital core, and embrace breakthrough innovations through SAP Leonardo.

SAP Preferred Success service offers a bundle of prescriptive customer success activities for accelerated cloud adoption. It focuses on effective change management, enablement, consumption techniques, and enhanced support. As an add-on to SAP Enterprise Support, cloud editions, SAP Preferred Success is available for SAP SuccessFactors solutions, SAP S/4HANA Cloud, SAP C/4HANA, and SAP Cloud Platform.

Premium Success

The SAP MaxAttention program represents the most exclusive and closest customer partnership with SAP. It was completely redesigned in 2018, following close consultation with customers. The **New SAP MaxAttention** helps customers turn ideas into value-based predictable outcomes with precise business and technical guidance from innovation to operation and is composed of the following:

One service portfolio ensures coverage for all SAP solutions and deployments on premise, cloud, and hybrid.

One team brings a holistic engagement model with clear accountabilities.

One commercial framework offers pay-as-you-use services with predictable outcomes.

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

The **SAP ActiveAttention** program is a premium-level engagement similar to the New SAP MaxAttention, but designed to support smaller businesses requiring a less intense engagement level.

Project Success

We standardized our services portfolio to help companies reap the benefits of SAP products and solutions faster. Depending on the needs of the customer, we offer the following services separately or packaged together:

SAP Advisory Services help customers turn their digital business vision into executable strategies and exceptional business outcomes by offering support to reimagine business models, design enterprise architectures, and deliver business transformation to realize business value.

SAP Innovation Services provide a flexible, open innovation approach that helps customers apply emerging technologies such as AI and machine learning to bring commercial value to their business, at scale. With expert guidance from SAP from ideation to readiness for deployment customers can bring their novel ideas to life as scaled implementations.

SAP Model Company services provide a preconfigured, ready-to-run reference solution with business content, accelerators, and engineered services for multiple industries or lines of business. It provides the building blocks for a solution, helping customers accelerate deployment and digital transformation.

SAP Value Assurance service packages safeguard implementations led by customers and partners by giving them access to best practices, methodologies, tools, and deep technology expertise, enabling them to accelerate the deployment of SAP S/4HANA and SAP BW/4HANA.

The **SAP Advanced Deployment** service simplifies and accelerates the deployment of SAP S/4HANA for SAP-led implementations. Based on the proven SAP Activate methodology and tailored to the enterprise s specific transition scenario, the service streamlines the implementation or migration to a high-performing, sustainable digital core.

In addition to our standardized service offerings, the new **SAP S/4HANA Movement** program guides SAP ERP customers as they start to think about their transition to SAP S/4HANA. This is an easy-to-use adoption starter engagement that helps customers structure and assess their transformation towards SAP S/4HANA.

Intelligent Tools

Complementing the skills of our people, we develop intelligent tools to help simplify and accelerate our customers implementation of SAP solutions and ease the transition to an intelligent enterprise. In 2018, we expanded our range of intelligent tools. In addition to established tools such as SAP Transformation Navigator, SAP Readiness Check, SAP Solution Manager, and SAP Innovation and Optimization Pathfinder, we introduced two new offerings:

SAP Cloud Platform Integration Advisor is a service that allows users to define, maintain, share, and deploy business-to-business (B2B) integration content and interfaces using machine-learning algorithms to significantly reduce build time and effort.

The **SAP Cloud ALM** solution is a cloud-based application lifecycle management (ALM) tool that helps track and manage the needs of customers that use (only or predominantly) cloud solutions from SAP. SAP Cloud ALM starts with an implementation portal for SAP S/4HANA Cloud. Customers subscribing to a cloud solution from SAP automatically receive SAP Cloud ALM.

Ecosystem

Extending Our Reach Through a Broad Ecosystem

SAP s extensive ecosystem and partner network serves as a vital success driver, extending our reach in the marketplace. Our vibrant ecosystem is made up of more than 18,000 partners worldwide that build, sell, service, and run SAP solutions and technology.

Through the power of partnership and co-innovation, our partner ecosystem drives the bulk of SAP s presence among small and midsize companies, making up more than 80% of SAP customers. Partners are helping SAP break into new markets with SAP Leonardo and SAP Cloud Platform, and are also developing intellectual property by creating prepackaged solutions to simplify cloud implementations for customers. As AI/machine learning, IoT, and blockchain technologies become mainstream, SAP and our partners are enabling our customers to become intelligent enterprises. By taking advantage of these innovative technologies in end-to-end business processes, businesses can drive the next level of automation and drive a next-generation value economy.

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Investment in R&D

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

In 2018, our IFRS R&D ratio, reflecting R&D expenses as a portion of total operating expenses, increased by 1.1 percentage points (pp) to 19.1% (2017: 18.0%). Our non-IFRS R&D ratio increased by 1.0pp to 19.4% year over year (2017: 18.4%). At the end of 2018, our total full-time equivalent (FTE) headcount in development work was 27,060 (2017: 24,872). Measured in FTEs, our R&D headcount was 28% of total headcount (2017: 28%).

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

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

Patents

SAP actively seeks intellectual property protection for innovations and proprietary information. Our software innovations continue to strengthen our market position as a leader in business solutions and services. Our investment in R&D has resulted in numerous patents. As at December 31, 2018, SAP held a total of more than 9,542 validated patents worldwide. Of these, 700 were granted and validated in 2018.

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.

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Security, Privacy, and Data Protection

Meeting Today s Data Protection Challenges

Every day, organizations around the world trust SAP with their data either on their own premises, in the cloud, or 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 report to the SAP chief financial officer (CFO) and monitor the compliance of all activities in these areas.

SAP has a formal security governance model in place. Relevant security topics are discussed at the Executive Board level numerous times each year, during steering committee meetings attended by individual or multiple board members. To meet and ensure consistent data protection compliance, our CFO and our data protection officer (DPO) meet at least monthly. Furthermore, our compliance status related to data protection has been an inherent part of Supervisory Board meetings.

Facing Increasing Risks in IT Security

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

Establishing a Comprehensive Security Vision

For SAP and for our customers, security means more than just addressing compliance demands. Companies need to be proactive when securing business-critical data and core information assets.

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

Secure Product Strategy: Championing Product Security

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

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

recommendations made by these security experts before we release the application.

We strive to align our secure software development lifecycle to the recommendations of the ISO/IEC 27034 standard for application security and our ISO 9001-certified process framework for developing standard software, as well as apply the methods for developing secure software.

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 an intelligent enterprise, we have established a comprehensive IT operations security framework. This includes system and data access, and system security configuration, through security patch management, proactive security event management, thread hunting, and robust 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.

Industry certifications are key success factors our secure operations strategy. Many of our cloud solutions undergo Service Organization Control (SOC) audits, including ISAE3402, SSAE16 SOC 1 Type II, and SSAE16 SOC 2 Type II. The SOC standards are harmonized with a number of certifications from the International Organization for Standardization (ISO), including ISO 9001, 27001, and 22301.

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

At SAP, we take a holistic approach to the security of our company, encompassing processes, technology, and employees. At the heart of our secure company strategy 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: Regular mandatory 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 review this framework on an annual basis to adapt to new or changed business needs.

In addition to these important measures, up-to-date security mechanisms, such as authentication, authorization, and encryption, serve as a first line of defense. To secure the SAP software landscape, we offer a 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.

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Our portfolio includes identity and access management tools and solutions for governance, risk, and compliance.

Furthermore, our SAP Cloud Trust Center site provides transparency for our customers with regard to how SAP helps to improve security, privacy, and compliance in cloud and on-premise landscapes.

Complying with Data Protection and Privacy Legislation

SAP respects and protects the right to data protection and privacy when processing the personal data of employees, applicants, customers, suppliers, and partners. While implementing appropriate security measures, we develop and pursue our data protection and privacy strategy in accordance with our business strategy.

Our global data protection and privacy policy and global data protection management system (DPMS) are designed to ensure that we comply with applicable data protection laws. These include the harmonized European data protection law, the General Data Protection Regulation (GDPR).

Our policy outlines a group-wide minimum standard for handling personal data in compliance with data protection and privacy laws. It

defines requirements for all operational processes that affect the processing of, or access to, personal data. It also clearly allocates responsibilities and establishes organizational structures. We actively monitor changes to applicable laws and regulations so that we can update our standards on an ongoing basis.

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 April 2018.

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

In 2018, SAP did not experience any significant incidents in processing personal data either on our own behalf or on behalf of our customers that were subject to GDPR or other applicable data protection laws.

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Customers

Approaching Our Customers with Empathy

SAP s purpose is to help the world run better and improve people s lives. We achieve this by providing solutions that help our customers tackle the challenges of today s world to be successful. We can only do this with a sharp focus on our customers needs. We want our customers to see 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 SAP.

To achieve this, SAP has implemented extensive programs to deepen our relationship with customers. Through these efforts, we reach out to our customers to ensure we understand what works well and not so well 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. Our customers are of such importance to SAP, it is only logical that Customer NPS is one of our main KPIs.

Specifically, Customer NPS measures the willingness of our customers to recommend or promote SAP to others. It is derived from ongoing customer surveys that identify, 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. The responses are divided into three groups as follows:

9 or 10: promoters

7 or 8: passives

6 or below: detractors

To derive the Customer NPS, we start with the percentage of promoters and subtract the percentage of detractors. Passives are ignored. 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 NPS methodology. In 2018, after critically reviewing the process of how we contact customers to participate in the survey, we made changes. We implemented a more standardized and more rigorous process to approach customer contacts in a more consistent manner across the company. We believe every customer, rather than only a sample, should have a voice.

To adhere to this, we implemented measures to ultimately ensure all of our customers are invited to give feedback and a random selection of key contacts at each customer is selected to participate in the survey. This increases the quality and representation of the feedback we are receiving and helps us engage in an open dialogue with our customers. We have further reduced the set of criteria for which a customer can be excluded from the survey, designed our Customer NPS survey instrument to best practice standards and with a focus on probing for critical feedback.

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 who rated us 9 or 10 is slightly smaller than the percentage of customers who rated us 6 or below our Customer NPS for 2018 is 5.0 (2017: +17.8). We did not reach our target of +21 to +23 in 2018. This was mainly due to the fact that we have a more rigorous process to ensure we receive open and direct feedback. Below you can find some of the programs we have implemented to address pain points customers share with us in their feedback.

As we implement these customer engagement programs and with continued rigor in our processes, we are targeting a Customer NPS of +1.0 in 2019 and a steady increase in 2020 and beyond.

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

Focusing on Customer Engagement

In addition to quantitative customer feedback such as Customer NPS, we also utilize numerous executive, customer, and product advisory boards and councils. These committees allow SAP to listen to and engage customers for their feedback and guidance relative to our business and technology strategies, solutions, and services. Through these efforts, SAP gains a more detailed understanding of our strategies, road maps, and potential improvements. The long-term objective for each of these efforts is value generation for our customers and SAP alike.

One of the programs we have introduced to support our customer engagement is **Build Customers for Life**. Customers expect us to deliver one lifecycle experience across our portfolio, all while delivering the promise of integration across our portfolio. To turn this objective into action, the program establishes unified post-sales process standards and supporting IT infrastructure across all cloud offerings. In this way, it enables one harmonized customer experience across both digital and direct interaction points with SAP.

Another example is our global **Customer First** initiative, where efforts are underway to improve the way we work and care for our customers by ensuring we provide a consistent, positive, end-to-end experience that helps deliver successful outcomes for them.

Some specific areas where we have received valuable feedback involve:

- Harmonizing our interactions with customers
- Continuing to evolve our portfolio into a seamless Intelligent Enterprise offering
- Further integrating customer experience for our cloud assets in particular

We engage in this process transparently, as we believe transparency leads to accountability. When feedback is honest, actionable, and transparent, we can address it head on and truly improve our customer experience. Further, the impact of measures and improvements is clearly visible. In this way, SAP continues to take measures to ensure customer feedback is incorporated in our business.

Finally, we not only believe this customer focus is good for SAP, but also for our customers. Our commitment to our customer experience is clearly evidenced by our acquisition of Qualtrics. As we integrate Qualtrics into our portfolio, we will not only be embedding this technology into our software, but will also be offering experience management to our customers.

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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. We believe that by running cleaner, greener operations, we can make a difference to our planet. In addition, we aim to enable our customers to reduce their overall carbon footprint through our software.

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

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.

Designed to enable continous improvement and protect the environment, our environmental management system based on the ISO 14001 standard was rolled out to seven additional SAP sites in 2018. The system now covers 55 SAP sites in 30 countries. In 2018, we successfully audited the Walldorf and St. Leon-Rot sites in Germany, thus fulfilling our target for the system to cover operations affecting about 70% of employees globally. Currently, we are also implementing the ISO 50001 energy management system for the Walldorf and St. Leon-Rot sites.

Cutting Carbon Emissions

In 2017, we announced a commitment to making our operations carbon neutral by 2025. This is the next logical step in our long-term greenhouse gas (GHG) avoidance strategy, which also includes an undertaking to reduce GHG emissions to levels of the year 2000 by 2020, which we achieved in 2017. The target includes all direct emissions from running our business as well as a selected subset of indirect emissions from supply chains and services. Furthermore, as a member of the Science-Based Targets initiative, we were the first German company to release a science-based climate target. This target reflects the level of decarbonization required to keep the global temperature increase below two degrees Celsius compared to pre-industrial temperatures. At SAP, this corresponds to an 85% reduction in our 2016 emissions level by 2050, including energy consumption of our products in use at our customers.

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

Total Net Emissions

In addition to our long-term commitment for 2025, we have derived annual targets for our internal operational steering. In 2018, we overachieved our annual target to reduce our emissions to 333 kilotons (kt) of CO_2 by 23 kt. This result stems primarily from compensation with carbon emission offsets. Our focus on carbon emissions has contributed to a cumulative cost avoidance of 272.8 million in the past three years, compared to a business-as-usual scenario based on 2007. We achieved 39% of this cost avoidance in 2018.

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 footprint. Given the increasing data center capacity and an increasing energy consumption, our data centers have become a primary focus of our carbon reduction efforts.

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We have introduced initiatives to drive efficiency and innovation with respect to our buildings, data center operations, and infrastructure. For example, in 2018, one of our main data centers in St. Leon-Rot, Germany, had a very efficient power usage effectiveness (PUE) of 1.36. The PUE is a ratio that describes the efficiency of a data center, with 1.0 being the ideal. In early 2019, SAP will open 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 Gold Standard RECs, which support renewable energy projects that meet robust criteria in terms of environmental integrity, stakeholder inclusivity, and reporting and verification. All of these RECs are 100% EKOenergy label certified, the highest quality energy ecolabel available.

Total Data Center Electricity

Helping Our Customers Run Greener Operations

The vast majority of our overall emissions result from the use of our software. When our customers run SAP software on their hardware and on their premises, the resulting carbon footprint is about 38 times the size of our own net carbon footprint. To address this, we have developed a downstream emissions strategy to help our customers, hardware providers, and others run greener operations. One of the most important ways we help our customers reduce their energy usage and emissions is by managing their SAP systems through cloud services provided by our carbon-neutral green cloud offerings. In addition, the solutions in our portfolio enable our customers to manage their resources, such as electricity, in an efficient manner.

The SAP HANA platform also plays a vital role in helping our customers cut their carbon emissions. By combining the worlds of analytic and transactional data into one real-time, in-memory platform, it can help create much leaner operations, further simplifying the system landscape and reducing energy consumption. 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 combine non-financial and financial data into 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 2018 included the following:

EKOenergy Certification

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

Electric Vehicles

As a result of our business expansion, the number of SAP employees eligible for a company car has increased annually. We want to ensure that the resulting growth in our car fleet does not undo our successes in cutting emissions. To help address this, SAP aims to increase the number of electric vehicles (battery electric vehicles and plug-in hybrid electric vehicles) in our company car fleet from 7% at the end of 2018 to 20% by 2020.

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

Internal Carbon Pricing for Business Flights

In addition to avoiding business flights by investing in virtual collaboration and communication technologies, we invest in carbon emission offsets for air travel in the majority of countries we travel from by charging an internal carbon price. This offset effort resulted in a compensation of 170 kt of CO_2 in 2018.

Investment in Carbon Credits

In 2018, we continued to realize the benefits of our investment in the Livelihoods Fund. Several years ago, we made a commitment to invest 3 million covering a 20-year participation in a fund that supports social causes as well as the sustainability of agricultural and rural communities worldwide. The returns from this unique investment in the Livelihoods Fund consist of high-quality carbon credits. Following the success of this scheme, we will invest in a second Livelihoods Fund in 2019, committing another 3 million over the next 30 years and thus increasing our commitment to sustainable initiatives. In 2018, the carbon credits we received from the first fund helped us to offset our carbon footprint by 35.7 kt.

SAP has pledged to plant five million trees by 2025 in collaboration with various non-governmental organizations. In 2018, we started by investing in an additional 500,000 trees as part of our carbon offsetting initiatives.

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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.4)* to our Consolidated Financial Statements for a more detailed discussion relating to certain of these legal proceedings.

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Description of Property

Our principal office is located in Walldorf, Germany, where we own and occupy approximately 465,000 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 160,000 square meters. In approximately 70 countries worldwide, we occupy roughly 1,870,000 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 and Palo Alto (United States); Ban-galore (India); Sao Leopoldo (Brazil); London (UK); Ra anana (Isra-el), Colorado Springs (United States) 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 430,000 square meters in the region North and Latin America, and approximately 435,000 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 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 2018, we continued various construction projects and started new construction activities in several locations. Except for one new office building in Walldorf, which is partially financed by a promotional loan, we plan to finance all of these projects from operating cash flow. Our most important projects are listed below.

Construction Projects

millions					
Country	**Location of Facility**	**Short Description**	**Estimated Total Cost**	**Costs Incurred as at 12/31/2018**	**Estimated Completion Date**
Germany	Walldorf	New office building for approx. 450 employees	38	27	January 2019
Germany	St. Leon-Rot	New office building for approx. 450 employees	38	24	April 2019
Germany	Walldorf	New office building for approx. 700 employees	74	66	February 2019
Germany	Walldorf	New data center phase 2	52	34	July 2019
Brazil	Sao Leopoldo	New office building for approx. 700 employees	33	2	December 2020
Bulgaria	Sofia	New office building for approx. 1.200 employees	46	0	September 2021
Germany	Munich	New office building for approx. 850 employees	100	0	December 2021
India	Bangalore	New office building for approx. 4,000 employees	97	13	December 2022

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

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Principal Investments and Divestitures for the Last Three Years

Our principal investments for property, plant, and equipment (other than from business combinations) amounted to 1,302 million in 2018 (2017: 1,196 million; 2016: 933 million). Principal investments in 2018 for property, plant, and equipment increased compared to 2017 primarily due to replacement and purchase of IT infrastructure (data centers, etc.) and the construction of new buildings. The increase from 2016 to 2017 was mainly due to replacement and purchase of IT infrastructure (data centers, etc.).

Our investments for intangible assets such as acquired technologies and customer relationships amounted to 791 million in 2018 compared to 227 million in 2017 (2016: 158 million). Our investments allocated to goodwill increased to 1.609 million in 2018 from 205 million in 2017 (2016: 57 million). The increase in 2018 mainly results from the Callidus acquisition *(see Note (D.1)* for additional information). The respective increases in 2017 are due to one acquisition which added more goodwill than the several small acquisitions in 2016. 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 2018;
- our outlook for 2018 compared to our 2018 actual performance (non-IFRS);
- a discussion of our operating results for 2018 compared to 2017 and for 2017 compared to 2016;
- the factors that we believe will impact our performance in 2019; 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

In 2018, the global economy remained resilient and continued to expand at a steady pace, but at the same time, it showed signs of moderating momentum. That is what the European Central Bank (ECB) reported in its December 2018 Economic Bulletin1. Overall, the services sector performed better in 2018 than manufacturing, and advanced economies better than emerging markets, due to more accommodative financial conditions. According to the ECB, economic activity weakened most substantially in those emerging markets that had been subject to financial turmoil in the summer, including Argentina and Turkey.

In the Europe, Middle East, and Africa (EMEA) region, euro area real GDP increased on a broad basis and remained resilient overall, but on a lower level than the ECB had expected in the course of the year. This was mostly due to a diminishing demand for goods exports and temporary sector-specific developments (for example, car production in Germany). Meanwhile, services exports increased slightly, and the construction business showed robust growth. In addition, a strong labor market supported private consumption, while business investment benefitted from domestic demand, favourable financing conditions, and improving balance sheets.

As for the Americas region, economic activity rebounded in the United States in 2018 and remained resilient. However, trade tensions with China escalated when both countries introduced tariffs on each other s exports in the second half of the year.

The Asia Pacific Japan (APJ) region in 2018 saw a rebound in economic activity but the end of fiscal stimulus in Japan. As a result, the Japanese economy even contracted during the third quarter, due also to temporary factors related to natural disasters. At the same time, economic activity in China remained strong, despite the trade tensions with the United States. According to the ECB, robust exports, solid consumption, easing financial conditions, and a supportive government policy strengthened the Chinese economy.

The IT Market

Digital transformation was well on its way in 2018, elaborates the U.S.-based market research firm International Data Corporation (IDC) in its most recent publications3. This is what we described in our previous annual and half-year reports as well. IDC research shows that 46% of companies finished their experimentation stage in 2018 and opted for an integrated digital strategy and architecture, not just digitally-enabled products and services. Thus, in nearly every industry and in organizations of every size, digital transformation helped create new sources of revenue through higher competitiveness, with a huge impact on the global economy.

According to IDC, the Internet of Things (IoT) was a major topic again in 2018, as it helped businesses run more efficiently, gain insight into business processes, and make real-time decisions. Worldwide spending on IoT amounted to US$725.4 billion (+14.9%) in 2018, US$159.5 billion (+18.8%) of which in the EMEA region, US$212.9 billion (+15.0%) in the Americas region, and US$353.0 billion (+13.1%) in the APJ region. The largest portion of these spendings was in the device category, followed by application software, platform, and ongoing services5.

In 2018, reports IDC, a further shift towards public cloud platforms took place and made these platforms primary sources for fundamental innovation in the application and service world, such as blockchain, data

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management, mobile, and security2. However, it was mostly the need for machine learning and advanced analytics, whose workloads require the scalability and elasticity of cloud computing, that drove adoption of these systems into the cloud4.

ERP rationalization and modernization were another focus in 2018, with the aim to develop new sources of revenue through data management monetization3. Artificial intelligence (AI) became a part of numerous technologies and solutions and reached more devices, apps, and services than before. IDC calculates that enterprises using this technology made 21% of their revenue with it in 2018.

Sources:

1) European Central Bank, Economic Bulletin, Issue 8/2018, Publication Date: December 27, 2018 (https://www.ecb.europa.eu/pub/pdf/ecbu/eb201808.en.pdf)

2) IDC FutureScape: Worldwide IT Industry 2019 Predictions, Doc #US44403818, October 2018

3) IDC FutureScape: Worldwide Digital Transformation 2019 Predictions, Doc #US43647118, October 2018

4) IDC FutureScape: Worldwide Intelligent ERP 2019 Predictions, Doc #US43262918, October 2018

5) IDC Market Forecast: Worldwide Internet of Things Forecast, 2018 2022, September 2018

Impact on SAP

The velocity of the global digital transformation increased further and SAP continued to significantly benefit from this mega trend. The strong momentum across our entire portfolio and in all regions was remarkable, and the share of our more predictable revenue reached a new high.

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Performance Against Our Outlook for 2018 (Non-IFRS)

As in previous years, our 2018 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 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 2018 (Non-IFRS)

At the beginning of 2018, we projected that our 2018 non-IFRS cloud subscriptions and support revenue would be between 4.8 billion and 5.0 billion at constant currencies (2017: 3.77 billion). This range represents a growth rate of 27% to 33% at constant currencies. The Company expected full-year 2018 non-IFRS cloud and software revenue to be in a range of 20.7 billion to 21.1 billion at constant currencies (2017: 19.55 billion). This range represents a growth rate of 6% to 8% at constant currencies. In addition, we aimed for non-IFRS total revenue in a range of 24.6 billion to 25.1 billion at constant currencies (2017: 23.46 billion). This range represents a growth rate of 5% to 7% at constant currencies. We also projected our full-year non-IFRS operating profit for 2018 would end between 7.3 billion and 7.5 billion (2017: 6.77 billion) at constant currencies. This range represents a growth rate of 8% to 11% at constant currencies. We expected a full-year 2018 effective tax rate (IFRS and non-IFRS) of 27.0% to 28.0% (2017: 19.5% (IFRS) and 22.8% (non-IFRS)).

On April 5, 2018, SAP completed the acquisition of Callidus Software Inc. (CallidusCloud). In light of this acquisition and our strong operating profit in the first quarter, we adjusted our outlook in April 2018 for all parameters. We then expected non-IFRS cloud subscriptions and support revenue to reach a range between 4.95 billion and 5.15 billion at constant currencies. We also raised our forecast for non-IFRS cloud and software revenue to a range of 20.85 billion to 21.25 billion at constant currencies. We expected our non-IFRS total revenue to end between 24.8 billion and 25.3 billion at constant currencies. We also adjusted our outlook for non-IFRS operating profit for 2018 upward to range between 7.35 billion and 7.5 billion at constant currencies.

In July 2018, based on the strong momentum in our cloud business, we raised our forecast for 2018 non-IFRS cloud subscriptions and support revenue once more, to a range of 5.05 billion to 5.2 billion at constant currencies. We consequently also adjusted our outlook for the other parameters, as follows: The forecast for non-IFRS cloud and software revenue was increased to a range of 21.025 billion to 21.25 billion at constant currencies, the forecast for non-IFRS total revenue was increased to a range of 24.975 billion to 25.3 billion at constant currencies, and the forecast for non-IFRS operating profit was increased to a range of 7.4 billion to 7.5 billion at constant currencies. We continued to expect a full-year 2018 effective tax rate (IFRS and non-IFRS) of 27.0% to 28.0%, but now expected to reach the upper end of these ranges.

In October 2018, based on the continued strong momentum in our cloud business, the Company raised its outlook a third time for non-IFRS cloud subscriptions and support revenue, to range between 5.15 billion and 5.25 billion at constant currencies. This range represents a growth rate of 36.5% to 39% at constant currencies. Consequently, we also

raised the forecast for non-IFRS cloud and software revenue to a range of 21.15 billion to 21.35 billion at constant currencies. This range represents a growth rate of 8% to 9% at constant currencies. We expected our non-IFRS total revenue to end between 25.2 billion and 25.5 billion at constant currencies. This range represents a growth rate of 7.5% to 8.5% at constant currencies. We also adjusted our outlook for non-IFRS operating profit for 2018 upward to range between 7.425 billion and 7.525 billion at constant currencies. This range represents a growth rate of 9.5% to 11% at constant currencies. We continued to expect a full-year 2018 effective tax rate (IFRS) at the upper end of the range of 27.0% to 28.0%, but now expected an effective tax rate (non-IFRS) of 26.5% to 27.5%.

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2018 Actual Performance Compared to Outlook (Non-IFRS)

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

Comparison of Outlook and Results for 2018

	Outlook for 2018 (as reported in Integrated Report 2017)	Revised Outlook for 2018 (Q1 Quarterly Statement)	Revised Outlook for 2018 (Q2 Quarterly Statement)	Revised Outlook for 2018 (Q3 Quarterly Statement)	**Results for 2018**
Cloud subscriptions and support revenue (non-IFRS, at constant currencies)	4.80 billion to 5.00 billion	4.95 billion to 5.15 billion	5.05 billion to 5.20 billion	5.15 billion to 5.25 billion	5.21 billion
Cloud and software revenue (non-IFRS, at constant currencies)	20.70 billion to 21.10 billion	20.85 billion to 21.25 billion	21.025 billion to 21.25 billion	21.15 billion to 21.35 billion	21.58 billion
Total revenue (non-IFRS, at constant currencies)	24.60 billion to 25.10 billion	24.80 billion to 25.30 billion	24.975 billion to 25.30 billion	25.20 billion to 25.50 billion	25.96 billion
Operating profit (non-IFRS, at constant currencies)	7.3 billion to 7.50 billion	7.35 billion to 7.50 billion	7.40 billion to 7.50 billion	7.425 billion to 7.525 billion	7.48 billion
Effective tax rate (IFRS)	27.0% to 28.0%		27.0% to 28.0%*		27.0%
Effective tax rate (non-IFRS)	27.0% to 28.0%		27.0% to 28.0%*	26.5% to 27.5%	26.3%

* In the 2018 Half-Year Report, we confirmed our previous outlook, but now expected to reach the upper end of these ranges.

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 2018 continued to show a strong willingness to invest in our solutions and services.

At constant currencies, non-IFRS cloud subscriptions and support revenue grew from 3.77 billion in 2017 to 5.21 billion in 2018 and therefore ended in our guidance range of 5.15 billion to 5.25 billion. That represents an increase of 38% on a constant currency basis.

Our new cloud bookings, which are one of our measures for cloud-related sales success and for future cloud subscriptions revenue, increased in 2018 to 1.81 billion (2017: 1.45 billion). This is an increase of 25% (28% on a constant currency basis). In addition to this strong growth, our cloud backlog (unbilled future revenue based on existing cloud contracts) reached 10.1 billion (2017: 7.5 billion). This is an increase of 35% (30% on a constant currency basis). We expect this committed business to contribute to our cloud subscriptions and support growth in 2019 and beyond.

Besides the strong cloud business, our traditional on-premise business again achieved a solid result on a constant currency basis in 2018, at the same strong level as the year before. On a constant currency basis, non-IFRS cloud and software revenue grew from 19.55 billion in 2017 to 21.58 billion in 2018. That represents an increase of 10% on a constant currency basis. This revenue thus overachieved the forecast for 2018, which was raised in April, July, and October.

Our total revenue (non-IFRS) on a constant currency basis rose 11% in 2018 to 25.96 billion (2017: 23.46 billion) and therefore beat our repeatedly increased outlook.

Operating expenses (non-IFRS) in 2018 on a constant currency basis were 18.48 billion (2017: 16.69 billion), an increase of 11%.

Our expense base in 2018 continued to be impacted by our transformation to a fast-growing cloud business. In our initial outlook for 2018, we expected the cloud subscriptions and support gross margin to be at least stable or to increase slightly compared to 2017. The cloud subscriptions gross margin for 2018 was 63%, an increase of 0.7pp 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 subscriptions and support gross margins on our various cloud offerings developed positively in 2018:

Our cloud subscriptions gross margin (non-IFRS) in our Business Network business increased further by 1.1pp (on a constant currency basis), resulting in 78% for 2018, already close to our long-term ambition of 80% for 2020. This excellent result is attributable to the continued positive gross margin development within the SAP Ariba and SAP Concur portfolio.

The cloud subscriptions gross margin (non-IFRS) on our infrastructure as a service (IaaS) cloud offering continued to develop well in 2018. Our cloud subscription gross margin (non-IFRS) was 13% in 2018, which reflects an improvement of 6.5pp on a constant currency basis.

Profitability in our software as a service/platform as a service (SaaS/PaaS) cloud offering was 60% at constant currencies (non-IFRS) for 2018. 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 a further 2.4pp compared to our long-term ambition of 70%.

We saw efficiency improvements in both our cloud and traditional on-premise business, which drove continued operating profit expansion.

Non-IFRS operating profit in 2018 was 7.48 billion on a constant currency basis (2017: 6.77 billion), reflecting an increase of 10%. As a result, we were able to surpass our excellent results from 2017, 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 7,955 full-time equivalents (thereof 5,912 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 7.48 billion was above the midpoint of our outlook range raised in October (7.425 billion to 7.525 billion).

We achieved an effective tax rate (IFRS) of 27.0% and an effective tax rate (non-IFRS) of 26.3%, which is at the lower end of the range of 27.0% to

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28.0% (IFRS) and below the adjusted outlook of 26.5% to 27.5% (non-IFRS). This mainly resulted from taxes for prior years.

Our constant currency non-IFRS revenues and non-IFRS results in 2018 were driven by our positive business development as well as the following factors:

The adoption of the new revenue recognition standard IFRS 15 at the beginning of fiscal year 2018 took place without adjusting prior-year figures. Revenue was 0.16 billion higher (non-IFRS at constant currencies) than it would have been under the previous revenue recognition standard, while operating expenses (non-IFRS at constant currencies) were 0.25 billion lower after applying the new standard. For more information about the adoption of IFRS 15, see the Notes to the Consolidated Financial Statements, *Note (A.5)*.

Revenue and earnings from our acquisitions are reflected in our results as of the respective acquisition date. Callidus Software Inc. (CallidusCloud), as our largest acquisition, had a positive impact of 0.16 billion in cloud subscriptions and support revenue (non-IFRS at constant currencies) and a positive impact of 0.05 billion on operating profit at constant currencies. For more information about our acquisitions in fiscal year 2018, see the Notes to the Consolidated Financial Statement, *Note (D.1)*.

Besides the financial recognition of hyperinflation in Argentina and Venezuela, our non-IFRS numbers at constant currencies are further impacted by the hyperinflation due to the mechanics of our constant currency adjustments: By applying prior-year currency exchange rates to our current-period numbers, these numbers are adjusted for currency exchange rate changes. In contrast, the 2018 constant currency numbers are not adjusted for the respective change in inflation. This benefitted the non-IFRS software revenue by 0.15 billion at constant currencies, the non-IFRS software support revenue by 0.15 billion at constant currencies, and our non-IFRS total revenue by 0.46 billion at constant currencies. In contrast, the operating expenses (non-IFRS at constant currencies) experienced a negative impact of 0.34 billion, resulting in an increase in our non-IFRS operating profit (non-IFRS) of 0.12 billion at constant currencies. For more information about currency conversion and hyperinflation, see the Notes to the Consolidated Financial Statements, *Note (IN.1)*.

Operating Results (IFRS)

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

Our 2018 Results Compared to Our 2017 Results (IFRS)

Revenue

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 subscriptions and support 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%).

Revenue by Revenue Type

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

Cloud and Software Revenue

Revenue from cloud subscriptions and support refers to the income earned from contracts that permit the customer to access specific software solutions hosted by SAP during the term of its contract with SAP. Software revenue results from the fees earned from selling or licensing software

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

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

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Cloud and Software

Cloud subscriptions and support revenue increased from 3,769 million in 2017 to 4,993 million in 2018.

Cloud Subscriptions and Support

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 10,908 million in 2017 to 10,981 million in 2018. The SAP Enterprise Support offering was the largest contributor to our support revenue. The 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 subscriptions and support revenue and our software support revenue. Compared to the previous year, our more predictable revenue increased from 14,677 million in 2017 to 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%).

More Predictable Revenue

Services Revenue

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

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 141 million in consulting revenue and premium support revenue from 3,215 million in 2017 to 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 34 million, or 5%, to 731 million in 2018 (2017: 697 million).

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Revenue by Region

(based on customer location)

EMEA Region

In 2018, the EMEA region generated 11,104 million in revenue (2017: 10,415 million), which was 45% of total revenue (2017: 44%). This represents a year-over-year increase of 7%. Revenue in Germany increased 9% to 3,658 million (2017: 3,352 million). Germany contributed 33% (2017: 32%) 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 9,339 million (2017: 8,759 million). That was 84% of all revenue from the region (2017: 84%).

EMEA: Cloud and Software Revenue

Cloud subscriptions 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 9,713 million; revenue generated in the United States increased 6% to 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 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 7,973 million (2017: 7,666 million). That was 82% of all revenue from the region (2017: 82%).

Americas: Cloud and Software Revenue

Cloud subscriptions 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 3,891 million. In Japan, revenue increased 9% to 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 3,310 million in 2018 (2017: 3,124 million). That was 85% of all revenue from the region (2017: 84%).

APJ: Cloud and Software Revenue

Cloud subscriptions revenue in the APJ region rose 46% to 611 million in 2018 (2017: 419 million). Software licenses and software support

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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 24,708 million (2017: 23,461 million), representing an increase of 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 subscriptions and support 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 5,703 million (2017: 4,877 million).

Operating Profit

Operating Margin

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 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 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 subscriptions and support 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 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 Consolidated Financial Statements, *Note IN.1*.

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, customer support costs, amortization expenses relating to intangibles, and license fees and commissions paid to third parties for databases and the other complementary third-party products sublicensed by us to our customers.

In 2018, the cost of cloud and software increased 7% to 4,160 million (2017: 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 subscriptions and support 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 subscriptions and support revenue of 32% to 4,993 million (2017: 3,769 million) with a lower increase in corresponding costs for cloud subscriptions and support of 25% to 2,068 million (2017: 1,660 million).

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 subscriptions and support 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.

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We were able to increase our service revenue by 4% year over year to 4,086 million in 2018 (2017: 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 3,302 million (2017: 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

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 9% increase on average for the year in our R&D headcount, our R&D expense in-creased by 8% to 3,624 million in 2018 from 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

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 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 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

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

General and administration expense increased 2% from 1,075 million in 2017 to 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

At the end of 2018, SAP had three reportable segments: the Applications, Technology & Services segment, the SAP Business Network segment, and the Customer Experience segment. 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.

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Applications, Technology & Services Segment

millions, unless otherwise stated

(Non-IFRS)		**2018**	2017	Δ in %	Δ in %
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	1,829	1,894	1,403	30	35
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	58	57	59	2pp	2pp
Cloud subscriptions and support revenue IaaS2)	488	506	328	49	54
Cloud subscriptions and support gross margin IaaS2) (in %)	13	14	7	6pp	7pp
Cloud subscriptions and support revenue	2,317	2,400	1,732	34	39
Cloud subscriptions and support gross margin (in %)	48	48	49	1pp	2pp
Segment revenue	20,806	21,892	20,218	3	8
Gross margin (in %)	73	73	74	1pp	1pp
Segment profit	8,746	9,183	8,478	3	8
Segment margin (in %)	42	42	42	0pp	0pp

1) Software as a service/platform as a service
2) Infrastructure as a service

The Applications, Technology & Services segment recorded a strong increase in cloud subscriptions and support revenue in 2018. As a consequence of strong demand in our digital core offering and database and data management solutions, and the growing success of our SAP Cloud Platform in the market, SaaS/PaaS revenue increased 30% (35% 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 10,968 million. Including software licenses revenue, which remained slightly below the prior-year level due to the shift toward cloud subscriptions and support revenue (0% at constant currencies), we achieved a total software licenses and support revenue of 15,201 million in 2018.

Overall, the revenue share of more predictable revenue streams in this segment increased 1.4pp from 62.4% in 2017 to 63.9% in 2018.

The segment s cost of revenue during the same period increased 7% (14% at constant currencies) to 5,625 million (2017: 5,262 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 primarily to the SaaS/PaaS business, whose margin consequently declined 2pp (2pp at constant currencies) compared to the year before. These costs were partially offset by our IaaS business, whose increasing level of maturity achieved significant increases in efficiency. It ended the fiscal year with a margin growth of 6pp (7pp at constant currencies).

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SAP Business Network Segment

millions, unless otherwise stated	**2018** Actual	**2018** Constant	2017 Actual	r in % Actual	r in % Constant
(Non-IFRS)	Currency	Currency	Currency	Currency	Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	2,178	2,265	1,840	18	23
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	78	78	77	1pp	1pp
Cloud subscriptions and support revenue	2,178	2,265	1,840	18	23
Cloud subscriptions and support gross margin (in %)	78	78	77	1pp	1pp
Segment revenue	2,629	2,733	2,261	16	21
Gross margin (in %)	69	69	68	1pp	1pp
Segment profit	531	545	388	37	40
Segment margin (in %)	20	20	17	3pp	3pp

1) Software as a service/platform as a service

The SAP Business Network segment increased its cloud subscriptions and support gross margin in 2018 by 1pp again, to 78%. 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 SAP Business Network segment achieved a segment gross margin of 69% in 2018 (2017: 68%), an increase of 1pp (1pp at constant currencies).

Customer Experience Segment

millions, unless otherwise stated	**2018** Actual	**2018** Constant	2017 Actual	r in % Actual	r in % Constant
(Non-IFRS)	Currency	Currency	Currency	Currency	Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	528	539	200	>100	>100
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	67	67	59	7pp	8pp
Cloud subscriptions and support revenue	528	539	200	>100	>100
Cloud subscriptions and support gross margin (in %)	67	67	59	7pp	8pp
Segment revenue	951	970	643	48	51
Gross margin (in %)	79	79	80	1pp	1pp
Segment profit	138	139	85	62	63
Segment margin (in %)	14	14	13	1pp	1pp

1) Software as a service/platform as a service

The new Customer Experience segment established in 2018 recorded strong growth in total revenue of 48% (51% at constant currencies). This positive development was mainly influenced by the strong growth in our cloud subscriptions and support revenue of 164% (170% at constant currencies). The acquisition of Callidus Software Inc. and SAP s cloud strategy resulted in an increasing cloud revenue share compared to software licenses and support revenue. Cloud subscription and support gross margin increased

7pp (8pp at constant currencies) favored by Callidus contributing positively with a cloud subscription and support gross margin of 80%. However, changes in internal allocations of cloud delivery costs led to an increase in the cost of cloud subscription and support compared to 2017. Since its acquisition in the second quarter of 2018, Callidus contributed positively to the segment s cloud subscriptions and support revenue by 156 million and to the segment s operating profit by 53 million.

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Reconciliation of Cloud Subscription Revenues and Margins

millions, unless otherwise stated			**2018**	2017	r in %	r in %
(Non-IFRS)		Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	SAP Business Network segment	2,178	2,265	1,840	18	23
	Other3)	2,361	2,434	1,604	47	52
	Total	4,539	4,700	3,443	32	36
Cloud subscriptions and support revenue IaaS2)		488	506	328	49	54
Cloud subscriptions and support revenue		**5,027**	**5,205**	**3,771**	**33**	**38**
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	SAP Business Network segment	78	78	77	1pp	1pp
	Other3)	60	59	57	3pp	2pp
	Total	68	68	67	1pp	1pp
Cloud subscriptions and support gross margin IaaS2) (in %)		13	14	7	6pp	7pp
Cloud subscriptions and support gross margin (in %)		**63**	**63**	**62**	**1pp**	**1pp**

1) Software as a service/platform as a service

2) Infrastructure as a service

3) Other includes Applications, Technology & Services segment, Customer Experience segment, and miscellaneous. The individual revenue and margin numbers for the Applications, Technology & Services segment and the Customer Experience segment are disclosed on the previous pages.

Financial Income, Net

Financial income, net, changed to 47 million (2017188 million). Our finance income was 371 million (2017: 476 million) and our finance costs were 418 million (2017: 288 million).

Finance income mainly consists of gains from disposal of equity securities and IFRS 9-related fair value adjustments totaling 227 million (2017: 382 million), interest income from loans and receivables, and other financial assets (cash, cash equivalents, and current investments) totaling 62 million (2017: 49 million), and income from derivatives totaling 77 million (2017: 44 million).

Finance costs mainly consist of interest expense on financial liabilities amounting to 106 million (2017: 89 million), negative effects from derivatives amounting to 206 million (2017: 116 million), and losses from disposal or IFRS 9-related fair value adjustments of Sapphire Ventures investments totaling 44 million (2017: 27 thousands). For more information about financing instruments, see the Notes to the Consolidated Financial Statements, *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 intra-group 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 Notes to the Consolidated Financial Statements, *Note (C.5)*.

Our 2017 Results Compared to Our 2016 Results (IFRS)

Total Revenue

Total revenue increased from 22,062 million in 2016 to 23,461 million in 2017, representing an increase of 1,399 million or 6%. This increase reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects. The growth in revenue resulted primarily from a 776 million increase in cloud subscriptions and support revenue. Furthermore, software support revenue rose 337 million. This growth is a result of continuously high software license revenue, which increased 13 million in 2017. Cloud and software revenue climbed to 19,549 million in 2017, an increase of 6%. Cloud and software revenue represented 83% of total revenue in 2017 (2016: 84%). Service revenue increased 8% from 3,639 million in 2016 to 3,912 million in 2017, which was 17% of total revenue. For more information about our regional performance, see the *Revenue by Region* section below.

Cloud and Software Revenue

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

Cloud and software revenue grew from 18,424 million in 2016 to 19,549 million in 2017, an increase of 6%. This reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects. Cloud subscriptions and support revenue increased from 2,993

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million in 2016 to 3,769 million in 2017. Despite a combination of a partly challenging macroeconomic and political environment and the accelerating industry shift to the cloud, we achieved a 12 million increase in software revenue. This increase, from 4,859 million in 2016 to 4,872 million in 2017, reflects a 3% increase from changes in volumes and prices and a 2% decrease from currency effects. Our customer base continued to expand in 2017. Based on the number of contracts concluded, 15% of the orders we received for software in 2017 (2016: 16%) were from new customers. The total value of software orders received increased 1% year over year. The total number of contracts signed for new software increased 3% to 59,147 (2016: 57,291 contracts), with an average order value of 89 thousand in 2017 (2016: 91 thousand). In 2017, 30% (2016: 29%) of our software order entry resulted from deals worth more than 5 million, while 40% (2016: 38%) resulted from deals worth less than 1 million.

Our stable customer base, the continued demand for our software throughout 2017 and the previous years, and the continued interest in our support offerings resulted in an increase in support revenue from 10,571 million in 2016 to 10,908 million in 2017. The SAP Enterprise Support offering was the largest contributor to our support revenue. The 337 million, or 3%, growth in support revenue reflects a 4% increase from changes in volumes and prices and a 1% decrease from currency effects. This growth is primarily attributable to SAP Product Support for Large Enterprises and SAP Enterprise Support. The acceptance rate for SAP Enterprise Support among new customers remained very high in 2017 at 99% (2016: 100%).

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

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

Services Revenue

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

Services revenue increased 273 million, or 8%, from 3,639 million in 2016 to 3,912 million in 2017. This increase reflects an 8% increase from changes in volumes and prices and a 1% decrease from currency effects.

Solid market demand for service projects led to a 12% increase of 332 million in consulting revenue and premium support revenue from 2,883 million in 2016 to 3,215 million in 2017. This growth reflects a 12% increase from changes in volumes and prices and a 1% decrease from currency effects. Consulting and premium support revenue contributed 82% of total service revenue (2016: 79%). Consulting and premium support revenue contributed 14% of total revenue in 2017 (2016: 13%).

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

Revenue by Region

We break our operations down into three regions: the Europe, Middle East, and Africa (EMEA) region, the Americas region, and the Asia Pacific Japan (APJ) region. We allocate revenue amounts to each region based on where the customer is located. For more information about revenue by geographic region, see the 2017 Annual Report on Form 20-F, Part III, Notes to the Consolidated Financial Statement, Note (28).

EMEA Region

In 2017, the EMEA region generated 10,415 million in revenue (2016: 9,755 million), which was 44% of total revenue (2016: 44%). This represents a year-over-year increase of 7%. Revenue in Germany increased 10% to 3,352 million in 2017 (2016: 3,034 million). Germany contributed 32% (2016: 31%) of all EMEA region revenue. The remaining revenue in the EMEA region was primarily generated in the United Kingdom, France, Switzerland, the Netherlands, and Italy. Cloud and software revenue generated in the EMEA region totaled 8,759 million (2016: 8,192 million). That was 84% of all revenue from the region (2016: 84%). Cloud subscriptions revenue in the EMEA region rose 46% to 1,029 million in 2017 (2016: 703 million). This increase reflects a 48% increase from changes in volumes and prices and a 2% decrease from currency effects. Software licenses and software support revenue rose 3% to 7,731 million in 2017 (2016: 7,489 million). This growth reflects a 3% increase from changes in volumes and prices and a currency effect of 0%.

Americas Region

In 2017, 40% of our total revenue was generated in the Americas region (2016: 40%). Total revenue in the Americas region increased 5% to 9,347 million; revenue generated in the United States increased 4% to 7,436 million. The revenue growth in the United States reflects a 6% increase from changes in volumes and prices and a negative currency effect of 2%. The United States contributed 80% (2016: 80%) of all revenue generated in the Americas region. In the remaining countries of the Americas region, revenue increased 8% to 1,911 million. This increase reflects a 9% increase from changes in volumes and prices and a 1% decrease from currency effects. Revenue in the remaining countries of the Americas region was generated primarily in Canada, Brazil, and Mexico. Cloud and software revenue generated in the Americas region totaled 7,666 million (2016: 7,366 million). That was 82% of all revenue from the region (2016: 82%). Cloud subscriptions revenue in the Americas region rose 16% to 2,321 million in 2017 (2016: 2,000 million); this includes a negative currency effect of 2%. Software licenses and software support revenue was 5,345 million in 2017 (2016: 5,366 million).

APJ Region

In 2017, 16% (2016: 15%) of our total revenue was generated in the APJ region. Total revenue in the APJ region increased 10% to 3,699 million. This growth reflects a 12% increase from changes in volumes and prices and a 2% decrease from currency effects. In Japan, revenue increased 7% to 885 million. Revenue from Japan was 24% (2016: 24%) of all revenue generated in the APJ region. The revenue growth in Japan was attributable to a 13% increase from changes in volumes and prices and a 6% decrease from currency effects. In the remaining countries of the APJ region, revenue increased 10%. Revenue in the remaining countries of the APJ region was generated primarily in Australia, India, and China. Cloud and software revenue in the APJ region totaled 3,124 million in 2017 (2016: 2,865 million). That was 84% of all revenue from the region (2016: 85%). Cloud subscriptions revenue in the APJ region rose 45% to 419 million in 2017 (2016: 290 million). This increase reflects a 47% increase from changes in volumes and prices and a 2% decrease from currency effects.

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Software licenses and software support revenue rose 5% to 2,705 million in 2017 (2016: 2,575 million). This increase reflects an 8% increase from changes in volumes and prices and a 3% decrease from currency effects.

Operating Profit and Operating Margin

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

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

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

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

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

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

Cost of Cloud and Software

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

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

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

subscriptions and support revenue.

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

Cost of Services

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

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

Research and Development Expense

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

Due to growing personnel costs driven by a 10% increase in our yearly average R&D headcount, our R&D expense increased by 10% to 3,352 million in 2017 from 3,044 million in 2016. R&D expense as a percentage of total revenue thus increased to 14.3% in 2017 (2016: 13.8%). For more information, see the Products, Research & Development, and Services section of our 2017 Annual Report on Form 20-F.

Sales and Marketing Expense

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

Our sales and marketing expense rose 11% from 6,265 million in 2016 to 6,924 million in 2017. The increase was mainly the result of greater personnel costs as we expanded our global sales force, and of increased expenditure for bonus payments prompted by the strong revenue growth. The ratio of sales and marketing expense to total revenue, expressed as a percentage, increased to 29.5% year over year (2016: 28.4%), an increase of 1.1pp.

General and Administration Expense

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

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

Segment Information

The segment information below for 2017 and 2016 is presented based on the reportable segments Applications, Technology & Services, SAP Business Network, and Customer Experience.

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.

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Applications, Technology & Services Segment

millions, unless otherwise stated (Non-IFRS)	**2017** Actual Currency	**2017** Constant Currency	2016 Actual Currency	r in % Actual Currency	r in % Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	1,403	1,423	1,074	31	33
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	59	59	62	3pp	3pp
Cloud subscriptions and support revenue IaaS2)	328	334	206	59	62
Cloud subscriptions and support gross margin IaaS2) (in %)	7	8	9	16pp	17pp
Cloud subscriptions and support revenue	1,732	1,758	1,280	35	37
Cloud subscriptions and support gross margin (in %)	49	49	51	1pp	1pp
Segment revenue	20,218	20,465	19,211	5	7
Gross margin (in %)	74	74	74	0pp	0pp
Segment profit	8,478	8,616	8,335	2	3
Segment margin (in %)	42	42	43	1pp	1pp

1) Software as a service/platform as a service

2) Infrastructure as a service

The Applications, Technology & Services segment recorded a strong increase in cloud subscriptions and support revenue in 2017. SaaS/PaaS revenue increased 31% (33% at constant currencies).

We were able to increase our software support revenue again in 2017. It rose 3% (4% at constant currencies) to 10,890 million. Including software licenses revenue, which likewise increased year over year (4% at constant currencies), we achieved a total software licenses and support revenue of 15,325 million in 2017.

Overall, the revenue share of more predictable revenue streams in this segment increased 0.9pp from 61.5% in 2016 to 62.4% in 2017.

The segment s cost of revenue during the same period increased 7% (8% at constant currencies) to 5,262 million (2016: 4,926 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 primarily to the SaaS/PaaS business, whose margin consequently declined 3pp (3pp at constant currencies) compared to the year before. These costs were partially offset by our IaaS business, whose increasing level of maturity achieved significant increases in efficiency. It ended the fiscal year with a margin growth of 16pp (17pp at constant currencies).

SAP Business Network Segment

millions, unless otherwise stated (Non-IFRS)	**2017** Actual Currency	**2017** Constant Currency	2016 Actual Currency	r in % Actual Currency	r in % Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	1,840	1,870	1,595	15	17
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	77	77	76	1pp	1pp
Cloud subscriptions and support revenue	1,840	1,870	1,595	15	17
Cloud subscriptions and support gross margin (in %)	77	77	76	1pp	1pp
Segment revenue	2,261	2,300	1,925	17	19
Gross margin (in %)	68	68	67	1pp	1pp
Segment profit	388	397	340	14	17
Segment margin (in %)	17	17	18	1pp	0pp

1) Software as a service/platform as a service

The SAP Business Network segment increased its cloud subscriptions and support gross margin again in 2017, by 1pp to 77%. The segment s cost of revenue increased 15% in 2017 (17% at constant currencies) to 725 million (2016: 632 million). The segment revenue increased by 17% (19% at constant currencies) to 2,261 million. As a result, the SAP Business Network segment achieved a segment gross profit of 1,536 million in 2017 (2016: 1,293 million), an increase of 19% (21% at constant currencies).

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Customer Experience Segment

millions, unless otherwise stated (Non-IFRS)		**2017**	2016	Δ in %	Δ in %
	Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	200	203	119	67	70
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	59	60	75	15pp	15pp
Cloud subscriptions and support revenue	200	203	119	67	70
Cloud subscriptions and support gross margin (in %)	59	60	75	15pp	15pp
Segment revenue	643	654	637	1	3
Gross margin (in %)	80	81	87	6pp	6pp
Segment profit	85	90	164	48	45
Segment margin (in %)	13	14	26	13pp	12pp

1) Software as a service/platform as a service

If applying the new Customer Experience segment structure established in 2018 to prior years, the segment improved its growth in the cloud to 200 million in 2017 (119 million in 2016). This represents a cloud revenue growth of 67% (70% at constant currencies). The positive development, however, had negative consequences on our traditional software license revenue, which declined 15% (13% at constant currencies). Overall, we were

able to increase our segment revenue by 1% (3% at constant currencies). Cost of cloud subscription and support grew disproportionally to our cloud subscription and support revenue leading to a drop of 15pp (15pp at constant currencies) in the cloud subscription and support gross margin. Accompanied by increased cost of sales and marketing this impacted negatively both our segment profit and segment margin.

Reconciliation of Cloud Subscription Revenues and Margins

millions, unless otherwise stated (Non-IFRS)			**2017**	2016	Δ in %	Δ in %
		Actual Currency	Constant Currency	Actual Currency	Actual Currency	Constant Currency
Cloud subscriptions and support revenue SaaS/PaaS1)	SAP Business Network segment	1,840	1,870	1,595	15	17
	Other3)	1,604	1,627	1,194	34	36
	Total	3,443	3,497	2,789	23	25
Cloud subscriptions and support revenue IaaS2)		328	334	206	59	62
Cloud subscriptions and support revenue		**3,771**	**3,831**	**2,995**	**26**	**28**
Cloud subscriptions and support gross margin SaaS/PaaS1) (in %)	SAP Business Network segment	77	77	76	1pp	1pp
	Other3)	57	57	62	5pp	5pp
	Total	67	68	70	2pp	2pp
Cloud subscriptions and support gross margin IaaS2) (in %)		7	8	9	16pp	17pp
Cloud subscriptions and support gross margin (in %)		**62**	**62**	**64**	**2pp**	**2pp**

1) Software as a service/platform as a service

2) Infrastructure as a service

3) Other includes Application, Technology & Services segment, Customer Experience segment and miscellaneous. The individual revenue and margin numbers for the Application, Technology & Services segment and the Customer Experience segment are disclosed on the previous pages.

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Financial Income, Net

Financial income in 2017 increased to 188 million (2016: - 29 million). Our finance income was 476 million in 2017 (2016: 230 million) and our finance costs were 288 million (2016: 259 million).

Finance income mainly consists of gains from disposal of equity securities totaling 382 million in 2017 (2016: 164 million).

Finance costs mainly consist of interest expense on financial liabilities amounting to 89 million in 2017 (2016: 108 million) and negative effects from derivatives amounting to 116 million (2016: 114 million). The decrease in finance costs is mainly due to lower average indebtedness. For more information about financing instruments, see the 2017 Annual Report on Form 20-F, Part III, Notes to the Consolidated Financial Statement, Note (17b).

Income Taxes

The effective tax rate in 2017 was 19.5% (2016: 25.5%). The year-over-year decrease in the effective tax rate mainly resulted from one-time tax benefits relating to an intra-group transfer of intellectual property rights to SAP SE and the U.S. tax reform which were partly compensated by valuation allowances on deferred tax assets and changes in the regional allocation of income. For more information about income taxes, see the 2017 Annual Report on Form 20-F, Part III, Notes to the Consolidated Financial Statement, Note (10).

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 72% of our total revenue in 2018 (2017: 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 an unfavorable impact of 1,219 million on our total revenue for 2018, an unfavorable impact of 301 million on our total revenue for 2017 and an unfavorable impact of 164 million on our total revenue for 2016.

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 companies have their liquidity managed centrally by the Group, so that liquid assets across the Group can be consolidated, monitored, and invested in accordance with Group policy. High levels of liquid assets help keep SAP flexible, sound, and independent. In addition, various credit facilities are currently available for additional liquidity, if required. For more information about these facilities, see the *Credit Facilities* section.

We manage credit, liquidity, interest rate, equity price, and foreign exchange rate risks on a Group-wide basis. We use selected derivatives exclusively for this purpose and not for speculation, which is defined as entering into a derivative instrument for which we do not have corresponding underlying transactions. The rules for the use of derivatives and other rules and processes concerning the management of financial risks are documented in our treasury guideline, which applies globally to all companies in the Group. For more information about the management of each financial risk and about our risk exposure, see the Notes to the Consolidated Financial Statements, *Notes (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, 2018, our cash, cash equivalents, and current investments were primarily held in euros and U.S. dollars. We generally invest only in the financial assets of issuers or funds with a minimum credit rating of BBB, and pursue a policy of cautious investment characterized by wide portfolio diversification with a variety of counterparties, predominantly short-term investments, and standard investment instruments. Investments in financial assets of issuers with a credit rating lower than BBB were not material in 2018.

We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs in 2019 and, together with expected cash flows from operations, will support debt repayments and our currently planned capital expenditure requirements over the near term and medium term. It may also be necessary to enter into financing transactions when additional funds are required that cannot be wholly sourced from free cash flow (for example, to finance large acquisitions).

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

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information about the financial debt, see the *Cash Flows and Liquidity* section.

Capital Structure Management

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

For more information about the capital structure and its analysis, see the *Analysis of Consolidated Statement of Financial Position* section and the Notes to the Consolidated Financial Statements, *Note (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.

Aside from our dividend policy, we might return excess liquidity to our shareholders by potentially repurchasing treasury shares in future.

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Financial Debts

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

Maturity Profile of Financial Debts

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Nominal volume of financial debt on December 31, 2018, included amounts in euros (10,050 million) and U.S. dollars (1,273 million). Approximately 30% of the financial debt was held at variable interest rates, partially swapped from fixed into variable using interest rate swaps.

We intend to repay 750 million in Eurobonds in November 2019. In addition, we might repay portions of the Qualtrics related 2.5 billion acquisition term loan, and plan to repay the first tranches of a 50 million promotional loan with KfW.

Financial Debt

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

Cash Flows and Liquidity

Group Liquidity

millions	**2018**	2017	Δ
Cash and cash equivalents	8,627	4,011	4,617
Current investments	211	774	563
Group liquidity	**8,838**	**4,785**	**4,053**
Current financial debt	759	1,299	540
Net liquidity 1	**8,080**	**3,486**	**4,594**
Non-current financial debt	10,572	4,965	5,607
Net liquidity 2	**2,493**	**1,479**	**1,013**

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, 2018, primarily comprised amounts in euros and U.S. dollars. For more information about our liquidity, see the Notes to the Consolidated Financial Statements, *Note (E.3)*.

The increase in Group liquidity compared to 2017 was mainly due to proceeds from borrowings for the Qualtrics acquisition and cash inflows from our operations. They were offset by cash outflows for acquisitions, dividend payments, capital expenditures, and repayments of borrowings.

For information about the impact of cash, cash equivalents, current investments, and our financial liabilities on our income statements, see the analysis of our financial income, net, in the *Operating Results (IFRS)* section.

Development of Group Liquidity

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Analysis of Consolidated Statements of Cash Flows

	Years ended December 31,				
millions	**2017**	**2016**	**2015**	**Δ in % 2017 vs. 2016**	**Δ in % 2016 vs. 2015**
Net cash flows from operating activities	5,045	4,628	3,638	9	27
Net cash flows from investing activities	1,112	1,799	334	38	>100
Net cash flows from financing activities	3,406	2,705	3,356	26	19

Analysis of Consolidated Statements of Cash Flows: 2017 compared to 2016

In 2018, cash inflows from operating activities decreased by 743 million to 4,303 million (2017: 5,045 million). This is particularly due to an increase in income tax payments, higher insurance payments related to employees time credits compared to the prior year, and higher share-based payments (1.0 billion in 2018 and 0.8 billion in 2017). Our days sales outstanding (DSO) for receivables, defined as the average number of days from the raised invoice to cash receipt from the customer, remained stable in 2018 at 70 days (2017: 70 days).

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 1,671 million made in 2018 exceeded the amount of 1,499 million from the prior year, as a result of the increased dividend paid per share from 1.25 to 1.40. In 2017, we repurchased shares in the amount of 500 million (2018: 0).Analysis of Consolidated Statements of Cash Flows: 2017 Compared to 2016

In 2017, cash inflows from operating activities increased by 417 million to 5,045 million (2016: 4,628 million). This result is due to a 145 million decrease in income tax payments compared to the prior year and improved working capital management, which can be shown in decreased days sales outstanding (DSO) for receivables, defined as the average number of days from the raised invoice to cash receipt from the customer, which went down four days in 2017 to 70 days (2016: 74 days).

Cash outflows from investment activities were 1,112 million in 2017 (2016: 1,799 million). The decrease was caused by net cash inflows from sales and purchases of equity or debt instruments of other entities, totaling 358 million in 2017 compared to a net cash outflow 756 million in 2016. Cash outflows from the purchases of intangible assets and property, plant, and equipment increased by 274 million to 1,275 million in 2017, while cash outflows from business combinations increased by 185 million to 291 million in 2017. For more information about current and planned capital expenditures, see the *Investment Goals* section.

Net cash outflows from financing activities were 3,406 million in 2017, compared to 2,705 million in 2016. The 2017 cash outflows resulted from repayments of 1,000 million in Eurobonds and US$442.5 million in U.S. private placements when they matured. Cash outflows in 2016 resulted

from repayments of a 1,250 million bank loan that we had taken to finance the Concur acquisition. The repayment was partly refinanced through the issuance of a 400 million Eurobond. We also repaid a US$600 million U.S. private placement in 2016.

The dividend payment of 1,499 million made in 2017 exceeded the amount of 1,378 million from the prior year, as a result of the increased dividend paid per share from 1.15 to 1.25. In 2017, we repurchased shares in the amount of 500 million (2016: 0).

Credit Facilities

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

To retain high financial flexibility, on November 20, 2017, SAP SE entered into a 2.5 billion syndicated revolving credit facility agreement with an initial term of five years plus two one-year extension options, of which one was exercised in November 2018. It replaced the previous credit facility of 2.0 billion from 2013 and may be used for general corporate purposes. A possible future utilization is not subject to any financial covenants. Borrowings under the facility bear interest of EURIBOR or LIBOR for the respective currency plus a margin of 0.17%. We are also required to pay a commitment fee of 0.0595% per annum on the unused available credit. So far, we have not used, and do not currently foresee any need to use, this credit facility.

As at December 31, 2018, SAP SE had additional available credit facilities totaling 424 million. Several of our subsidiaries have credit facilities available that allow them to borrow funds at prevailing interest rates. As at December 31, 2018, approximately 21 million was available through such arrangements. There were immaterial borrowings outstanding under these credit facilities from our foreign subsidiaries as at December 31, 2018.

On November 12, 2018, SAP entered into a 7.0 billion credit facility agreement to finance the intended acquisition of Qualtrics. On December 10, 2018, we issued five tranches of Eurobonds with a total volume of 4.5 billion and maturities between two and 12.25 years to refinance the intended acquisition early. The funds were used to cancel the credit facility accordingly, therefore resulting in 2.5 billion still available to SAP on December 31, 2018. The facility was fully drawn on January 23, 2019, and can be flexibly repaid within its lifetime of three years.

Off-Balance Sheet Arrangements

Several SAP entities have entered into operating leases for office space, hardware, cars and certain other equipment. These arrangements are sometimes referred to as a form of off-balance sheet financing. Rental expenses under these operating leases are set forth below under Contractual Obligations. We do not believe we have forms of material off-balance sheet arrangements that would require disclosure other than those already disclosed.

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Contractual Obligations

The table below presents our on- and off-balance sheet contractual obligations as of December 31, 2018:

Contractual Obligations		Payments due by period			
millions	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Financial liabilities1)	12,552	1,149	2,207	2,507	6,689
Derivative financial liabilities1)	72	60	12	0	0
Operating lease obligations3)	1,442	351	494	261	336
Purchase obligations3)	2,133	827	792	498	17
Capital contribution commitments3)	187	187	0	0	0
Other non-current non-financial liabilities2)	501	0	343	16	142
Total	**16,888**	**2,573**	**3,849**	**3,282**	**7,184**

1) For more information on financial liabilities and derivative financial liabilities see Notes (E.3) and (F.1) to our Consolidated Financial Statements.

2) For more information on other non-current non-financial liabilities see Notes (B.3), (B.5), and (G.2) to our Consolidated Financial Statements.

3) See Notes (D.5), (D.7), and (G.3) to our Consolidated Financial Statements for additional information about capital contribution commitments, purchase obligations, and operating lease 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.

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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. 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)*, *(G.3)*, and *(G.4)* 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

Our Consolidated Financial Statements are prepared based on the accounting policies described in the corresponding Note or note *(IN.1) Basis for Preparation* to our Consolidated Financial Statements in this report. The application of such policies requires management to make judgments, estimates and assumptions that affect the application of policies and the reported amounts of assets, liabilities, revenues and expenses in our Consolidated Financial Statements. We base our judgments, estimates and assumptions on historical and forecast information, as well as regional and industry economic conditions in which we or our customers operate, changes to which could adversely affect our estimates. Although we believe we have made reasonable estimates about the ultimate resolution of the underlying uncertainties, no assurance can be given that the final outcome of these matters will be consistent with what is reflected in our assets, liabilities, revenues and expenses. Actual results could differ from original estimates.

The accounting policies that most frequently require us to make judgments, estimates, and assumptions, and therefore are critical to understanding our results of operations, include the following:

- revenue recognition;
- valuation of trade receivables;

- accounting for share-based payments;
- accounting for income taxes;
- accounting for business combinations;
- accounting for goodwill;
- accounting for intangible assets (including recognition of internally generated intangible assets from development) and
- accounting for legal contingencies.

Our management periodically discusses these critical accounting policies with the Audit Committee of the Supervisory Board. See *Note (IN.1)* to our Consolidated Financial Statements for further 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 European Central Bank (ECB) expects global economic activity to decelerate in 2019 but remain steady through 2021, growing at rates below those before the 2007 2008 financial crisis. That is the essence of the ECB s December 2018 Economic Bulletin.1 Advanced economies could continue to benefit from accommodative monetary policies and supportive financial conditions, though waning, for several more years. Tightening financial conditions in emerging markets, however, might more negatively affect global activity than thus far. Nevertheless, the ECB expects those emerging economies affected by the 2018 financial market turbulences to recover in 2019.

Regarding the Europe, Middle East, and Africa (EMEA) region, the ECB has revised its previous outlooks for GDP growth in the euro area slightly downwards. Geopolitical factors, the threat of protectionism, and financial market volatility might weigh on economic activity there. However, the near-term outlook for the euro area will depend largely on the eventual modus operandi of Great Britain s withdrawal from the European Union. In central and eastern European countries, the ECB projects a robust GDP growth in the near term, supported by strong investment, solid consumer spending and improvements in the labor market, but decelerating activity over the medium term. In Russia, economic recovery might continue in 2019, supported by improving domestic demand but will strongly depend on how the oil price develops.

As for the Americas region, the ECB expects the United States to provide a sizeable fiscal stimulus in 2019, including lower taxes and increased expenditure, leading to a resilient economic activity that year, but slackening thereafter. In addition, intensifying trade tensions between the United States and China are likely to affect confidence and

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investment negatively. According to the ECB, economic activity in Brazil might accelerate in 2019 due to labor market improvements and continuing monetary accommodation.

In the Asia Pacific Japan (APJ) region, the ECB projects Japanese economic activity to rebound in the near term, benefitting from an accommodative monetary policy. However, the pace of economic expansion in Japan is likely to decelerate again thereafter, due to increasing capacity constraints. Regarding China, the ECB emphasizes the strong impact from trade tensions between China and the United States. Furthermore, the Chinese housing market might slow, so that over the medium term, the ECB expects the pace of expansion in China to moderate gradually, resulting in an orderly slowdown and rebalancing of the Chinese economy.

As for rates of growth, the International Monetary Fund (IMF) projects the following economic trends for the mid-term horizon until the end of 2019:

Economic Trends
GDP Growth Year Over Year

%	2017	**2018p**	2019p
World	**3.7**	**3.7**	**3.7**
Advanced economies	2.3	2.4	2.1
Developing and emerging economies	4.7	4.7	4.7
Europe, Middle East, and Africa (EMEA)			
Euro area	2.4	2.0	1.9
Germany	2.5	1.9	1.9
Emerging and developing Europe	6.0	3.8	2.0
Middle East, North Africa, Afghanistan, and Pakistan	2.2	2.4	2.7
Sub-Saharan Africa	2.7	3.1	3.8
Americas			
United States	2.2	2.9	2.5
Canada	3.0	2.1	2.0
Latin America and the Caribbean	1.3	1.2	2.2
Asia-Pacific Japan (APJ)			
Japan	1.7	1.1	0.9
Emerging and developing Asia	6.5	6.5	6.3
China	6.9	6.6	6.2

p = projection

Source: International Monetary Fund (IMF), World Economic Outlook October 2018, Challenges to Steady Growth (https://www.imf.org/~/media/Files/Publications/WEO/2018/October/English/main-report/Text.ashx?la=en), p. 14

The IT Market:
Outlook for 2019 and Beyond

The pace and volume of digital innovation will radically accelerate in the next three to five years, embracing all technologies as well as enterprises of all sizes. That is what the U.S.-based market research firm International Data Corporation (IDC) reports in its most recent publications.2 According to IDC, by 2022 more than 60% of global GDP could be digitized, and IT-related spending from 2019 2022 might amount to as much as US$7 trillion. Organizations will no longer digitize single aspects of their business, but create digital native IT environments.

IDC predicts that one of the major markets will be the worldwide Internet of Things (IoT) market, growing at an average of 13.6% per year and reaching US$1.19 trillion in 2022, 48.2% of which in the APJ region5. At the same time, the proportion spent on devices will shrink and give way to

spending on the IoT platform, analytics and application software, and ongoing services. By 2022, software will represent the largest proportion of spend at 25.1%, projects IDC.

Furthermore, blockchain will be another growing technology over the next years, says IDC.3 It estimates that by 2021, nearly a third of all manufacturers and retailers globally will be using blockchain technology to build digital trust and establish prominent in-industry value chains, thus reducing transaction costs by 35%.

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However, one of the most important growth markets over the coming years will be artificial intelligence (AI) technologies and solutions. According to IDC, corporate investment in AI solutions might grow at an average of 46.2% per year and reach more than US$52 billion by 2021. By 2020, 80% of enterprises could already be making their data accessible to AI solutions from everywhere in the business ecosystem.

Extending AI solutions further to the edge will strengthen enterprises competitiveness and create new sources of revenue, says IDC. By 2022, over 40% of organizations cloud infrastructure could include edge locations centered on an intelligent core. AI could then reach 25% of endpoint devices and systems, such as handheld terminals, mobile phones, wearables, switches, drones, TVs, planes, surveillance cameras, self-driving vehicles, and smart buildings.2

Sources:

1) European Central Bank, Economic Bulletin, Issue 8/2018, Publication Date: December 27, 2018 (https://www.ecb.europa.eu/pub/pdf/ecbu/eb201808.en.pdf)

2) IDC FutureScape: Worldwide IT Industry 2019 Predictions, Doc #US44403818, October 2018

3) IDC FutureScape: Worldwide Digital Transformation 2019 Predictions, Doc #US43647118, October 2018

4) IDC FutureScape: Worldwide Intelligent ERP 2019 Predictions, Doc #US43262918, October 2018

5) IDC Market Forecast: Worldwide Internet of Things Forecast, 2018 2022, September 2018

As to regional rates of growth, Gartner, another U.S.-based IT market research firm, projects the following accelerations in IT spending for the mid-term horizon until the end of 2019:

Trends in the IT Market
Accelerated IT Spending Year Over Year

Growth in % at constant currencies	2017e	**2018p**	2019p
World			
Total IT	3.7	3.1	3.2
Software	9.7	8.5	8.5
Services	4.1	4.5	4.7
Europe, Middle East, and Africa (EMEA)			

Total IT	2.9	2.2	2.0
Software	9.0	7.9	7.8
Services	3.7	4.2	4.5
Americas			
Total IT	3.0	2.9	3.4
Software	10.1	8.4	8.4
Services	4.1	4.5	4.7
Asia-Pacific Japan (APJ)			
Total IT	5.6	4.5	4.1
Software	10.0	10.2	10.1
Services	4.8	5.0	5.2

e = estimate, p = projection
Table created by SAP based on: Gartner Market Databook, 4Q18 Update, #376398, Table 2-1 Regional End-User Spending on IT Products and Services in Constant U.S. Dollars, 2016-2022 (Millions of Dollars) .
The Gartner Reports described herein, (the Gartner Reports) represent research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, Inc. (Gartner), and are not representations of fact. Each Gartner Report speaks as of its original publication date (and not as of the date of this annual report) and the opinions expressed in the Gartner Reports are subject to change without notice.

Impact on SAP

The 2018 results again showed SAP s impressive resilience and the business momentum driven by our strategy of innovation and growth. Even with evolving economic and political uncertainties, the SAP business model will ensure sustained cash flows via our high share of more predictable revenue. Our growth ambition remains strong and we will further continue to invest in strategic growth areas like the cloud, IoT, AI, machine learning, and blockchain. Those are expected to become significant investment priorities of our customers in the upcoming years. In addition, our focus on combining Experience Management from Qualtrics with SAP s Operational Data Management will significantly increase our total addressable market.

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Financial Targets and Prospects

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

Outlook 2019

The Company is providing the following 2019 outlook:

Non-IFRS cloud subscriptions and support revenue is expected to be in a range of 6.7 billion to 7.0 billion at constant currencies (2018: 5.03 billion), up 33% to 39% at constant currencies.

Non-IFRS cloud and software revenue is expected to be in a range of 22.4 billion to 22.7 billion at constant currencies (2018: 20.66 billion), up 8.5% to 10% at constant currencies.

Non-IFRS operating profit is expected to be in a range of 7.7 billion to 8.0 billion at constant currencies (2018: 7.16 billion), up 7.5% to 11.5% at constant currencies.

In addition, SAP expects total revenues to increase strongly, at a rate slightly lower than operating profit. The cloud and software revenue guidance above assumes a mid-single-digit decline in software license revenue.

While SAP s full-year 2019 business outlook is at constant currencies, actual currency reported figures are expected to be impacted by currency exchange rate fluctuations as the Company progresses through the year. See the table below for the full-year 2019 expected currency impacts.

In percentage points	**2019**
Cloud subscriptions and support	**+1pp to +3pp**
Cloud and software	**0pp to +3pp**
Operating profit	**+1pp to +3pp**

We continuously strive for profit expansion in our reportable segments. We expect the segment profit to increase in all our reportable segments.

The following table shows the estimates of the items that represent the differences between our non-IFRS financial measures and our IFRS financial measures.

Non-IFRS Measures

millions	Estimated Amounts for 2019	**Actual Amounts for 2018**
Revenue adjustments	100 150	33
Share-based payment expenses	1,200 1,500	830
Acquisition-related charges	750 900	577
Restructuring	800 950	19

In 2019, SAP will further increase focus on its key strategic growth areas. For the first time since 2015, SAP will execute a company-wide restructuring program to further simplify company structures and processes and to ensure that its organizational setup, skillsets, and resource allocation all continue to meet evolving customer demand. Restructuring expenses are projected to be 800 million to 950 million, the vast majority of which will be recognized in the first quarter of 2019. Due to the restructuring program we expect a cash outflow of about 550 million to 750 million in 2019. For 2020, we predict a lower cash flow impact from restructuring. Excluding restructuring expenses, the program is expected to provide a minor cost benefit in 2019 and 750 million to 850 million in annual cost savings as of 2020 that will fuel investments in strategic growth areas. Although we expect roughly 4,400 employees to leave SAP under the restructuring program, we continue to invest in key strategic growth areas. In 2019, we expect our headcount to increase at a similar pace as in 2018 to reach more than 100,000 by the end of 2019. The expected cost savings and reinvestment are fully reflected in SAP s financial outlook and ambitions.

The Company expects a full-year 2019 effective tax rate (IFRS) of 26.5% to 27.5% (2018: 27.0%) and an effective tax rate (non-IFRS) of 26.0% to 27.0% (2018: 26.3%).

Impact of the New Accounting Standard IFRS 16 Leases

As of January 1, 2019, SAP adopted the new IFRS standard on lease accounting (IFRS 16 Leases). SAP s profit, assets, and liabilities, and cash flows in 2019 will be impacted by the new policies. The actual impact of IFRS 16 on our profits depends not only on the lease agreements in effect at the time of adoption but also on new lease agreements entered into or terminated in 2019. For more information about the adoption of IFRS 16 and an estimation of the impact on SAP s income statement, statement of financial position, and cash flow statement, see the Notes to the Consolidated Financial Statements, *Note (IN.1).*

Proposed Dividend

In 2019, we intend to pay a dividend totaling 40% or more of the prior year s profit after tax. This results in a dividend of 1.50 per share (subject to shareholder approval at the Annual General Shareholders meeting in May 2019). For more information, see the *Financial Performance: Review and Analysis* section.

Medium-Term Prospects

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

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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.

Looking beyond 2019, SAP updated its 2020 ambition last provided in July 2018. This update reflects the Company s consistent fast growth in the cloud, strong cloud and software momentum, and operating profit expansion as well as the Qualtrics acquisition.

In 2020, SAP now expects:

- 8.6 billion to 9.1 billion in non-IFRS cloud subscriptions and support revenue (previously: 8.2 billion to 8.7 billion; 2018: 5.03 billion)
- 28.6 billion to 29.2 billion in non-IFRS total revenue (previously: 28.0 billion to 29.0 billion; 2018: 24.74 billion)
- 8.5 billion to 9.0 billion in non-IFRS operating profit (unchanged; 2018: 7.16 billion)

The midpoints of the 2020 total revenue and operating profit ranges now imply an operating margin of 30.3%. Beyond 2020, SAP currently expects further increases of our operating margin.

We expect the share of more predictable revenue (defined as the total of cloud subscriptions and support revenue and software support revenue) to reach 70% to 75% in 2020 (2018: 65%).

We expect that, by 2020, our public cloud offerings will contribute slightly more than half of cloud subscription and support revenue, followed by our business network offerings at slightly less than 40%. Both offerings are expected to each generate, in 2020, cloud subscriptions and support revenues that are significantly higher than the cloud subscriptions and support revenue generated from our private cloud offerings.

We expect our revenue growth trajectory through 2020 to be driven by continued strong growth in the cloud and continued growth in our software support revenue. We expect mid-single-digit declines in software revenue. This is all expected to result in high single-digit growth in cloud and software revenue through 2020.

We also strive to significantly improve, over the next few years, the profitability of our cloud business. In 2019, we expect to see the benefits from previous efficiency-based investments, and thus an increasing cloud gross margin. We expect these profitability improvements to accelerate in the following years.

We expect that the individual gross margins of our different cloud operating models will increase at different rates over the next years to reach the following mid-term targets.

We expect that, in 2020, the gross margin from our business network offerings will be higher than 80% (2018: 78%).

We expect that, in 2020, the gross margin from our public cloud offerings will reach approximately 70% (2018: 60%), and to expand to about 80% over the course of the two years thereafter.

Previously, we expected the gross margin from our private cloud offerings to reach about 40% by 2020 (2018: 13%). We now expect this gross margin to reach between 30% and 35%.

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 2018 (2018: 87%).

In addition, we expect our 2020 services gross margin to be slightly higher than in 2018 (2018: 23%).

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.

We also introduced a 2023 ambition. Over the next five years, we expect to:

- More than triple our non-IFRS cloud subscription and support revenue (2018: 5.03 billion)
- Grow our non-IFRS total revenue to more than 35 billion (2018: 24.74 billion)
- Grow our non-IFRS operating profit at a compound annual growth rate (CAGR) of 7.5% to 10% (2018: 7.16 billion)
- Approach a share of more predictable revenue of 80%.

Investment Goals

Our planned investment expenditures for 2019 and 2020, other than from business combinations, consist primarily of the construction activities. We expect investments from construction activities of approximately 359 million in 2019. The expansion of our data centers is an important aspect of our planned investments again for 2019. In addition, we aim to extend our office space to cover currently anticipated future growth. In 2020, we expect investments from construction activities of approximately 400 million. In 2019, we expect total capital expenditures of approximately 1.5 billion. In 2020, capital expenditures are expected to stay at a similar level as in 2019.

On January 23, 2019, the acquisition of Qualtrics closed following satisfaction of applicable regulatory and other approvals. 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 will also incur liabilities and post-closing expenses relating to assumed share-based payment awards amounting to approx. US$0.9 billion. On January 23, 2019, we fully drew the Qualtrics-related 2.5 billion acquisition credit facility to partially finance the purchase price payment. The facility has a lifetime of three years and can be flexibly repaid with SAP s free cash flow or further refinancing transactions on the capital markets.

Qualtrics will be reflected in our Customer Experience segment, which we are renaming upon the Qualtrics acquisition to Customer and Experience Management.

Other than that, we do not expect major acquisitions in 2019 and 2020. Our priority is to pay down debts resulting from the Qualtrics acquisition first. Therefore, we will rather focus on organic growth, complemented by minor tuck-in acquisitions.

Goals for Liquidity and Finance

On December 31, 2018, we had a negative net liquidity. We believe that our liquid assets, combined with our undrawn credit facilities, are sufficient to meet our operating financing needs in 2019 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 2019, compared to 2018 we expect higher cash outflows for restructuring (approximately additional 550 million to 750 million), share based payments (approximately additional 300 million mainly due to Qualtrics), and tax-related cash outflows (approximately additional 300 million). In contrast, we expect operating cash flow to benefit from the cash flow reclassification due to IFRS 16 by an amount of 300 million to 400 million. Considering all these effects, we expect operating cash flow in 2019 to be broadly in line with 2018. Free cash flow (as redefined in response to IFRS 16) is expected to decrease moderately despite an unchanged level of capital expenditure. For 2020,

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we expect a significant year-over-year increase in both, operating cash flow and free cash flow, mainly due to decreased cash outflows for restructuring and a profitable growth of our operating business.

We intend to repay 750 million in Eurobonds in November 2019. In addition, we might repay portions of the Qualtrics related 2.5 billion acquisition term loan, and plan to repay the first tranches of a 50 million promotional loan with KfW.

Non-Financial Goals 2019 and Ambitions for 2020

In addition to our financial goals, we also focus on two non-financial targets: customer loyalty and employee engagement.

For 2019 to 2020, we aim to reach an Employee Engagement Index of between 84% and 86% (2018: 84%).

We measure customer loyalty using the Customer Net Promoter Score (NPS). In 2019, we aim for a Customer NPS of +1.0 (2018: 5) and expect a steady increase in 2020 and beyond.

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. The Qualtrics acquisition is reflected in our outlook and prospects.

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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)(4)(7)(8)(11)(12)	75	Chairman of the Supervisory Board	2003	2019
Margret Klein-Magar, Vice Chairperson(4)(7)(9)	54	Employee, Vice President Head of SAP Alumni Relations	2012	2019
Pekka Ala-Pietilä(1)(4)(6)(7)(8)(11)	62	Chairman of the Board of Directors, Huhtamäki Oyj	2002	2019
Panagiotis Bissiritsas(5)(6)(7)(9)	50	Employee, Support Expert, Member of Works Council SAP SE	2007	2019
Martin Duffek(5)(7)(9)(12)	43	Employee, Product Manager	2015	2019
Aicha Evans(3)(4)(7)(12)	49	Senior Vice President and Chief Strategy Officer, Intel Corporation	2017	2019
Diane Greene(3)(7)	63	Chief Executive Officer, Google Cloud, Google LLC	2018	2019
Andreas Hahn(4)(7)(9)	48	Employee, Product Expert, IoT Standards, Member of Works Council SAP SE	2015	2019
Prof. Dr. Gesche Joost(2)(7)(12)	44	Professor for Design Research and Head of the Design Research Lab, University of Arts Berlin	2015	2019
Lars Lamadé(4)(9)(11)(12)	47	Employee, Head of Sponsorships Europe and Asia	2002	2019
Bernard Liautaud(1)(4)(7)(8)	56	Managing Partner, Balderton Capital	2008	2019
Gerhard Oswald(3)	65	Managing Director of Oswald Consulting GmbH	2018	2019
Christine Regitz(7)(9)(12)	53	Employee, Vice President User Experience, Chief Product Expert	2015	2019
Dr. Friederike Rotsch(5)(6)(11)	46	Group General Counsel and Head of Group Legal & Compliance. Merck KGaA	2018	2019
Dr. Erhard Schipporeit(1)(5)(6)(10)(11)	70	Independent Management Consultant	2005	2019
Robert Schuschnig-Fowler(6)(9)(12)	59	Employee, Account Manager, Senior Support Consultant	2015	2019
Dr. Sebastian Sick(4)(6)(9)(11)	46	Head of Company Law Unit, Hans Boeckler Foundation	2015	2019
Pierre Thiollet(7)(9)	57	Employee, Webmaster, Member of the SAP France Works Council, Secretary of CHSCT (Hygiene, Security and Work Conditions Committee)	2015	2019

(1) Elected by SAP SE s shareholders on May 21, 2014.

(2) Elected by SAP SE s shareholders on May 12, 2016.

(3) Elected by SAP s shareholders on May 17, 2018.

(4) Member of the General and Compensation Committee.

(5) Member of the Audit Committee.

(6) Member of the Finance and Investment Committee.

(7) Member of the Technology and Strategy Committee.

(8) Member of the Nomination Committee.

(9) Appointed by the SAP SE Works Council Europe on May 6, 2015.

(10) Audit Committee financial expert.

(11) Member of the Special Committee.

(12) Member of the People and Organization Committee.

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

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employees representatives were appointed by the SAP SE Works Council Europe on May 6, 2015.

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, 2018. See *Note (G.5)* 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(1)	Year First Appointed	Year Current Term Expires
Bill McDermott, CEO	2008	2021
Robert Enslin	2014	2021
Adaire Fox-Martin	2017	2020
Christian Klein	2018	2020
Michael Kleinemeier	2015	2020
Jennifer Morgan	2017	2020
Luka Mucic	2014	2021
Jürgen Müller	2019	2021
Stefan Ries	2016	2024

(1) On February 20, 2019, Bernd Leukert and the Supervisory Board mutually agreed that Bernd Leukert will depart SAP and that his membership on the Executive Board ended effective as of the day.

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

Bill McDermott, CEO (Vorstandssprecher), 57 years old, holds a master s degree in business administration from Northwestern University-Kellogg School of Management. He joined SAP in 2002 and became a member of its Executive Board on July 1, 2008. On February 7, 2010 he became Co-CEO alongside Jim Hagemann Snabe and when Jim Hagemann Snabe concluded his role as Co-CEO in May 2014, Bill McDermott became sole CEO. Besides his duties as CEO, he is responsible for strategy, governance, digital government, business development, corporate development, global corporate affairs, corporate audit and global marketing. He represents SAP as a member of the European Roundtable of Chief Executive Officers, the U.S. Business Council and the World Economic Forum. Prior to joining SAP, he served as a global executive in several technology companies.

Robert Enslin, 56 years old, holds diplomas in data science as well as computer science and data management. He joined SAP in 1992 and became a member of the Executive Board in May 2014. He is president of Cloud Business Group and as such responsible for the SAP Business Network segment (which includes SAP Concur, SAP Ariba, and SAP Fieldglass), for the Customer and Experience Management segment (which includes Customer Experience and Qualtrics) and for the development and delivery of SAP SuccessFactors solutions as part of the

Applications, Technology & Services segment. Before joining SAP, Robert Enslin spent 11 years in various roles in the IT industry.

Adaire Fox-Martin, 54 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. Together with Jennifer Morgan she is jointly responsible for Global Customer Operations and leads SAP s customer operations in EMEA (Europe, Middle East, Africa), MEE (Middle & Eastern Europe) and Greater China. Prior to SAP, Adaire Fox-Martin served as the head of Public Sector for Asia Pacific Japan at Oracle Corporation.

Christian Klein, 38 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. Christian is Chief Operating Officer (COO) of SAP and leads the board area Intelligent Enterprise Group. He is responsible for global development and delivery of SAP s core applications, global business operations, IT services, and cloud infrastructure.

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.

Jennifer Morgan, 47 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. Together with Adaire Fox-Martin she is jointly responsible for Global Customer Operations and leads SAP s customer operations in the Americas and Asia Pacific Japan. Prior to SAP, Jennifer Morgan served in various management roles at Siebel Systems and Accenture.

Luka Mucic, 47 years old, holds a master s 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, data protection and privacy, and global security.

Jürgen Müller, 36 years old, holds a PhD in business informatics 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 HPI.

Stefan Ries, 52 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.

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The members of the Executive Board of SAP SE as of December 31, 2018 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.5)* 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.

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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 2018, and discloses the amount of compensation.

Compensation for Executive Board Members

Compensation System for 2018

The compensation for Executive Board members is intended to reflect the demanding role of Executive Board members leading a global company in a quickly evolving sector. The compensation level is aimed to be competitive to support SAP in the worldwide market for highly skilled executives, especially in the context of the software industry. It is our 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 if appropriate, revises these compensation targets, in its first meeting of each fiscal year (February 21, 2018, for 2018). 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 more than two-thirds of the CEO s compensation target, and more than 50% of each Executive Board member s compensation target.

In the case of any extraordinary, unforeseeable events, the Supervisory Board is entitled, at its reasonable discretion, to adjust the performance-based compensation before payout upwards or downwards in the interest of SAP. No corrections to the payout amounts paid in May 2018 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 currency1).

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.

1) Home currency is the currency of the Executive Board member s primary place of residence.

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Performance-Based Compensation

Short-Term Incentive

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

For the STI 2018, the financial KPIs are: Constant currency new cloud bookings in 2018, year-over-year growth in non-IFRS constant currency cloud and software revenue in 2018, and non-IFRS constant currency operating margin in 2018. 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 for the financial KPIs. In this case, the target achievement for these KPIs is set to zero.

On February 20, 2019, the Supervisory Board assessed SAP s performance against the agreed targets and determined the amount of the STI 2018 for the entire Executive Board. This resulted in a target achievement of 93.0% (cloud and software revenue growth of 125.8%, operating margin increase of 92.2%, and new cloud bookings of 64.9%).

The STI compensation for 2018 will be paid out after the Annual General Meeting of Shareholders in May 2019. It is paid in the Executive Board member s home currency1). All Executive Board members are obliged to purchase SAP shares worth at least 5% of the actual payout amount according to appropriate trading period regulations. These shares are subject to a three-year holding period.

Long-Term Incentive

The purpose of the long-term, 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 2017 operating profit target achievement was 95.4%. Considering this, the Supervisory Board set the grant amount of the 2018 tranche at 95.4% 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 2018 tranche was February 21, 2018.

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

LTI Grant Process

1) Home currency is the currency of the Executive Board member s primary place of residence.

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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

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

SAP share price performs much higher than Peer Group Index; **cap is triggered**		
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

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

Peer Group Index performs better than SAP share price; **low hurdle triggered**		
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

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The Peer Group Index currently includes the following major international competitors of SAP: Microsoft, IBM, Oracle, Salesforce, Adobe, VMWare, Workday, ServiceNow, Symantec, and Tableau. The Supervisory Board has defined this group based on internal and external recommendations and, if necessary, adjusts the group, for example, in case of a competitor s delisting. The Peer Group Index is calculated as a price index based on weighted market capitalization. Each Peer Group competitor is applied at a maximum 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.

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LTI Forfeiture Rules

1) 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)

2) For the definition, see the *Early End-of-Service Undertakings* section

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:

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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 362% (CEO) and 317% (Executive Board member other than CEO) of the total target compensation. This would be achieved in the event of the maximum possible payout amount of the STI and the LTI, as follows:

The maximum possible payout amount of the STI is reached when the target achievement of all financial KPIs is 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 123 million in 2022, the shareholders would also benefit through the strong increase in market capitalization, which would be at least 200 billion from 2018 to 2022.

The following graphic illustrates the relation of the fixed and performance-based compensation elements in the Executive Board members target compensation for 2018 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 2018

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 2014 to 2017 were already paid out.

STI Total Target Achievement

Percentage	**2018**	2017	2016	2015	2014
	93.0	88.2	104.4	147.5	109.5

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The relation between the LTI target amounts for the 2016 to 2018 tranches and the theoretical payout amounts are based on SAP s share price at year end. The 2014 tranche discloses the relation between the respective target amount and the actual payout amount in May 2018. The 2015 tranche discloses the relation between the respective target amount and the payout amount scheduled for May 2019.

Relation Between Target Amount and Payout Amount of the LTI

Percentage			**LTI 2016 Plan**		RSU Milestone Plan
	2018 Tranche1)	2017 Tranche1)	2016 Tranche1)	2015 Tranche2)	2015 2014 Tranche
12/31/2018	**90.87**	82.65	55.50	233.77	119.61
12/31/2017	**NA**	107.76	126.97	240.73	119.61

1) Consideration of theoretical payout amounts based on SAP s share price at year end

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

Amount of Compensation for 2018

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

Executive Board Members Compensation

German Corporate Governance Code

thousands												
					Bill McDermott CEO							Robert Enslin Member of the Executive Board
			Benefits Granted		**Benefits Received**				Benefits Granted		Benefits Received	
	20181)	**2018 (Min)**	**2018 (Max)**	20171)	**20181)**	20171)	**20181)**	**2018 (Min)**	**2018 (Max)**	20171)	**20181)**	20171)
Fixed compensation	1,314.7	1,314.7	1,314.7	1,374.3	1,314.7	1,374.3	800.2	800.2	800.2	836.5	800.2	836.5
Fringe benefits2)	794.7	794.7	794.7	1,271.9	794.7	1,271.9	105.1	105.1	105.1	368.1	105.1	368.1
Total	**2,109.4**	**2,109.4**	**2,109.4**	**2,646.2**	**2,109.4**	**2,646.2**	**905.3**	**905.3**	**905.3**	**1,204.6**	**905.3**	**1,204.6**
One-year variable compensation	2,193.0	0	3,070.2	2,093.7	1,846.7	2,486.9	1,327.3	0	1,858.2	1,267.2	1,117.7	1,505.2
Multi-year variable compensation												
LTI 2016 Plan	6,876.6	0	28,535.4	7,741.2			2,270.3	0	9,420.8	2,555.7		
RSU Milestone Plan 2015					5,251.0	5,787.6					1,248.8	
SAP SOP 2010 and 2011						10,178.3						
Total	**11,179.0**	**2,109.4**	**33,715.0**	**12,481.1**	**9,207.1**	**21,099.0**	**4,502.9**	**905.3**	**12,184.3**	**5,027.5**	**3,271.8**	**2,709.8**
Service cost	568.3	568.3	568.3	686.2	568.3	686.2	235.8	235.8	235.8	194.1	235.8	194.1
Total according to GCGC	**11,747.3**	**2,677.7**	**34,283.3**	**13,167.3**	**9,775.4**	**21,785.2**	**4,738.7**	**1,141.1**	**12,420.1**	**5,221.6**	**3,507.6**	**2,903.9**

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German Corporate Governance Code

thousands	Adaire Fox-Martin Member of the Executive Board						Christian Klein Member of the Executive Board (from 1/1/2018)					
			Benefits Granted		Benefits Received				Benefits Granted		Benefits Received	
	2018	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017	**2018**	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017
Fixed compensation	700.0	700.0	700.0	466.7	700.0	466.7	700.0	700.0	700.0		700.0	
Fringe benefits2)	54.6	54.6	54.6	82.4	54.6	82.4	13.1	13.1	13.1		13.1	
Total	**754.6**	**754.6**	**754.6**	**549.1**	**754.6**	**549.1**	**713.1**	**713.1**	**713.1**	**0**	**713.1**	**0**
One-year variable compensation	1,125.8	0	1,576.1	755.6	666.5		1,125.8	0	1,576.1			
Multi-year variable compensation												
LTI 2016 Plan	2,128.8	0	8,833.7	1,680.0			1,793.2	0	7,441.2			
RSU Milestone Plan 2015												
SAP SOP 2010 and 2011												
Total	**4,009.2**	**754.6**	**11,164.4**	**2,984.7**	**1,421.1**	**549.1**	**3,632.1**	**713.1**	**9,730.4**	**0**	**713.1**	**0**
Service cost												
Total according to GCGC	**4,009.2**	**754.6**	**11,164.4**	**2,984.7**	**1,421.1**	**549.1**	**3,632.1**	**713.1**	**9,730.4**	**0**	**713.1**	**0**

thousands	Michael Kleinemeier Member of the Executive Board						Bernd Leukert Member of the Executive Board					
			Benefits Granted		Benefits Received				Benefits Granted		Benefits Received	
	2018	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017	**2018**	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017
Fixed compensation	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0
Fringe benefits2)	29.1	29.1	29.1	29.0	29.1	29.0	10.3	10.3	10.3	30.3	10.3	30.3
Total	**729.1**	**729.1**	**729.1**	**729.0**	**729.1**	**729.0**	**710.3**	**710.3**	**710.3**	**730.3**	**710.3**	**730.3**
One-year variable compensation	1,125.8	0	1,576.1	1,125.8	992.9	1,175.3	1,125.8	0	1,576.1	1,125.8	992.9	1,175.3
Multi-year variable compensation												
LTI 2016 Plan	2,128.8	0	8,833.7	2,396.4			2,397.7	0	9,949.7	2,699.3		
RSU Milestone Plan 2015											1,248.8	
SAP SOP 2010 and 2011												
Total	**3,983.7**	**729.1**	**11,138.9**	**4,251.2**	**1,722.0**	**1,904.3**	**4,233.8**	**710.3**	**12,236.1**	**4,555.4**	**2,952.0**	**1,905.6**
Service cost												
Total according to GCGC	**3,983.7**	**729.1**	**11,138.9**	**4,251.2**	**1,722.0**	**1,904.3**	**4,233.8**	**710.3**	**12,236.1**	**4,555.4**	**2,952.0**	**1,905.6**

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German Corporate Governance Code

thousands	Jennifer Morgan Member of the Executive Board						Luka Mucic Member of the Executive Board					
			Benefits Granted		Benefits Received				Benefits Granted		Benefits Received	
	20181)	**2018 (Min)**	**2018 (Max)**	20171)	**20181)**	20171)	**2018**	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017
Fixed compensation	634.3	634.3	634.3	430.4	634.3	430.4	700.0	700.0	700.0	700.0	700.0	700.0
Fringe benefits2)	128.4	128.4	128.4	48.4	128.4	48.4	11.8	11.8	11.8	11.0	11.8	11.0
Total	**762.7**	**762.7**	**762.7**	**478.8**	**762.7**	**478.8**	**711.8**	**711.8**	**711.8**	**711.0**	**711.8**	**711.0**
One-year variable compensation	1,052.0	0	1,472.8	674.2	594.6		1,125.8	0	1,576.1	1,125.8	992.9	1,175.3
Multi-year variable compensation												
LTI 2016 Plan	2,128.8	0	8,833.7	1,680.0			2,128.8	0	8,833.7	2,396.4		
RSU Milestone Plan 2015											949.5	
SAP SOP 2010 and 2011												
Total	**3,943.5**	**762.7**	**11,069.2**	**2,833.0**	**1,357.3**	**478.8**	**3,966.4**	**711.8**	**11,121.6**	**4,233.2**	**2,654.2**	**1,886.3**
Service cost	51.4	51.4	51.4	8.9	51.4	8.9						
Total according to GCGC	**3,994.9**	**814.1**	**11,120.6**	**2,841.9**	**1,408.7**	**487.7**	**3,966.4**	**711.8**	**11,121.6**	**4,233.2**	**2,654.2**	**1,886.3**

thousands	Stefan Ries Member of the Executive Board						Total Executive Board			
			Benefits Granted		Benefits Received		Benefits Granted			Benefits Received
	2018	**2018 (Min)**	**2018 (Max)**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Fixed compensation	700.0	700.0	700.0	700.0	700.0	700.0	6,949.2	5,907.9	6,949.2	5,907.9
Fringe benefits2)	21.9	21.9	21.9	22.4	21.9	22.4	1,169.0	1,863.5	1,169.0	1,863.5
Total	**721.9**	**721.9**	**721.9**	**722.4**	**721.9**	**722.4**	**8,118.2**	**7,771.4**	**8,118.2**	**7,771.4**
One-year variable compensation	1,125.8	0	1,576.1	1,125.8	992.9	883.1	11,327.1	9,293.9	8,197.1	8,401.1
Multi-year variable compensation										
LTI 2016 Plan	1,793.2	0	7,441.2	2,018.7			23,646.2	23,167.7		
RSU Milestone Plan 2015									8,698.1	5,787.6
SAP SOP 2010 and 2011										10,178.3
Total	**3,640.9**	**721.9**	**9,739.2**	**3,866.9**	**1,714.8**	**1,605.5**	**43,091.5**	**40,233.0**	**25,013.4**	**32,138.4**
Service cost							855.5	889.2	855.5	889.2
Total according to GCGC	**3,640.9**	**721.9**	**9,739.2**	**3,866.9**	**1,714.8**	**1,605.5**	**43,947.0**	**41,122.2**	**25,868.9**	**33,027.6**

1) 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.

2) Insurance contributions, the private use of company cars and aircraft, benefits in kind, expenses for maintenance of two households, payments and related supplements for relocation upon appointment to the Executive Board, reimbursement of fees for the preparation of tax returns and tax gross ups according to local conditions. The fringe benefits of Bill McDermott mainly consist of tax gross ups according to local conditions and

expenses for maintenance of two households.

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

thousands	Bill McDermott		Robert Enslin		Adaire Fox-Martin		Christian Klein		Michael Kleinemeier	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Total according to GCGC	**11,747.3**	**13,167.3**	**4,738.7**	**5,221.6**	**4,009.2**	**2,984.7**	**3,632.1**	**0**	**3,983.7**	**4,251.2**
Less granted annual variable target compensation	2,193.0	2,093.7	1,327.3	1,267.2	1,125.8	755.6	1,125.8		1,125.8	1,125.8
Plus allocated actual annual variable compensation	2,039.5	1,846.7	1,234.4	1,117.7	1,046.9	666.5	1,046.9		1,046.9	992.9
Less service cost	568.3	686.2	235.8	194.1						
Total compensation	**11,025.5**	**12,234.1**	**4,410.0**	**4,878.0**	**3,930.3**	**2,895.6**	**3,553.2**	**0**	**3,904.8**	**4,118.3**

thousands	Bernd Leukert		Jennifer Morgan		Luka Mucic		Stefan Ries		Total Executive Board	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Total according to GCGC	**4,233.8**	**4,555.4**	**3,994.9**	**2,841.9**	**3,966.4**	**4,233.2**	**3,640.9**	**3,866.9**	**43,947.0**	**41,122.2**
Less granted annual variable target compensation	1,125.8	1,125.8	1,052.0	674.2	1,125.8	1,125.8	1,125.8	1,125.8	11,327.1	9,293.9
Plus allocated actual annual variable compensation	1,046.9	992.9	978.4	594.6	1,046.9	992.9	1,046.9	992.9	10,534.0	8,197.1
Less service cost			51.4	8.9					855.5	889.2
Total compensation	**4,154.9**	**4,422.5**	**3,869.9**	**2,753.4**	**3,887.5**	**4,100.3**	**3,562.0**	**3,734.0**	**42,298.4**	**39,136.2**

Vertical Pay Ratio

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

Ratio		CEO	2018 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**

Ratio		CEO	2017 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

Ratio		CEO	2016 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

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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	(RSU) Retention Share Units (40%)	(PSU) Performance Share Units (60%)	Grant Value per RSU at Time of Grant	Grant Value per PSU at Time of Grant	Total Grant Value at Time of Grant
		Quantity	Quantity	Quantity			thousands
Bill McDermott (CEO)	2018	85,841	34,336	51,505	79.01	80.84	6,876.6
	2017	89,217	35,687	53,530	83.60	88.88	7,741.2
Robert Enslin	2018	28,340	11,336	17,004	79.01	80.84	2,270.3
	2017	29,454	11,782	17,672	83.60	88.88	2,555.7
Adaire Fox-Martin	2018	26,574	10,630	15,944	79.01	80.84	2,128.8
	2017	18,539	7,416	11,123	85.91	93.76	1,680.0
Christian Klein (from 1/1/2018)	2018	22,385	8,954	13,431	79.01	80.84	1,793.2
Michael Kleinemeier	2018	26,574	10,630	15,944	79.01	80.84	2,128.8
	2017	27,619	11,048	16,571	83.60	88.88	2,396.4
Bernd Leukert	2018	29,931	11,972	17,959	79.01	80.84	2,397.7
	2017	31,109	12,444	18,665	83.60	88.88	2,699.3
Jennifer Morgan	2018	26,574	10,630	15,944	79.01	80.84	2,128.8
	2017	18,539	7,416	11,123	85.91	93.76	1,680.0
Luka Mucic	2018	26,574	10,630	15,944	79.01	80.84	2,128.8
	2017	27,619	11,048	16,571	83.60	88.88	2,396.4
Stefan Ries	2018	22,385	8,954	13,431	79.01	80.84	1,793.2
	2017	23,265	9,306	13,959	83.60	88.88	2,018.7
Total	**2018**	**295,178**	**118,072**	**177,106**			**23,646.2**
	2017	**265,361**	**106,147**	**159,214**			**23,167.7**

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Executive Board Members Holdings

LTI 2016 Plan

Quantity of Share Units	Year Granted	Holding on 1/1/2018	Granted		**Holding on 12/31/2018**
			Retention Share Units (40%)	Performance Share Units (60%)	
Bill McDermott (CEO)	2018	0	34,336	51,505	85,841
	2017	89,217	0	0	89,217
	2016	122,423	0	0	122,423
Robert Enslin	2018	0	11,336	17,004	28,340
	2017	29,454	0	0	29,454
	2016	40,417	0	0	40,417
Adaire Fox-Martin	2018	0	10,630	15,944	26,574
	2017	18,539	0	0	18,539
Christian Klein (from 1/1/2018)	2018	0	8,954	13,431	22,385
Michael Kleinemeier	2018	0	10,630	15,944	26,574
	2017	27,619	0	0	27,619
	2016	37,898	0	0	37,898
Bernd Leukert	2018	0	11,972	17,959	29,931
	2017	31,109	0	0	31,109
	2016	42,687	0	0	42,687
Jennifer Morgan	2018	0	10,630	15,944	26,574
	2017	18,539	0	0	18,539
Luka Mucic	2018	0	10,630	15,944	26,574
	2017	27,619	0	0	27,619
	2016	37,898	0	0	37,898
Stefan Ries	2018	0	8,954	13,431	22,385
	2017	23,265	0	0	23,265
	2016	23,987	0	0	23,987
Total		**570,671**	**118,072**	**177,106**	**865,849**

The Share Units granted in 2018 have a remaining term of 3.08 years, the share units granted in 2017 have a remaining term of 2.08 years, and the share units granted in 2016 have a remaining term of 1.08 years.

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RSU Milestone Plan 2015

Quantity of RSUs	Year Granted	Holding on 1/1/2018	Exercised	**Holding on 12/31/2018**
Bill McDermott (CEO)	2015	113,667	0	113,667
	2014	59,488	59,488	0
Robert Enslin	2015	39,985	0	39,985
	2014	14,148	14,148	0
Michael Kleinemeier	2015	5,221	0	5,221
Bernd Leukert	2015	41,578	0	41,578
	2014	14,148	14,148	0
Luka Mucic	2015	41,130	0	41,130
	2014	10,757	10,757	0
Total		**340,122**	**98,541**	**241,581**

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

Total Expense for Share-Based Payment

thousands	2018	2017
Bill McDermott (CEO)	2,155.8	7,684.4
Robert Enslin	727.0	2,181.9
Adaire Fox-Martin	796.1	309.7
Christian Klein (from 1/1/2018)	442.2	-
Michael Kleinemeier	914.2	1,509.8
Bernd Leukert	775.2	2,287.4
Jennifer Morgan	796.1	309.7
Luka Mucic	675.8	2,059.0
Stefan Ries	772.0	1,049.3
Total	**8,054.4**	**17,391.2**

Total expense for the share-based payment plans of Executive Board members was recorded 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, and Stefan Ries are entitled to receive a retirement

pension when they reach the retirement age of 62 and retire from their Executive Board seat; or a disability pension depending on 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.

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Total Defined Benefit Obligations (DBO) and Net Defined Benefit Liability (Asset) to Executive Board Members

thousands	Bill McDermott (CEO)	Adaire Fox-Martin1)	Christian Klein (from 1/1/2018) 1)	Michael Kleinemeier1)	Bernd Leukert1)	Luka Mucic1)	Stefan Ries1)	Total
DBO 1/1/2017	1,459.2	-	-	154.9	451.6	444.6	257.9	2,768.2
Less plan assets market value 1/1/2017	-	-	-	181.4	389.7	347.6	116.7	1,035.4
Net Defined Benefit Liability (Asset) 1/1/2017	**1,459.2**	**-**	**-**	**-26.5**	**61.9**	**97.0**	**141.2**	**1,732.8**
DBO change in 2017	-148.7	93.5	-	117.0	132.9	141.3	86.7	422.7
Plan assets change in 2017	-	100.7	-	164.5	151.2	143.1	159.1	718.6
DBO 12/31/2017	1,310.5	93.5	-	271.9	584.5	585.9	344.6	3,190.9
Less plan assets market value 12/31/2017	-	100.7	-	345.9	540.9	490.7	275.8	1,754.0
Net Defined Benefit Liability (Asset) 12/31/2017	**1,310.5**	**-7.2**	**-**	**-74.0**	**43.6**	**95.2**	**68.8**	**1,436.9**
DBO change in 2018	106.2	89.9	112.8	66.7	-16.1	-42.1	-67.2	250.2
Plan assets change in 2018	-	156.3	141.3	161.7	153.9	145.0	143.5	901.7
DBO 12/31/2018	1,416.7	183.4	112.8	338.6	568.4	543.8	277.4	3,441.1
Less plan assets market value 12/31/2018	-	257.0	141.3	507.6	694.8	635.7	419.3	2,655.7
Net Defined Benefit Liability (Asset) 12/31/2018	**1,416.7**	**-73.6**	**-28.5**	**-169.0**	**-126.4**	**-91.9**	**-141.9**	**785.4**

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

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

Annual Pension Entitlement

thousands	**Vested on 12/31/2018**	Vested on 12/31/2017
Bill McDermott (CEO)1)	105.1	89.5
Adaire Fox-Martin	7.3	2.9
Christian Klein (from 1/1/2018)	4.1	-
Michael Kleinemeier	14.8	9.8
Bernd Leukert	24.6	19.4
Luka Mucic	23.2	18.1
Stefan Ries	12.6	8.5

1) 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 2018.

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.

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Net Present Values of the Postcontractual Non-Compete Abstention Payments

thousands	Contract Term Expires	**Net Present Value of Postcontractual Non-Compete Abstention Payment1)**
Bill McDermott (CEO)	3/31/2021	5,493
Robert Enslin	3/31/2021	2,197
Adaire Fox-Martin	4/30/2020	1,964
Christian Klein (from 1/1/2018)	12/31/2020	1,772
Michael Kleinemeier	12/31/2019	1,952
Bernd Leukert	3/31/2021	2,070
Jennifer Morgan	4/30/2020	1,934
Luka Mucic	3/31/2021	1,937
Stefan Ries	3/31/2024	1,716
Total		**21,035**

1) For the purpose of this calculation, the following discount rates have been applied: Bill McDermott 0.16% (2017: 0.16%); Robert Enslin 0.16% (2017: 0.16%); Adaire Fox.Martin 0.04% (2017: 0.01%); Christian Klein 0.13%; Michael Kleinemeier 0.03% (2017: 0.01%); Bernd Leukert 0.16% (2017: 0.16%); Jennifer Morgan 0.04% (2017: 0.01%); Luka Mucic 0.16% (2017: 0.16%); Stefan Ries 0.71% (2017: 0.09%).

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 Christian Klein to the Executive Board, the Supervisory Board abstained from the waiting period of one year in consideration of his long-term successful tenure with SAP.

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

A third party is required to make a mandatory takeover offer to the shareholders of SAP SE under the German Securities Acquisition and Takeover Act;

SAP SE merges with another company and becomes the subsumed entity;

A control or profit transfer agreement is concluded with SAP SE as the dependent company.

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

Postcontractual Non-Compete Provisions

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

Permanent Disability

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

Payments to Former Executive Board Members

In 2018, we paid pension benefits of 2,054,300 to Executive Board members who had retired before January 1, 2018 (2017: 1,997,000). At the end of the year, the DBO for former Executive Board members was 38,373,500 (2017: 39,993,100). Plan assets of 31,615,100 are available to meet these obligations (2017: 31,944,100).

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 2018 or the previous year.

As far as the law permits, SAP SE and its affiliated companies in Germany and elsewhere indemnify and hold harmless their respective directors and officers against and from the claims of third parties. To this end, we maintain directors and officers (D&O) group liability insurance. The policy is annual and is renewed from year to year. The insurance covers the personal liability of the insured group for financial loss caused by its managerial acts and omissions. The current D&O policy includes an individual deductible for Executive Board members of SAP SE as required by section 93 (2) of the German Stock Corporation Act.

Compensation for Supervisory Board Members

Compensation System

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

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

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

Any members of the Supervisory Board 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.

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Supervisory Board Members Compensation in 2018

thousands	**2018**			2017		
	Fixed Compensation	**Compensation for Committee Work**	**Total**	Fixed Compensation	Compensation for Committee Work	Total
Prof. Dr. h.c. mult. Hasso Plattner (chairperson)	275.0	88.0	363.0	275.0	88.0	363.0
Margret Klein-Magar (deputy chairperson)	220.0	22.0	242.0	220.0	27.5	247.5
Pekka Ala-Pietilä	165.0	40,3	205.3	165.0	33.0	198.0
Panagiotis Bissiritsas	165.0	38.5	203.5	165.0	38.5	203.5
Martin Duffek	165.0	38.5	203.5	165.0	33.0	198.0
Aicha Evans (from 7/1/2017)	165.0	29.3	194.3	82.5	11.0	93.5
Prof. Anja Feldmann (until 12/31/2018)	165.0	19.3	184.3	165.0	22.0	187.0
Diane Greene (from 5/17/2018)	110.0	2.8	112.8	NA	NA	NA
Prof. Dr. Wilhelm Haarmann (until 5/17/2018)	68.5	13.8	82.3	165.0	44.0	209.0
Andreas Hahn	165.0	22.0	187.0	165.0	22.0	187.0
Prof. Dr. Gesche Joost	165.0	22.0	187.0	165.0	22.0	187.0
Lars Lamadé	165.0	22.0	187.0	165.0	22.0	187.0
Bernard Liautaud	165.0	33.0	198.0	165.0	33.0	198.0
Christine Regitz	165.0	22.0	187.0	165.0	22.0	187.0
Dr. Friederike Rotsch (from 5/17/2018)	110.0	18.3	128.3	NA	NA	NA
Dr. Erhard Schipporeit	165.0	46.8	211.8	165.0	33.0	198.0
Robert Schuschnig-Fowler	165.0	22.0	187.0	165.0	16.5	181.5
Dr. Sebastian Sick	165.0	22.0	187.0	165.0	22.0	187.0
Jim Hagemann Snabe (until 6/30/2017)	NA	NA	NA	82.5	11.0	93.5
Pierre Thiollet	165.0	11.0	176.0	165.0	11.0	176.0
Prof. Dr.-Ing. Dr.-Ing. E.h. Klaus Wucherer (until 5/17/2018)	68.5	6.9	75.4	165.0	16.5	181.5
Total	**3,162.0**	**540.4**	**3,702.4**	**3,135.0**	**528.0**	**3,663.0**

In 2018, we received services from members of the Supervisory Board (including services from employee representatives on the Supervisory Board in their capacity as employees of SAP) in the amount of 1,206,500 (2017: 1,269,700). This amount includes fees paid in 2018 to Linklaters LLP in Frankfurt am Main, Germany (of which Wilhelm Haarmann, who was a Supervisory Board member until May 17, 2018, is a partner), of 0 (2017: 106,900).

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 2018 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

As at December 31, 2018, we had 96,498 full-time equivalent (FTE) employees worldwide (December 31, 2017: 88,543). This represents an increase in headcount of 7,955 FTEs in comparison to 2017. The average number of employees in 2018 was 93,709 (2017: 86,999).

We define headcount in FTE as the number of people on permanent employment contracts considering their staffing percentage. Students,

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individuals employed by SAP who are 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 personnel expense for each employee decreased to approximately 124,000 in 2018 (2017: approximately 134,000). This decrease is primarily attributable to a decline of share-based payment expenses as well as lowered average salary expenses in 2018 compared to the previous year. The personnel expense for each employee is defined as the overall personnel expense divided by the average number of employees.

For more information about the number of employees and employee compensation, see the Notes to the Consolidated Financial Statements, *Note (B.2)*.

Employee Headcount by Region and Function

Full-time equivalents			**12/31/2018**				12/31/2017				12/31/2016	
	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total
Cloud and software	6,341	4,268	5,374	15,983	5,869	3,895	4,719	14,482	6,406	4,184	5,412	16,002
Services	8,120	5,736	5,620	19,476	7,536	4,878	4,965	17,379	6,535	4,119	3,967	14,621
Research and development	12,478	5,651	8,930	27,060	11,349	5,250	8,273	24,872	10,525	4,860	7,977	23,363
Sales and marketing	9,843	9,452	4,918	24,213	9,196	9,169	4,854	23,219	8,542	8,999	4,435	21,977
General and administration	2,906	1,970	1,147	6,024	2,676	1,781	1,047	5,504	2,629	1,746	1,018	5,393
Infrastructure	2,160	951	631	3,742	1,732	855	501	3,087	1,584	788	454	2,827
SAP Group (12/31)	**41,848**	**28,029**	**26,620**	**96,498**	**38,357**	**25,827**	**24,359**	**88,543**	**36,222**	**24,696**	**23,265**	**84,183**
Thereof acquisitions	657	952	434	2,043	149	133	7	289	37	172	0	209
SAP Group (months end average)	**40,496**	**27,454**	**25,759**	**93,709**	**37,512**	**25,459**	**24,029**	**86,999**	**34,932**	**23,532**	**22,145**	**80,609**

Due to reorganizations in our SAP Digital Business Services in 2017, some employees were reallocated from cloud and software to services. Numbers for 2017 are therefore not fully comparable to prior year.

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), Concur (Germany) GmbH, as well as the employees of SAP Business Compliance Services 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 separate collective bargaining agreement. Each of SAP France, SAP France Holding, SAP Labs France SAS and Concur (France) SAS are represented by a French works council. The represented unions negotiate agreements with each of SAP France and SAP Labs France SAS.

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 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*.

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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 8, 2019, based on information provided by the Depositary there were 60,474,033 ADRs held of record by 816 registered holders. The ordinary shares underlying such ADRs represented 4.92% 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 8, 2019 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 Shares Beneficially Owned**	
	Number	% of Outstanding
Dietmar Hopp, collectively(1)	67,864,34	5.7
Hasso Plattner, Chairperson Supervisory Board, collectively(2)	77,226,053	6.286
Executive Board Members as a group (9 persons)	60,214	0.005
Supervisory Board Members as a group (18 persons)	77,242,795	6.288
Executive Board Members and Supervisory Board Members as a group (27 persons)(3)	77,303,009	6.293
Options and convertible bonds that are vested and exercisable within 60 days of February 8, 2019, held by Executive Board Members and Supervisory Board Members, collectively	0	NA
BlackRock, Inc.(4)	73,937,685	6.0

(1) The foregoing information is based on a Schedule 13G filed by Dietmar Hopp and other affiliated persons and companies on February 13, 2019.

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

(3) 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 shares as of February 8, 2019.

(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 8, 2019, and has not provided such information. The foregoing information is based on a Schedule 13G filed by BlackRock, Inc. on February 6, 2019.

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.7)* 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.

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Other Financial Information

Legal Proceedings

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

Refer to *Note (G.4)* 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

Executive Board Changes

Effective January 1, 2019, Juergen Mueller was appointed to the Executive Board.

On February 20, 2019, Bernd Leukert and the Supervisory Board mutually agreed that Bernd Leukert will depart SAP and that his membership on the Executive Board ended effective as of the day.

Restructuring

See Note G.9 to our Consolidated Financial Statements for information on the conclusion of Qualtrics and the restructuring program SAP initiated in 2019.

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.

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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 also responsible for monitoring the auditor s independence, 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 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 2018, there were three women on the shareholder representatives side of the Supervisory Board and two women on the employee representatives side from the beginning of 2018 until May 17, 2018, and five women on the shareholder representatives side and two women on the employee representatives side from May 17, 2018, until December 31, 2018. Thus the percentage of women on the Supervisory Board reached the minimum quota of 30% throughout 2018, and even exceeded it during the period from May 17, 2018, until December 31, 2018. The term of office of all eighteen members will end upon the conclusion of the Annual General Meeting of Shareholders in 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

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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 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 Legal Compliance and Integrity Office 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 Legal Compliance and Integrity Office 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 Erhard Schipporeit, 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,

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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 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 ten 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 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 Legal Compliance and Integrity directly reports to the CFO of SAP SE and also has direct communication channels and reporting obligations to the Audit Committee of the Supervisory Board. The Office of

Legal Compliance and Integrity 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.

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The Office of Legal Compliance and Integrity 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

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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 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 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 3 million. Corporations residing in Germany with assets in excess of 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.

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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; http://www.bzst.de). 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.

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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.

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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 2018 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 2019 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 2018-2025) 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 (and also dependent on the euro/U.S. dollar exchange rate at the time of payment of the dividend and the time of refund of the German tax withheld), 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.

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.

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Material Contracts

Callidus Software Inc.

Pursuant to an Agreement and Plan of Merger dated January 29, 2018 by and among Callidus Software Inc. (Callidus), SAP America, Inc., and Emerson One Acquisition Corp., a wholly owned subsidiary of SAP America, Inc., Emerson One Acquisition Corp. commenced a cash tender offer for all of the outstanding shares of Callidus common stock at US$36.00 per share, representing an enterprise value of approximately US$2.4 billion. The transaction closed in the second quarter of 2018.

The preceding description is a summary of the Agreement and Plan of Merger and is qualified in its entirety by the Agreement and Plan of Merger which is incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed with the SEC by Callidus on January 30, 2018.

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.4)* 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 www.sec.gov 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.

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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, 2017 and ending November 24, 2018, the Depositary made direct and indirect payments to SAP in an aggregate amount of US$2,414,387.85 related to the ADR program.

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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 chief executive officer (CEO) 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 CEO and CFO the effectiveness of SAP s disclosure controls and procedures as of December 31, 2018. 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 CEO and CFO. Based on the foregoing, SAP s management, including SAP s CEO and CFO, concluded that as of December 31, 2018, 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 CEO and CFO to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with International Financial Reporting Standards 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, 2018. 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, 2018, 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.

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ITEM 16. [RESERVED]

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our Supervisory Board has determined that Erhard Schipporeit 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 CEO 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.8)* 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 accountant s full-time, permanent employees.

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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 two employee representatives, Panagiotis Bissiritsas and Martin Duffek, 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 2018 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, 2018.

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 New York Stock Exchange (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 through February 21, 2018. In its most recent Declaration of Implementation issued in October 2018, SAP

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declared that it has complied since February 21, 2018, and will comply also in the future, with all recommendations of the GCGC. 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 2018 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. Mr. Erhard Schipporeit who is the Chairman of SAP s Audit Committee meets 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

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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 and Dr. Friederike Rotsch meet the independence requirements of Rule 10A-3 of the Exchange Act. The other two Audit Committee members, Panagiotis Bissiritsas and Martin Duffek, 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 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.

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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-##.

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, 2018, 2017, and 2016.
- Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016.
- Consolidated Statements of Financial Position as of December 31, 2018 and 2017.
- Consolidated Statements of Changes in Equity for the years ended December 31, 2018, 2017 and 2016.

- Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016.

- 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).
2.1	Form of global share certificate for ordinary shares (English translation). (1) 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. (2)
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. (3)
4.10	Agreement and Plan of Merger dated January 29, 2018 by and among Callidus Software Inc. SAP America, Inc., and Emerson One Acquisition Corp.(4)
8	For a list of our subsidiaries see *Note (G.10)* to our Consolidated Financial Statements in *Item 18. Financial Statements* .
12.1	Certification of Bill McDermott, Chief Executive Officer, required by Rule 13a-14(a) or Rule 15d-14(a).
12.2	Certification of Luka Mucic, Chief Financial Officer, required by Rule 13a-14(a) or Rule 15d-14(a).
13.1	Certification of Bill McDermott, 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 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 XBRL Instance Document
101.	SCH XBRL Taxonomy Schema Linkbase Document
101.	CAL XBRL Taxonomy Calculation Linkbase Document
101.	DEF XBRL Taxonomy Definition Linkbase Document
101.	LAB XBRL Taxonomy Labels Linkbase Document
101.	PRE XBRL Taxonomy Presentation Linkbase Document

(1) 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.

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(2) 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.

(3) 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.

(4) Incorporated by reference to Exhibit 2.1 to Callidus Software Inc. s Current Report on Form 8-K filed with the Commission on January 30, 2018.

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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/ BILL MCDERMOTT

Name: Bill McDermott
Title: Chief Executive Officer

Dated: February 28, 2019

By: /s/ LUKA MUCIC

Name: Luka Mucic
Title: Chief Financial Officer

Dated: February 28, 2019

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SAP SE AND SUBSIDIARIES

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Report of Independent registered public accounting firm

To the Shareholders and Supervisory Board of SAP SE:

Opinion 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, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, 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, 2018, 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, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, 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, 2018 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 Notes A.5 to the consolidated financial statements, the Company has changed its method of accounting for revenue from contracts with customers in 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.

/s/KPMG AG Wirtschaftsprüfungsgesellschaft

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We have served as the Company s auditor since 2002.

Mannheim, Germany

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February 20, 2019

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SAP SE AND SUBSIDIARIES

CONSOLIDATED FINANCIAL STATEMENTS IFRS

Consolidated Income Statements of SAP Group for the Years Ended December 31

millions, unless otherwise stated	Notes	2018	2017	2016
Cloud subscriptions and support		4,993	3,769	2,993
Software licenses		4,647	4,872	4,859
Software support		10,981	10,908	10,571
Software licenses and support		15,628	15,780	15,431
Cloud and software		**20,622**	**19,549**	**18,424**
Services		**4,086**	**3,912**	**3,639**
Total revenue	(A.1), (C.2)	**24,708**	**23,461**	**22,062**
Cost of cloud subscriptions and support		2,063	1,660	1,313
Cost of software licenses and support		2,092	2,234	2,182
Cost of cloud and software		4,160	3,893	3,495
Cost of services		3,302	3,158	3,089
Total cost of revenue		**7,462**	**7,051**	**6,583**
Gross profit		**17,246**	**16,410**	**15,479**
Research and development		3,624	3,352	3,044
Sales and marketing		6,781	6,924	6,265
General and administration		1,093	1,075	1,005
Restructuring	(B.6)	19	182	23
Other operating income/expense, net		20	1	3
Total operating expenses		**19,005**	**18,584**	**16,923**
Operating profit		**5,703**	**4,877**	**5,135**
Other non-operating income/expense, net	(C.3)	**56**	**35**	**234**
Finance income		371	476	230
Finance costs		418	288	259
Financial income, net	(C.4)	**47**	**188**	**29**
Profit before tax	(C.2)	**5,600**	**5,029**	**4,872**
Income tax expense	(C.5)	1,511	983	1,242
Profit after tax		**4,088**	**4,046**	**3,629**
Attributable to owners of parent		4,083	4,008	3,642
Attributable to non-controlling interests		6	38	13
Earnings per share, basic (in)	(C.6)	**3.42**	**3.35**	**3.04**
Earnings per share, diluted (in)	(C.6)	**3.42**	**3.35**	**3.04**

The accompanying Notes are an integral part of these Consolidated Financial Statements.

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Consolidated Statements of Comprehensive Income of SAP Group for the Years Ended December 31

millions	Notes	2018	2017	2016
Profit after tax		**4,088**	**4,046**	**3,629**
Items that will not be reclassified to profit or loss				
Remeasurements on defined benefit pension plans, before tax		12	29	10
Income taxes relating to remeasurements on defined benefit pension plans		1	7	2
Remeasurements on defined benefit pension plans, net of tax		11	22	8
Other comprehensive income for items that will not be reclassified to profit or loss, net of tax		**11**	**22**	**8**
Items that will be reclassified subsequently to profit or loss				
Gains (losses) on exchange differences on translation, before tax		910	2,730	865
Reclassification adjustments on exchange differences on translation, before tax		0	0	1
Exchange differences, before tax		910	2,730	864
Income taxes relating to exchange differences on translation		0	2	25
Exchange differences, net of tax	(E.2)	910	2,732	839
Gains (losses) on remeasuring available-for-sale financial assets, before tax		0	114	18
Reclassification adjustments on available-for-sale financial assets, before tax		0	250	26
Available-for-sale financial assets, before tax	(F.2), (F.3)	0	136	44
Income taxes relating to available-for-sale financial assets		0	1	1
Available-for-sale financial assets, net of tax	(E.2)	0	135	43
Gains (losses) on cash flow hedges/cost of hedging, before tax		10	81	24
Reclassification adjustments on cash flow hedges/cost of hedging, before tax		22	41	8
Cash flow hedges/cost of hedging, before tax	(F.1), (F.3)	32	39	15
Income taxes relating to cash flow hedges/cost of hedging		9	10	4
Cash flow hedges/cost of hedging, net of tax	(E.2)	23	29	11
Other comprehensive income for items that will be reclassified to profit or loss, net of tax		**887**	**2,833**	**785**
Other comprehensive income, net of tax		**898**	**2,816**	**777**
Total comprehensive income		**4,986**	**1,229**	**4,406**
Attributable to owners of parent		4,980	1,191	4,418
Attributable to non-controlling interests		6	38	13

The accompanying Notes are an integral part of these Consolidated Financial Statements.

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Consolidated Statements of Financial Position of SAP Group as at December 31

millions	Notes	2018	2017
Cash and cash equivalents	(E.3)	8,627	4,011
Other financial assets	(D.5), (E.3)	448	990
Trade and other receivables	(A.2)	6,362	5,899
Other non-financial assets	(A.3), (G.1)	889	725
Tax assets		293	306
Total current assets		**16,620**	**11,930**
Goodwill	(D.2)	23,725	21,271
Intangible assets	(D.3)	3,227	2,967
Property, plant, and equipment	(D.4)	3,553	2,967
Other financial assets	(D.5), (E.3)	1,536	1,155
Trade and other receivables	(A.2)	118	118
Other non-financial assets	(A.3), (G.1)	1,301	687
Tax assets		397	352
Deferred tax assets	(C.5)	1,015	1,037
Total non-current assets		**34,871**	**30,554**
Total assets		**51,491**	**42,484**
Trade and other payables		1,486	1,151
Tax liabilities		611	597
Financial liabilities	(E.3)	1,125	1,561
Other non-financial liabilities	(B.5), (G.2)	4,120	3,982
Provisions	(A.4), (B.4), (B.5), (B.6)	110	149
Contract liabilities/deferred income	(A.1)	3,028	2,771
Total current liabilities		**10,481**	**10,210**
Trade and other payables		129	119
Tax liabilities		495	434
Financial liabilities	(E.3)	10,553	5,034
Other non-financial liabilities	(B.5), (G.2)	501	514
Provisions	(A.4), (B.4), (B.5), (B.6)	270	328
Deferred tax liabilities	(C.5)	97	251
Contract liabilities/deferred income	(A.1)	88	79
Total non-current liabilities		**12,133**	**6,759**
Total liabilities		**22,614**	**16,969**
Issued capital		1,229	1,229
Share premium		543	570
Retained earnings		27,407	24,769
Other components of equity		1,234	508
Treasury shares		1,580	1,591
Equity attributable to owners of parent		**28,832**	**25,484**
Non-controlling interests		**45**	**31**
Total equity	(E.2)	**28,877**	**25,515**
Total equity and liabilities		**51,491**	**42,484**

The accompanying Notes are an integral part of these Consolidated Financial Statements.

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Consolidated Statements of Changes in Equity of SAP Group for the Years Ended December 31

millions	Equity Attributable to Owners of Parent						Non-Controlling Interests	Total Equity
	Issued Capital	Share Premium	Retained Earnings	Other Components of Equity	Treasury Shares	Total		
Notes	(E.2)	(E.2)		(E.2)	(E.2)			
1/1/2016	**1,229**	**558**	**20,033**	**2,561**	**1,124**	**23,257**	**28**	**23,285**
Profit after tax			3,642			3,642	13	3,629
Other comprehensive income			8	785		777		777
Comprehensive income			**3,634**	**785**		**4,418**	**13**	**4,406**
Share-based payments		16				16		16
Dividends			1,378			1,378		1,378
Reissuance of treasury shares under share-based payments		25			25	50		50
Other changes			2			2	6	4
12/31/2016	**1,229**	**599**	**22,287**	**3,346**	**1,099**	**26,361**	**21**	**26,383**
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
Changes in non-controlling interests			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			**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
12/31/2018	**1,229**	**543**	**27,407**	**1,234**	**1,580**	**28,832**	**45**	**28,877**

The accompanying Notes are an integral part of these Consolidated Financial Statements.

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Consolidated Statements of Cash Flows of SAP Group for the Years Ended December 31

millions	Notes	2018	2017	2016
Profit after tax		**4,088**	**4,046**	**3,629**
Adjustments to reconcile profit after tax to net cash flow from operating activities:				
Depreciation and amortization	(D.2) (D.4	1,362	1,272	1,268
Income tax expense	(C.5)	1,511	983	1,242
Financial income, net	(C.4)	47	183	29
Decrease/increase in sales and bad debt allowances on trade receivables		67	32	51
Other adjustments for non-cash items		14	34	39
Decrease/increase in trade and other receivables		136	309	675
Decrease/increase in other assets		454	355	243
Decrease/increase in trade payables, provisions, and other liabilities		93	389	513
Decrease/increase in contract liabilities/deferred income		561	718	368
Interest paid		251	200	190
Interest received		99	88	79
Income taxes paid, net of refunds		1,687	1,332	1,477
Net cash flows from operating activities		**4,303**	**5,045**	**4,628**
Business combinations, net of cash and cash equivalents acquired		2,036	291	106
Cash flows from derivative financial instruments related to business combinations		103	0	0
Total cash flows for business combinations, net of cash and cash equivalents acquired	(D.1)	2,140	291	106
Purchase of intangible assets and property, plant, and equipment		1,453	1,275	1,001
Proceeds from sales of intangible assets or property, plant, and equipment		57	97	63
Purchase of equity or debt instruments of other entities		1,013	2,914	1,549
Proceeds from sales of equity or debt instruments of other entities		1,488	3,272	793
Net cash flows from investing activities		**3,066**	**1,112**	**1,799**
Dividends paid	(E.2)	1,671	1,499	1,373
Dividends paid on non-controlling interests		7	45	0
Purchase of treasury shares	(E.2)	0	500	0
Proceeds from reissuance of treasury shares		0	0	27
Proceeds from borrowings	(E.3)	6,368	27	443
Repayments of borrowings	(E.3)	1,407	1,391	1,800
Transactions with non-controlling interests		0	2	3
Net cash flows from financing activities		**3,283**	**3,406**	**2,705**
Effect of foreign currency rates on cash and cash equivalents		**97**	**213**	**167**
Net decrease/increase in cash and cash equivalents		**4,617**	**309**	**291**
Cash and cash equivalents at the beginning of the period	(E.3)	**4,011**	**3,702**	**3,411**
Cash and cash equivalents at the end of the period	(E.3)	**8,627**	**4,011**	**3,702**

The accompanying Notes are an integral part of these Consolidated Financial Statements.

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SAP SE AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(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 2018 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, 2018. There were no standards or interpretations as at December 31, 2018, impacting our Consolidated Financial Statements for the years ended December 31, 2018, 2017, and 2016, 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 20, 2019, for submission to our Supervisory Board.

All amounts included in the Consolidated Financial Statements are reported in millions of euros (millions) except where otherwise stated. As figures 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 Consolidated Income Statements or our Consolidated Statements of Financial Position are marked by the symbols and , respectively.

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, disclosures are marked with the symbol and framed by 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 Securities
(E.3)	Liquidity
(F.1)	Financial Risk Factors and Risk Management
(F.2)	Fair Value Disclosures on Financial Instruments
(G.1)	Other Non-Financial Assets
(G.4)	Other Litigation, Claims, and Legal Contingencies
(G.6)	Executive and Supervisory Board Compensation

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 and liabilities for cash-settled share-based payments are measured at fair value. In accordance with IFRS 9, financial assets with cash flows that are not solely payments of principal or interest are also 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.

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

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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 Venezuela and Argentina are translated at closing rates. Most significantly impacted by this accounting are the following:

Total revenue (decrease of 19 million in 2018)

Operating profit (decrease of 12 million in 2018)

Other non-operating income/expense (gain of 25 million in 2018)

Equity (retained earnings and other comprehensive income) (decrease of 32 million as at December 31, 2018)

Total liabilities (increase of 19 million as at December 31, 2018)

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		
		2018	2017	**2018**	2017	2016
U.S. dollar	USD	1.1450	1.1993	1.1815	1.1315	1.1045
Pound sterling	GBP	0.8945	0.8872	0.8847	0.8770	0.8206
Japanese yen	JPY	125.85	135.01	130.41	126.85	119.77
Swiss franc	CHF	1.1269	1.1702	1.1549	1.1159	1.0886
Indian rupee	INR	79.7298	76.6055	80.7277	73.9595	73.9685
Australian dollar	AUD	1.6220	1.5346	1.5799	1.4794	1.4850

Cost of Cloud and Software

Cost of cloud and software includes the costs incurred in producing the goods and providing the services that generate cloud and software revenue. Consequently, this line item primarily includes employee expenses relating to these services, amortization of acquired intangibles, fees for third-party licenses, shipping, ramp-up costs, and depreciation of our property, plant, and equipment (for example, of our data centers in which we host our cloud solutions).

Cost of Services

Cost of services includes the costs incurred in providing the services that generate service revenue, such as consulting and training activities, messaging, as well as certain application management services for our customers and our partners.

Research and Development

Research and development includes the costs incurred by activities related to the development of software solutions (new products, updates, and enhancements) including resource and hardware costs for the development systems. For more information about the recognition of internally generated intangible assets from development, see *Note (D.3)*.

Sales and Marketing

Sales and marketing includes costs incurred for the selling and marketing activities related to our software and cloud solutions and our service portfolio.

General and Administration

General and administration includes costs related to finance and administrative functions, human resources, and general management as long as they are not directly attributable to one of the other operating expense line items.

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:

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Note	Significant Accounting Policies
(A.1)	Revenue recognition
(A.2)	Valuation of trade receivables
(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)
(G.4)	Accounting for legal contingencies

Our management periodically discusses these significant accounting policies with the Audit Committee of our Supervisory Board.

New Accounting Standards Not Yet Adopted

The standards and interpretations (relevant to the Group) that are issued, but not yet effective, up to the date of issuance of the Group s financial statements are discussed below. We intend to adopt these standards when they become effective:

On January 13, 2016, the IASB issued IFRS 16 Leases. This new standard is effective for us starting January 1, 2019. We have decided to apply the modified retrospective approach, which 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. The new standard significantly impacts the lease accounting by lessees 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 will now change because we will recognize a 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 decided to use 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). When measuring the right-of-use asset, there are two options in transition. We plan to apply the retrospective approach for our larger leases (primarily facility leases), while smaller leases will be 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.

Prior to the adoption of IFRS 16, we established a project across SAP s finance and business functions. This project included the implementation of a new SAP-based lease accounting and reporting solution, and the development of IFRS 16 lease accounting policies and business processes to support those policies. In addition to this, we have provided training for the relevant stakeholders within the organization.

The vast majority of the impact comes from our leased facilities, data centers, and cars. These operating leases were previously off-balance-sheet items (lease payments were expensed directly to rent expense over the lease term) under IAS 17. We estimate the total assets and total liabilities will amount to approximately 1.9 billion and 2.0 billion, respectively, as at January 1, 2019 (the date of initially applying IFRS 16). The difference between these two amounts (less than 0.1 billion) is recorded as an adjustment to retained earnings as of the date of initial application. This difference is primarily due to interest accruing retrospectively at a higher rate in earlier years and decreasing over the lease term, while depreciation is recorded on a straight-line basis. The adoption of IFRS 16 is expected to have a favorable impact on operating profit in 2019, since a portion of the costs that were previously classified as rental expenses are classified as interest expense and thus recorded outside operating profit. Based on the Group s leases as of January 1, 2019, operating profit is expected to increase by substantially less than 0.1 billion. The actual impact on our profits depends not only on the lease agreements in effect at the time of adoption but also on new lease agreements entered into or terminated in 2019. IFRS 16 has also an impact on how lease payments are presented in the cash flow statement. This will result in an increase in cash flows from operating activities and a decline in cash flows from financing activities. Cash flows from operating activities is expected to increase by approximately 0.3 billion to 0.4 billion.

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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 breakdowns, and information about our trade receivables and customer-related obligations. Furthermore, in this section we disclose the most significant differences to prior-year figures resulting from the application of IFRS 15 Revenue from Contracts with Customers (see *Note (A.5)*).

(A.1) Revenue

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 subscriptions and support revenue, our software license revenue, and our software support revenue.

Revenue from cloud subscriptions and support 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 (IaaS), that is, hosting and related application management services for software hosted by SAP or third parties engaged by SAP, where the customer has the right to take possession of the software

§ Premium cloud subscription 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.

Accounting Policies, Judgments, and Estimates

Identification of Contract

We frequently enter into multiple contracts with the same customer that we treat, for accounting purposes, as one contract if the contracts 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

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customer that the customer would not receive without entering into that contract (material right options). In this judgment, we consider 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 subscription 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-plus-margin 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 stand-alone selling prices periodically or whenever facts and circumstances change to ensure the most objective input parameters available are used.

Recognition of Revenue

Cloud subscription and support 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 or customer-specific software:

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.

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

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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 multi-period 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	**2018**	2017	2016
Germany	3,658	3,352	3,034
Rest of EMEA	7,446	7,063	6,721
EMEA	**11,104**	**10,415**	**9,755**
United States	7,880	7,436	7,167
Rest of Americas	1,832	1,911	1,763
Americas	**9,713**	**9,347**	**8,931**
Japan	963	885	825
Rest of APJ	2,928	2,814	2,552
APJ	**3,891**	**3,699**	**3,377**
SAP Group	**24,708**	**23,461**	**22,062**

Major Revenue Classes by Region

millions	Cloud Subscriptions and Support Revenue			Cloud and Software Revenue		
	2018	2017	2016	**2018**	2017	2016
EMEA	1,441	1,029	703	9,339	8,759	8,192
Americas	2,941	2,321	2,000	7,973	7,666	7,366
APJ	611	419	290	3,310	3,124	2,865
SAP Group	**4,993**	**3,769**	**2,993**	**20,622**	**19,549**	**18,424**

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, 2018, is 31.3 billion. This amount mostly comprises obligations to provide software support or cloud subscriptions and support, 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

estimation is judgmental, 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 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 132 million, mainly resulting from changes in estimates related to percentage-of-completion-based contracts and changes in estimates of variable considerations.

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Contract Balances

Contract liabilities as at December 31, 2018, were 3.1 billion (January 1, 2018: 3.5 billion).

Increases in contract liabilities mainly result from billing and invoices becoming due (7.0 billion). Decreases in contract liabilities mainly result from satisfying performance obligations (7.5 billion). The Callidus acquisition contributed to the increase in the contract liabilities balance (for more information, see *Note (D.1)*).

The amount of revenue recognized in the reporting period that was included in the contract liability balance as at January 1, 2018, was 3.2 billion.

(A.2) Trade and Other Receivables

Accounting Policies, Management Judgments, and Sources of Estimation Uncertainty

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. Changes in our estimates about the loss allowance could materially impact reported assets and expenses, and our profit could be adversely affected if actual credit losses exceed our estimates.

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Trade and Other Receivables

millions	**2018**			2017		
	Current	Non-Current	Total	Current	Non-Current	Total
Trade receivables, net	6,182	6	6,188	5,809	1	5,810
Other receivables	180	112	293	90	116	207
Total	**6,362**	**118**	**6,480**	**5,899**	**118**	**6,017**

Contract assets as at December 31, 2018, were 116 million (January 1, 2018: 14 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)*. For information about the transition to IFRS 9, see *Note (F.3)*.

(A.3) Capitalized Cost from Contracts with Customers

Accounting Policies, Judgments, and Estimates

Incremental Costs of Obtaining Customer Contracts

Capitalized costs from customer contracts are classified as 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 probable renewals thereof are allocated to these performance obligations and probable renewals relative to the 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 eight years depending on the type of offering. 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.

Costs 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 subscriptions and support.

Capitalized Cost from Contracts with Customers

millions			**2018**
	Current	Non-Current	Total
Capitalized cost of obtaining customer contracts	326	1,006	1,332
Capitalized cost to fulfill customer contracts	35	66	101
Capitalized contract cost	**361**	**1,072**	**1,433**
Other non-financial assets	889	1,301	2,191
Capitalized contract cost as % of other non-financial assets	41	82	65

As at December 31, 2017, before application of IFRS 15, capitalized contract costs were 696 million, of which 199 million were current and 497 million were non-current.

Amortization expenses in 2018 for the costs of obtaining customer contracts and for the costs of fulfilling customer contracts were 231 million and 50 million respectively.

(A.4) Customer-Related Provisions

Accounting Policies, Judgments, and Estimates

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.

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

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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.

(A.5) Adoption of IFRS 15

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 of January 1, 2018. This practical expedient affected both the transition adjustment amount recognized in retained earnings and our revenues and expenses.

On adopting IFRS 15, SAP changed several of its accounting policies. Under the cumulative catch-up approach, prior years (including the prior-period numbers presented in the primary financial statements) are not restated to conform to the new policies.

The impacts of the policy change in 2018 were as follows:

Software license and support revenues experienced a benefit of 170 million, with most of the difference resulting from:

§ Exercise of customer software purchase options granted in prior years, which result in software revenue

§ Revised recognition patterns for on-premise software subscription contracts, which combine the delivery of software and support service and the obligation to deliver, in the future, unspecified software products

§ Revised recognition patterns for contracts that combine customer-specific on-premise software development agreements and the sale of standard on-premise software

Together with other offsetting effects, this resulted in a benefit of 158 million on total revenue.

Operating expenses benefitted, in cost of sales and marketing, in the amount of 239 million from higher capitalization of sales commissions net of higher amortization of amounts capitalized.

The abovementioned revenue and expense effects, together with other insignificant effects, resulted in a net positive impact on operating profit of approximately 399 million.

As at December 31, 2018, balance sheet items are affected by the application of IFRS 15 as compared to our pre-IFRS 15 accounting policies as follows:

Non-current and current other non-financial assets were higher by 336 million and 64 million respectively (January 1, 2018: higher by 132 million and 26 million respectively) due to the higher capitalization of sales commissions.

Trade and other receivables and contract liabilities were lower by 132 million and 188 million respectively (January 1, 2018: higher by 560 million and 650 million respectively), resulting from changes in the timing of and amounts recognized as contract balances.

Provisions were lower by 4 million (January 1, 2018: lower by 25 million), reflecting lower provisions for onerous customer contracts.

Intangible assets were higher by 37 million (January 1, 2018: higher by 14 million), due to the capitalization of costs for certain custom on-premise software development arrangements.

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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.6)* 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 equivalents				**12/31/2018**				12/31/2017				12/31/2016
	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total	EMEA	Americas	APJ	Total
Cloud and software	6,341	4,268	5,374	15,983	5,869	3,895	4,719	14,482	6,406	4,184	5,412	16,002
Services	8,120	5,736	5,620	19,476	7,536	4,878	4,965	17,379	6,535	4,119	3,967	14,621
Research and development	12,478	5,651	8,930	27,060	11,349	5,250	8,273	24,872	10,525	4,860	7,977	23,363
Sales and marketing	9,843	9,452	4,918	24,213	9,196	9,169	4,854	23,219	8,542	8,999	4,435	21,977
General and administration	2,906	1,970	1,147	6,024	2,676	1,781	1,047	5,504	2,629	1,746	1,018	5,393
Infrastructure	2,160	951	631	3,742	1,732	855	501	3,087	1,584	788	454	2,827
SAP Group	**41,848**	**28,029**	**26,620**	**96,498**	**38,357**	**25,827**	**24,359**	**88,543**	**36,222**	**24,696**	**23,265**	**84,183**
(12/31)												
Thereof acquisitions	657	952	434	2,043	149	133	7	289	37	172	0	209
SAP Group (months end average)	**40,496**	**27,454**	**25,759**	**93,709**	**37,512**	**25,459**	**24,029**	**86,999**	**34,932**	**23,532**	**22,145**	**80,609**

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(B.2) Employee Benefits Expenses

Components of Employee Benefits Expenses

millions	**2018**	2017	2016
Salaries	9,025	8,693	7,969
Social security expense	1,339	1,281	1,135
Share-based payment expense	830	1,120	785
Pension expense	330	312	270
Employee-related restructuring expense	19	180	33
Termination benefits outside of restructuring plans	52	57	37
Employee benefits expense	**11,595**	**11,643**	**10,229**

(B.3) Share-Based Payments

Accounting Policy, Management Judgment, and Sources of Estimation Uncertainty

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.

Most of these awards are described in detail below. SAP has other share-based payment plans not described below, which are, individually and in aggregate, immaterial to our Consolidated Financial Statements.

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.

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.

The operating expense line items in our income statement include the following share-based payment expenses:

Share-Based Payment Expenses by Function

millions	**2018**	2017	2016
Cost of cloud and software	78	115	89
Cost of services	142	158	101
Research and development	210	269	190
Sales and marketing	312	442	292
General and administration	88	135	113
Share-based payments	**830**	**1,120**	**785**
Thereof cash-settled share-based payments	674	963	678
Thereof equity-settled share-based payments	156	157	107

a) Cash-Settled Share-Based Payments

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. A LTI tranche is granted annually and has a term of four years (2016 2018 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,

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additionally, the payout price is higher than the grant price. The performance factor is capped at 150%. If the Peer Group Index performs better than the SAP share price, the performance factor is decreased by the percentage point of the outperformance of the Peer Group Index. All PSUs lapse if the performance factor is below 50%.

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

Long-Term Incentive 2015 Plan (LTI 2015 Plan)

Under the LTI 2015 Plan, we granted members of our former Global Managing Board virtual shares, referred to as share units, between 2012 and 2015 (2012 2015 tranches).

Each share unit vested at the end of the year in which it was granted. The share units are subject to a three-year holding period before payout. The payout depends on the number of vested share units and the SAP share price, which is set directly after the publication of SAP s fourth-quarter results for the last financial year of the respective three-year holding period.

SAP Stock Option Plan 2010 (SOP 2010)

Under the SOP 2010, we granted 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 non-forfeitable once granted if the service agreement ends in the grant year, the number of options is reduced pro rata temporis. Any options not exercised up to the end of their term expire.

The exercise price is 110% of the grant base value, 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 2018 was 67.59 (2017: 58.16) and of outstanding options at year end 2018 was 67.62 (2017: 67.55).

Monetary benefits will be capped at 100% of the exercise.

Restricted Stock Unit Plan Including Move SAP Plan (RSU Plan)

To retain and motivate executives and certain employees, we grant since 2014 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 106.7% (2017: 78.2%; 2016: 85.1%). All share units are paid out in cash upon vesting.

The valuation of our outstanding cash-settled plans was based on the following parameters and assumptions:

Fair Value and Parameters Used at Year End 2018 for Cash-Settled Plans

, unless otherwise stated	LTI 2016 Plan (2016 2018 Tranches)	LTI 2015 Plan (2014 2015 Tranches)	SOP 2010 (2013 2015 Tranches)	RSU Plan (2015 2018 Tranches)
Weighted average fair value as at 12/31/2018	**65.89**	**86.93**	**20.67**	**85.24**
Information how fair value was measured at measurement date				
Option pricing model used	Monte Carlo	Other1)	Monte Carlo	Other1)
Share price	86.93	86.93	86.93	86.93
Risk-free interest rate, depending on maturity (in %)	0.70 to 0.55	NA	0.67 to 0.25	0.69 to 0.31
Expected volatility (in %)	17.9 to 21.4	NA	22.8 to 38.5	NA
Expected dividend yield (in %)	1.63	NA	1.63	1.63
Weighted average remaining life of awards outstanding as at 12/31/2018 (in years)	**2.4**	**0.1**	**1.2**	**1.0**

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 of the valuation date.

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Fair Value and Parameters Used at Year End 2017 for Cash-Settled Plans

, unless otherwise stated	LTI 2016 Plan (2016 2017 Tranches)	LTI 2015 Plan (2013 2015 Tranches)	SOP 2010 (2011 2015 Tranches)	RSU Plan (2014 2017 Tranches)
Weighted average fair value as at 12/31/2017	**84.16**	**92.40**	**26.45**	**92.08**
Information how fair value was measured at measurement date				
Option pricing model used	Monte Carlo	Other1)	Monte Carlo	Other1)
Share price	93.45	93.45	93.45	93.45
Risk-free interest rate, depending on maturity (in %)	0.63 to 0.43	0.81	0.62 to 0.41	0.70 to 0.32
Expected volatility (in %)	17.5 to 19.6	NA	21.1 to 34.5	NA
Expected dividend yield (in %)	1.38	1.38	1.38	1.38
Weighted average remaining life of awards outstanding as at 12/31/2017 (in years)	**2.9**	**0.8**	**1.6**	**1.1**

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 of 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, 2018, was US$277.92 (2017: US$247.24); the expected dividend yield of the index of 1.30% (2017: 1.16%), the expected volatility of the index of 19% to 24% (2017: 16% to 17%), and the expected correlation of

the SAP share price and the index price of 36% to 42% (2017: 41% to 48%) 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.

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Changes in Outstanding Awards Under Our Cash-Settled Plans

Thousands, unless otherwise stated	LTI 2016 Plan (2016 2018 Tranches)	LTI 2015 Plan (2013 2015 Tranches)	SOP 2010 (2011 2015 Tranches)	RSU Plan (2014 2018 Tranches)
12/31/2016	377	684	23,375	10,901
Granted	295	0	0	7,835
Adjustment based upon KPI target achievement	NA	0	NA	124
Exercised	0	152	7,769	4,388
Forfeited	41	0	1,134	704
12/31/2017	**631**	**531**	**14,472**	**13,520**
Granted	295	0	0	8,512
Adjustment based upon KPI target achievement	NA	0	NA	49
Exercised	0	146	6,918	5,840
Forfeited	0	0	478	977
12/31/2018	**926**	**385**	**7,086**	**15,264**
Outstanding awards exercisable as at				
12/31/2017	0	0	4,948	0
12/31/2018	**0**	**0**	**7,086**	**0**
Total carrying amount (in millions) of liabilities as at				
12/31/2017	22	51	354	708
12/31/2018	**30**	**35**	**146**	**774**
Total intrinsic value of vested awards (in millions) as at				
12/31/2017	5	49	172	0
12/31/2018	**3**	**34**	**137**	**0**
Weighted average share price (in) for awards exercised in				
2017	NA	84.94	91.13	90.91
2018	**NA**	**88.27**	**100.61**	**88.67**
Total expense (in millions) recognized in				
2016	7	7	183	458
2017	14	9	221	712
2018	**8**	**3**	**43**	**611**

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Share-Based Payment Balances

millions			**2018**			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Share-based payment liabilities	**714**	**316**	**1,030**	**815**	**340**	**1,154**
Other non-financial liabilities	4,120	501	4,621	3,982	514	4,496
Share-based payment liabilities as % of other non-financial liabilities	17	63	22	20	66	26
Derivatives - Call options for share-based payments	**68**	**0**	**68**	**90**	**0**	**90**
Other financial assets	448	1,536	1,984	990	1,155	2,145
Derivatives - Call options for share-based payments as % of other financial assets	15	0	3	9	0	4

For more information about the derivatives, see *Note (F.1)*.

b) Equity-Settled Share-Based Payments

Own SAP Plan (Own)

Under Own implemented in 2016, employees have the opportunity to purchase SAP shares without any holding period on a monthly basis. 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		**2018**		2017		2016
Own		5.3		5.0		1.4

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 to fulfill these obligations through an agent who administers the equity-settled programs and therefor purchases shares on the open market. Since 2016, we have fulfilled the obligations of Own through an agent.

Recognized Expense for Equity-Settled Plans

millions		**2018**		2017		2016
Own		149		140		77

(B.4) Pension Plans and Similar Obligations

Accounting Policy

Pension expense includes the amounts recorded for our defined benefit and defined contribution plans. Expenses for local state pension plans are included in social security expense. 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 post-retirement plan that is fully financed with qualifying insurance policies, current service cost may become a credit as a result of adjusting the defined benefit liability s carrying amount to the fair value of the qualifying plan assets. Such adjustments are recorded in service cost. Total expenses on defined benefit pension plans comprise related current and past service costs as well as interest income and expense.

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Defined Benefit Plans

Present Value of the Defined Benefit Obligations (DBO) and the Fair Value of the Plan Assets

millions	Domestic Plans		Foreign Plans		Other Post-Employment Plans		Total	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017
Present value of the DBO	**886**	**857**	**418**	**382**	**132**	**118**	**1,436**	**1,357**
Fair value of the plan assets	**878**	**848**	**355**	**319**	**59**	**56**	**1,292**	**1,223**
Net defined benefit liability (asset)	**8**	**9**	**63**	**63**	**73**	**62**	**144**	**134**
Portion of net defined benefit liability (asset) recognized in the Consolidated Statement of Financial Position - % of:								
Non-current other financial assets	0	0	0	0	0	0	0	0
Non-current provisions	3	3	24	20	27	19	54	41

824 million (2017: 794 million) of the present value of the DBO of our domestic plans relate to plans that provide for lump-sum payments not based on final salary, and 356 million (2017: 329 million) of the present value of the defined benefit obligations of our foreign plans relate to plans that provide for annuity payments not based on final salary.

The following 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	Domestic Plans			Foreign Plans			Other Post-Employment Plans		
	2018	2017	2016	**2018**	2017	2016	**2018**	2017	2016
Discount rate	2.3	2.3	2.1	1.0	0.8	0.6	4.2	3.9	4.0

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 Post-Employment Plans			Total		
	2018	2017	2016	**2018**	2017	2016	**2018**	2017	2016	**2018**	2017	2016
Present value of defined benefit obligations if:												
Discount rate was 50 basis points higher	836	806	800	391	357	344	126	114	93	1,353	1,277	1,237
Discount rate was 50 basis points lower	940	912	913	450	411	398	141	123	101	1,531	1,446	1,412

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.

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Plan Asset Allocation

millions	2018		2017	
	Quoted in an Active Market	Not Quoted in an Active Market	Quoted in an Active Market	Not Quoted in an Active Market
Total plan assets	**387**	**905**	**350**	**873**
Thereof: Asset category				
Equity investments	116	0	105	0
Corporate bonds	142	0	122	0
Insurance policies	5	905	5	873

Our expected contribution in 2019 to our domestic and foreign defined benefit pension plans is immaterial. The weighted duration of our defined benefit plans amounted to 12 years as at December 31, 2018, and 13 years as at December 31, 2017.

Total future benefit payments from our defined benefit plans as at December 31, 2018, are expected to be 1,783 million (2017: 1,670 million). Of this amount, 80% has maturities of over five years, and 66% relates to domestic plans.

Defined Contribution Plans/State Plans

We also maintain domestic and foreign defined contribution plans. Amounts contributed by us under such plans are based on a percentage of the employees salaries or on the amount of contributions made by employees. Furthermore, in Germany and some other countries, we make contributions to public pension plans that are operated by national or local government or similar institutions.

Total Expense of Defined Contribution Plans and State Plans

millions	**2018**	2017	2016
Defined contribution plans	280	260	234
State plans	630	603	529
Total expense	**910**	**863**	**763**

(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			**2018**			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Other employee-related liabilities	**2,866**	**185**	**3,051**	**2,599**	**175**	**2,774**
Other non-financial liabilities	4,120	501	4,621	3,982	514	4,496
Other employee-related liabilities as % of other non-financial liabilities	70	37	66	65	34	62

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			**2018**
	Current	Non-Current	Total
Other employee-related provisions as at 1/1/2018	**24**	**117**	**141**
Addition	53	44	97
Utilization	43	107	155
Release	3	2	5
Currency impact	1	0	1
Other employee-related provisions as at 12/31/2018	**25**	**52**	**77**
Provisions	110	270	380
Other employee-related provisions as % of provisions	23	19	20

Employee-related provisions primarily comprise obligations for time credits, severance payments, and jubilee expenses. While most of these

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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

Accounting Policy

We only recognize provisions for restructuring if and when the following occurs:

SAP has designed a program that materially changes the scope of one 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 for restructuring, 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. Materiality in this context refers to the scope of business and the manner in which the business is conducted. Consequently, the term materially cannot necessarily be associated with a certain quantitative threshold. Either the size or the nature of the restructuring, or a combination of both, have to be the determining factor.

Restructuring Expenses			
millions	**2018**	2017	2016
Employee-related restructuring expenses	19	180	33
Onerous contract-related restructuring expenses	0	2	5
Restructuring expenses	**19**	**182**	**38**

Restructuring provisions primarily include employee benefits that result from severance payments for employee terminations and onerous contract costs. The cash outflows associated with employee-related restructuring costs are substantially short-term in nature. Utilization of the portion of the facility-related restructuring provisions depends on the remaining term of the associated lease.

In 2018, no significant new restructuring activities occurred, except for follow-up costs resulting from restructuring programs of previous years and activities limited to individual business units to enhance our profitability and organizational efficiency. In 2017, restructuring provisions related primarily to a restructuring program executed in the Digital Business Services (DBS) board area which went hand-in-hand with the DBS transformation. The transformation was prompted by changing service requirements, as an increasing amount of software deployments are moving to the cloud.

If not presented separately in our income statement, restructuring expenses would have been allocated to the different expense items in our income statement as follows:

Restructuring Expenses by Functional Area

millions	**2018**	2017	2016
Cost of cloud and software	3	55	3
Cost of services	3	113	7
Research and development	3	9	7
Sales and marketing	11	2	10
General and administration	0	2	1
Restructuring expenses	**19**	**182**	**28**

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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 2018, 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 the 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, customer experience solutions, or messaging services, or cover other areas 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). Service revenues also comprise almost all services related to our customer experience solutions (as far as not included in the Customer Experience segment).

The SAP Business Network segment derives its revenues mainly from transaction fees charged for the use of SAP s cloud-based collaborative business networks and from services relating to the SAP Business Network (including cloud applications, professional services, and education services). Within the SAP Business Network segment, we mainly market and sell the cloud offerings developed by SAP Ariba, SAP Concur, and SAP Fieldglass.

On April 5, 2018, we acquired Callidus Software Inc. and changed the structure of the Applications, Technology & Services segment. The Callidus business was combined with our existing customer experience activities to form a new end-to-end business unit. This new unit, which qualifies as an operating segment (called Customer Experience), comprises on-premise and cloud-based products that run front office functions across the customer experience. Support revenues related to our on-premise customer experience solutions continue to be reported in the Applications, Technology & Services segment, as we are unable to split the total software support revenues into support services provided for different solutions. Additionally, for one offering, revenues are currently included in the Customer Experience segment, whereas related development costs (2018: 16 million, 2017: 21 million, 2016: 19 million) are allocated to the Applications, Technology & Services segment.

Further, the manner in which our messaging services are reported to our CODM has changed such that our business unit Digital Interconnect now qualifies as an operating segment. Due to its size, however, Digital Interconnect is not a reportable segment.

The segment information for prior periods has been restated to conform to the current year s presentation.

Accounting Policies, Judgments, and Sources for Management Reporting

Our management reporting system reports our intersegment services as cost reductions and does not track them as internal revenue. Intersegment services mainly represent utilization of human resources of one segment by another segment on a project basis. Intersegment services are charged based on internal cost rates including certain indirect overhead costs 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, business operations, and 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 disclosed under the Other revenue and Other expenses items in the reconciliation in *Note (C.2)*.

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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	2018		2017		2016
	Actual Currency	Constant Currency3)	Actual Currency	Constant Currency3)	Actual Currency
Cloud subscriptions and support SaaS/PaaS1)	1,829	1,894	1,403	1,423	1,074
Cloud subscriptions and support IaaS2)	488	506	328	334	206
Cloud subscriptions and support	2,317	2,400	1,732	1,758	1,280
Software licenses	4,233	4,456	4,434	4,538	4,350
Software support	10,968	11,477	10,890	10,987	10,544
Software licenses and support	15,201	15,933	15,325	15,524	14,894
Cloud and software	17,518	18,333	17,056	17,282	16,174
Services	3,288	3,559	3,162	3,183	3,037
Total segment revenue	**20,806**	**21,892**	**20,218**	**20,465**	**19,211**
Cost of cloud subscriptions and support SaaS/PaaS1)	777	813	572	581	404
Cost of cloud subscriptions and support IaaS2)	424	436	305	307	225
Cost of cloud subscriptions and support	1,201	1,254	877	888	630
Cost of software licenses and support	1,899	2,031	1,943	1,953	1,896
Cost of cloud and software	3,101	3,285	2,825	2,846	2,525
Cost of services	2,524	2,695	2,437	2,453	2,401
Total cost of revenue	**5,625**	**5,980**	**5,262**	**5,300**	**4,926**
Segment gross profit	**15,181**	**15,912**	**14,957**	**15,165**	**14,284**
Other segment expenses	6,435	6,729	6,478	6,549	5,949
Segment profit	**8,746**	**9,183**	**8,478**	**8,616**	**8,335**

1) Software as a service/platform as a service

2) Infrastructure as a service

3) Constant currency numbers are calculated by translating numbers of the current period using the average exchange rates from the previous year s corresponding period instead of the current period. 2018 constant currency numbers are thus only comparable to 2017 actual currency numbers; 2017 constant currency numbers are only comparable to 2016 actual currency numbers.

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SAP Business Network

millions	2018		2017		2016
	Actual Currency	Constant Currency3)	Actual Currency	Constant Currency3)	Actual Currency
Cloud subscriptions and support SaaS/PaaS1)	2,178	2,265	1,840	1,870	1,595
Cloud subscriptions and support IaaS2)	0	0	0	0	0
Cloud subscriptions and support	2,178	2,265	1,840	1,870	1,595
Software licenses	0	0	1	1	0
Software support	16	16	18	18	28
Software licenses and support	16	17	17	18	27
Cloud and software	2,193	2,282	1,857	1,887	1,622
Services	436	451	404	413	303
Total segment revenue	**2,629**	**2,733**	**2,261**	**2,300**	**1,925**
Cost of cloud subscriptions and support SaaS/PaaS1)	483	503	423	435	384
Cost of cloud subscriptions and support IaaS2)	0	0	0	0	0
Cost of cloud subscriptions and support	483	503	423	435	384
Cost of software licenses and support	6	7	5	5	1
Cost of cloud and software	489	510	433	440	385
Cost of services	324	337	292	297	247
Total cost of revenue	**813**	**847**	**725**	**737**	**632**
Segment gross profit	**1,816**	**1,886**	**1,536**	**1,563**	**1,293**
Other segment expenses	1,285	1,341	1,148	1,166	953
Segment profit	**531**	**545**	**388**	**397**	**340**

1) Software as a service/platform as a service

2) Infrastructure as a service

3) Constant currency numbers are calculated by translating numbers of the current period using the average exchange rates from the previous year s corresponding period instead of the current period. 2018 constant currency numbers are thus only comparable to 2017 actual currency numbers; 2017 constant currency numbers are only comparable to 2016 actual currency numbers.

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Customer Experience

millions	2018		2017		2016
	Actual Currency	Constant Currency3)	Actual Currency	Constant Currency3)	Actual Currency
Cloud subscriptions and support SaaS/PaaS1)	528	539	200	203	119
Cloud subscriptions and support IaaS2)	0	0	0	0	0
Cloud subscriptions and support	528	539	200	203	119
Software licenses	413	421	438	445	513
Software support	1	1	0	0	0
Software licenses and support	414	422	437	445	514
Cloud and software	942	961	637	648	633
Services	9	9	6	6	4
Total segment revenue	**951**	**970**	**643**	**654**	**637**
Cost of cloud subscriptions and support SaaS/PaaS1)	176	178	81	82	30
Cost of cloud subscriptions and support IaaS2)	0	0	0	0	0
Cost of cloud subscriptions and support	176	178	81	82	30
Cost of software licenses and support	20	20	45	45	54
Cost of cloud and software	196	198	126	127	84
Cost of services	3	3	1	1	1
Total cost of revenue	**199**	**202**	**127**	**127**	**85**
Segment gross profit	**751**	**768**	**516**	**527**	**552**
Other segment expenses	613	630	431	437	388
Segment profit	**138**	**139**	**85**	**90**	**164**

1) Software as a service/platform as a service

2) Infrastructure as a service

3) Constant currency numbers are calculated by translating numbers of the current period using the average exchange rates from the previous year s corresponding period instead of the current period. 2018 constant currency numbers are thus only comparable to 2017 actual currency numbers; 2017 constant currency numbers are only comparable to 2016 actual currency numbers.

Segment Revenue by Region

millions	2018			
	Actual Currency			
	Applications, Technology & Services	**SAP Business Network**	**Customer Experience**	**Total Reportable Segments**
EMEA	10,178	443	416	11,037
Americas	7,197	1,915	421	9,532
APJ	3,431	271	114	3,817

Total segment revenue	**20,806**	**2,629**	**951**	**24,386**

For a breakdown of revenue by region for the SAP Group, see *Note (A.1).*

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(C.2) Reconciliation of Segment Measures to Income Statement

millions	**2018**		2017		2016
	Actual Currency	Constant Currency1)	Actual Currency	Constant Currency1)	Actual Currency
Applications, Technology & Services	20,806	21,892	20,218	20,465	19,211
SAP Business Network	2,629	2,733	2,261	2,300	1,925
Customer Experience	951	970	643	654	637
Total segment revenue for reportable segments	**24,386**	**25,596**	**23,122**	**23,419**	**21,773**
Other revenue	356	365	341	346	294
Adjustment for currency impact	0	1,219	0	301	0
Adjustment of revenue under fair value accounting	33	33	3	3	5
Total revenue	**24,708**	**24,708**	**23,461**	**23,461**	**22,062**
Applications, Technology & Services	8,746	9,183	8,478	8,616	8,335
SAP Business Network	531	545	388	397	340
Customer Experience	138	139	85	90	164
Total segment profit for reportable segments	**9,415**	**9,867**	**8,951**	**9,103**	**8,840**
Other revenue	356	365	341	346	294
Other expenses	2,603	2,751	2,523	2,529	2,501
Adjustment for currency impact	0	317	0	151	0
Adjustment for					
Revenue under fair value accounting	33	33	3	3	5
Acquisition-related charges	577	577	587	587	680
Share-based payment expenses	830	830	1,120	1,120	785
Restructuring	19	19	182	182	23
Operating profit	**5,703**	**5,703**	**4,877**	**4,877**	**5,135**
Other non-operating income/expense, net	56	56	36	36	234
Financial income, net	47	47	188	188	29
Profit before tax	**5,600**	**5,600**	**5,029**	**5,029**	**4,872**

1) Constant currency numbers are calculated by translating numbers of the current period using the average exchange rates from the previous year s corresponding period instead of the current period. 2018 constant currency numbers are thus only comparable to 2017 actual currency numbers; 2017 constant currency numbers are only comparable to 2016 actual currency numbers.

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(C.3) Other Non-Operating Income/Expense, Net

millions	2018	2017	2016
Foreign currency exchange gain/loss, net	31	12	210
Thereof from financial assets at fair value through profit or loss	444	615	531
Thereof from financial assets at amortized cost (2017, 2016: loans and receivables)	148	96	26
Thereof from financial liabilities at fair value through profit or loss	415	435	569
Thereof from financial liabilities at amortized cost	202	317	174
Miscellaneous income/expense, net	25	24	23
Other non-operating income/expense, net	**56**	**36**	**234**

(C.4) Financial Income, Net

millions	2018	2017	2016
Finance income	**371**	**476**	**230**
Thereof gains from financial assets at fair value through profit and loss (2017, 2016: from available-for-sale financial assets)	227	382	164
Finance costs	**413**	**283**	**259**
Thereof interest expense from financial liabilities at amortized cost	106	89	103
Thereof interest expense from financial liabilities at fair value through profit and loss (2017, 2016: from available-for-sale financial liabilities)	206	116	114
Financial income, net	**47**	**188**	**29**

(C.5) Income Taxes

Accounting Policies, Judgments, and Estimates

In 2018, we adopted the IFRS Interpretations Committee s agenda decision on the accounting for interest and penalties related to income taxes. As a result, interest and penalties which are related to income taxes but do not, themselves, meet the definition of income taxes are now presented,

- in our statement of financial position, under other non-financial assets or other non-financial liabilities/provisions, and
- in our income statement, depending on the nature of the items either in financial income or other non-operating income/expense.

Previously, these items were classified as income taxes. Prior-period numbers were adjusted to conform to the new classification. The following table summarizes the impact on our Consolidated Statements of Financial Position.

millions	**Adjustments as at 12/31/2017**	**Adjustments as at 12/31/2016**
Other non-financial assets	66	65
Tax assets	-91	-80
Total non-current assets	-25	-15
Total assets	**-25**	**-15**
Tax liabilities	-36	-32
Provisions	36	32
Total non-current liabilities	0	0
Total liabilities	**0**	**0**
Retained earnings	-25	-15
Equity attributable to owners of parent	-25	-15
Total equity	**-25**	**-15**
Total equity and liabilities	**-25**	**-15**

Judgment is 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.

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. As a result, judgment is necessary in determining our worldwide income tax provisions. We make our estimates about the ultimate resolution of our tax uncertainties based on current tax laws and our interpretation thereof. Changes to the assumptions underlying these estimates and outcomes that differ from these assumptions could require material adjustments to the carrying

amount of our income tax provisions.

The assessment whether a deferred tax asset is impaired requires judgment, as we need to estimate future taxable profits to determine whether the utilization of the deferred tax asset is probable. In evaluating our ability to utilize our deferred tax assets, we consider all available positive and negative evidence, including the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are recoverable. Our judgment regarding future taxable income is based on assumptions about future market conditions and future profits of SAP. Changes to these assumptions and outcomes that differ from these assumptions could require material adjustments to the carrying amount of our deferred tax assets.

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Tax Expense by Geographic Location

millions	2018	2017	2016
Current tax expense			
Germany	733	935	866
Foreign	1,019	716	537
Total current tax expense	**1,752**	**1,651**	**1,403**
Deferred tax expense/income			
Germany	57	584	38
Foreign	293	84	123
Total deferred tax income	**241**	**663**	**161**
Total income tax expense	**1,511**	**983**	**1,242**

Major Components of Tax Expense

millions	2018	2017	2016
Current tax expense/income			
Tax expense for current year	1,665	1,623	1,412
Taxes for prior years	87	28	9
Total current tax expense	**1,752**	**1,651**	**1,403**
Deferred tax expense/income			
Origination and reversal of temporary differences	501	891	403
Unused tax losses, research and development tax credits, and foreign tax credits	260	223	242
Total deferred tax income	**241**	**663**	**161**
Total income tax expense	**1,511**	**983**	**1,242**

Profit Before Tax by Geographic Location

millions	2018	2017	2016
Germany	3,106	2,788	3,118
Foreign	2,494	2,241	1,754
Total	**5,600**	**5,029**	**4,872**

The following table reconciles the expected income tax expense, computed by applying our combined German tax rate of 26.4% (2017: 26.4%; 2016: 26.4%), to the actual income tax expense. Our 2018 combined German tax rate includes a corporate income tax rate of 15.0% (2017: 15.0%; 2016: 15.0%), plus a solidarity surcharge of 5.5% (2017: 5.5%; 2016: 5.5%) thereon, and trade taxes of 10.6% (2017: 10.6%; 2016: 10.6%).

Relationship Between Tax Expense and Profit Before Tax

millions, unless otherwise stated	2018	2017	2016

Profit before tax	**5,600**	**5,029**	**4,872**
Tax expense at applicable tax rate of 26.4% (2017: 26.4%; 2016: 26.4%)	1,478	1,327	1,286
Tax effect of:			
Foreign tax rates	147	403	107
Changes in tax laws and tax rates	0	212	3
Non-deductible expenses	106	82	78
Tax-exempt income	33	95	105
Withholding taxes	91	131	112
Research and development and foreign tax credits	33	26	36
Prior-year taxes	17	26	30
Reassessment of deferred tax assets, research and development tax credits, and foreign tax credits	58	185	43
Other	13	20	1
Total income tax expense	**1,511**	**983**	**1,242**
Effective tax rate (in %)	**27.0**	**19.5**	**25.5**

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Components of Recognized Deferred Tax Assets and Liabilities

millions	2018	2017
Deferred tax assets		
Intangible assets	668	563
Property, plant, and equipment	28	10
Other financial assets	11	12
Trade and other receivables	55	57
Pension provisions	116	112
Share-based payments	140	164
Other provisions and obligations	424	408
Contract liabilities/deferred income	229	77
Carryforwards of unused tax losses	150	202
Research and development and foreign tax credits	21	166
Other	181	75
Total deferred tax assets	**2,023**	**1,846**
Deferred tax liabilities		
Intangible assets	628	617
Property, plant, and equipment	95	92
Other financial assets	133	115
Trade and other receivables	153	125
Pension provisions	12	9
Share-based payments	0	1
Other provisions and obligations	18	29
Contract liabilities/deferred income	23	22
Other	43	50
Total deferred tax liabilities	**1,105**	**1,060**
Total deferred tax assets, net	**918**	**786**

Items Not Resulting in a Deferred Tax Asset

millions	2018	2017	2016
Unused tax losses			
Not expiring	575	375	338
Expiring in the following year	7	9	32
Expiring after the following year	476	535	649
Total unused tax losses	**1,058**	**919**	**1,019**
Deductible temporary differences	**509**	**524**	**33**
Unused research and development and foreign tax credits			
Not expiring	54	38	33
Expiring in the following year	0	2	1
Expiring after the following year	18	34	30
Total unused tax credits	**72**	**74**	**64**

Of the unused tax losses, 213 million (2017: 263 million; 2016: 309 million) relate to U.S. state tax loss carryforwards.

In 2018, subsidiaries that suffered a tax loss in either the current or the preceding period recognized deferred tax assets in excess of deferred tax liabilities amounting to 47 million (2017: 79 million; 2016: 189 million), because it is probable that sufficient future taxable profit will be available to allow the benefit of the deferred tax assets to be utilized.

We have not recognized a deferred tax liability on approximately 14.04 billion (2017: 13.21 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 1,746 million (2017: 1,884 million) in total (including related interest expenses and penalties of 842 million (2017: 869 million)).

(C.6) Earnings per Share

millions, unless otherwise stated	**2018**	2017	2016
Profit attributable to equity holders of SAP SE	4,083	4,008	3,642
Issued ordinary shares1)	1,229	1,229	1,229
Effect of treasury shares1)	35	31	30
Weighted average shares outstanding, basic1)	1,194	1,197	1,198
Dilutive effect of share-based payments1)	0	1	1
Weighted average shares outstanding, diluted1)	1,194	1,198	1,199
Earnings per share, basic, attributable to equity holders of SAP SE (in)	**3.42**	**3.35**	**3.04**
Earnings per share, diluted, attributable to equity holders of SAP SE (in)	**3.42**	**3.35**	**3.04**

1) Number of shares in millions

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Section D Invested Capital

This section highlights the non-current assets including investments that form the basis of our operating activities. Additions in invested capital include separate asset acquisitions or business combinations. Further, we disclose information about purchase obligations and capital contributions.

(D.1) Business Combinations

Accounting Policies, Judgments, and Estimates

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.

In 2018, we concluded several business combinations, with the Callidus Software Inc. (Callidus) acquisition being the only material transaction.

Prior-year acquisitions are described in the Notes to the 2017 Consolidated Financial Statements, *Note (4)*.

Acquisition of Callidus

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 aims 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

millions	
Cash paid	1,957
Liabilities incurred	47

Total consideration transferred	**2,004**

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 Callidus 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.

The initial accounting for the Callidus business combination is incomplete because we are still obtaining some information necessary to identify and measure tax-related assets and liabilities. Accordingly, the amounts recognized in our financial statements for these items are provisional as at December 31, 2018.

Measurement period adjustments recorded in 2018 (which were not material) mostly relate to intangible assets (finalization of the fair value calculation) and tax-related assets and liabilities (deferred taxes from investments in subsidiaries and unused tax losses, and so on).

The following table summarizes the preliminary values of identifiable assets acquired and liabilities assumed in connection with the acquisition of Callidus, as at the acquisition date:

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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	55
Current and deferred tax liabilities	65
Provisions and other non-financial liabilities	15
Contract liabilities/deferred income	55
Total identifiable liabilities	190
Total identifiable net assets	521
Goodwill	1,483
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.

For the Callidus acquisition, we expect synergies particularly in the following areas:

Cross-selling opportunities of Callidus products to existing SAP customers across all regions, using SAP s sales organization

Integrating Callidus products into SAP C/4 HANA to strengthen SAP s customer experience suite of solutions

Improved profitability in Callidus sales and operations

We have 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, 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
Revenue	24,708	180
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

Accounting Policies, Judgments, and Estimates

The annual goodwill impairment test is performed at the level of our operating segments since there are no lower levels in SAP at which goodwill is monitored for internal management purposes. The test is performed at the same time (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.

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Goodwill

millions	
Historical cost	
1/1/2017	23,415
Foreign currency exchange differences	2,249
Additions from business combinations	205
12/31/2017	**21,371**
Foreign currency exchange differences	847
Additions from business combinations	1,609
12/31/2018	**23,827**
Accumulated amortization	
1/1/2017	104
Foreign currency exchange differences	4
12/31/2017	**100**
Foreign currency exchange differences	2
12/31/2018	**102**
Carrying amount	
12/31/2017	**21,271**
12/31/2018	**23,725**

For more information about our segments and the changes in 2018, see *Note (C.1)*.

For impairment testing purposes, the carrying amount of goodwill has been allocated to the operating segments expected to benefit from goodwill as follows:

Goodwill by Operating Segment

millions	Applications, Technology & Services	SAP Business Network	Customer Experience	Other	Total
12/31/2017	14,654	6,617	0	0	21,271
12/31/2018	**13,498**	**6,925**	**3,293**	**9**	**23,725**

At the end of 2018, the goodwill allocated to the Customer Experience segment includes goodwill of 1,656 million reallocated from the Applications, Technology & Services segment due to the changes in segment composition in 2018.

The key assumptions on which management based its cash flow projections for the period covered by the underlying business plans are as follows:

Key Assumption	Basis for Determining Values Assigned to Key Assumption
Budgeted revenue growth	Revenue growth rate achieved in the current fiscal year, adjusted for an expected increase in SAP s addressable cloud and database markets; expected growth in the established software applications and analytics markets. Values assigned reflect our past experience and our expectations regarding an increase in the addressable markets.
Budgeted operating margin	Operating margin budgeted for a given budget period equals the operating margin achieved in the current fiscal year, increased by expected efficiency gains. Values assigned reflect past experience, except for efficiency gains.
Discount rates	Our estimated cash flow projections are discounted to present value using discount rates (after-tax rates for the SAP Business Network segment and pre-tax rates for all other segments). Pre-tax discount rates are based on the weighted average cost of capital (WACC) approach.
Terminal growth rate	Our estimated cash flow projections for periods beyond the business plan were extrapolated using segment-specific terminal growth rates. These growth rates do not exceed the long-term average growth rates for the markets in which our segments operate.

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Key Assumptions and Detailed Planning Period

Percent, unless otherwise stated	Applications, Technology & Services		SAP Business Network		Customer Experience	
	2018	2017	**2018**	2017	**2018**	2017
Budgeted revenue growth (average of the budgeted period)	**4.8**	4.8	**13.8**	14.9	**32.9**	NA
Pre-tax discount rate	**11.0**	10.6	**11.5**	11.9	**11.7**	NA
After-tax discount rate	**8.6**	8.2	**9.0**	9.3	**9.4**	NA
Terminal growth rate	**3.0**	2.9	**3.0**	3.0	**3.0**	NA
Detailed planning period (in years)	**5**	3	**9**	9	**5**	NA

Applications, Technology & Services

The recoverable amount of the segment has been determined based on a value-in-use calculation. The calculation uses cash flow projections based on actual operating results and a group-wide business plan approved by management.

We believe that no reasonably possible change in any of the above key assumptions would cause the carrying amount of our Applications, Technology & Services segment to exceed the recoverable amount.

SAP Business Network

The recoverable amount of the segment has been determined based on fair value less costs of disposal calculation. The fair value measurement was categorized as a level 3 fair value based on the inputs used in the valuation technique. The cash flow projections are based on actual operating results and specific estimates covering a detailed planning period and the terminal growth rate thereafter. The projected results were determined based on management s estimates and are consistent with the assumptions a market participant would make. The segment operates in a relatively immature area with significant growth rates projected for the near future. We therefore have a longer and more detailed planning period than one would apply in a more mature segment.

We are using a target operating margin of 33% (2017: 33%) for the segment at the end of the budgeted period as a key assumption, which is within the range of expectations of market participants (for example, industry analysts).

The recoverable amount exceeds the carrying amount by 13,580 million (2017: 8,143 million).

The following table shows the amounts by which the key assumptions would need to change individually for the recoverable amount to be equal to the carrying amount:

Sensitivity to Change in Assumptions

		SAP Business Network
	2018	2017
Budgeted revenue growth (change in pp)	**11.8**	8.6
After-tax discount rate (change in pp)	**6.6**	4.3
Target operating margin at the end of the budgeted period (change in pp)	**22**	17

Customer Experience

The recoverable amount of the segment has been determined based on a value-in-use calculation. The calculation uses cash flow projections based

on actual operating results and a group-wide business plan approved by management. The recoverable amount exceeds the carrying amount by 8,476 million.

The following table shows the amounts by which the key assumptions would need to change individually for the recoverable amount to be equal to the carrying amount:

Sensitivity to Change in Assumptions

		Customer Experience
	2018	**2017**
Budgeted revenue growth (change in pp)	8.3	NA
Pre-tax discount rate (change in pp)	10.2	NA
Target operating margin at the end of the budgeted period (change in pp)	28	NA

(D.3) Intangible Assets

Accounting Policies, Judgments, and Estimates

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.

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).

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 eight years.

Amortization expenses of intangible assets are classified as cost of cloud and software, cost of services, research and development, sales and marketing, and general and administration, depending on the use of the respective intangible assets.

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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.

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.

Intangible Assets

millions	Software and Database Licenses	Acquired Technology/IPRD	Customer Relationship and Other Intangibles	Total
Historical cost				
1/1/2017	791	2,907	5,119	8,817
Foreign currency exchange differences	-22	-278	-523	-823
Additions from business combinations	0	51	73	124
Other additions	93	0	10	103
Retirements/disposals	-53	-688	-62	-803
12/31/2017	**809**	**1,992**	**4,617**	**7,418**
Adoption of IFRS 15	0	0	14	14
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**
Accumulated amortization				
1/1/2017	589	2,186	2,256	5,031
Foreign currency exchange differences	-16	-208	-219	-443
Additions amortization	79	254	327	660
Retirements/disposals	-51	-688	-58	-797
12/31/2017	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
Carrying amount				
12/31/2017	**208**	**448**	**2,311**	**2,967**
12/31/2018	**317**	**403**	**2,507**	**3,227**

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Significant Intangible Assets

millions, unless otherwise stated		Carrying Amount	Remaining Useful Life (in years)
	2018	2017	
Sybase Customer relationships	179	226	3 to 5
SuccessFactors Customer relationships	225	261	7
Ariba Customer relationships	323	366	7 to 9
Concur Acquired technologies	114	180	3
Concur Customer relationships	1,033	1,073	12 to 16
Callidus Acquired technologies	103	0	4 to 6
Callidus Customer relationships	384	0	10 to 14
Total significant intangible assets	**2,361**	**2,106**	

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(D.4) Property, Plant, and Equipment

Accounting Policies, Judgments, and Estimates

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.

Useful Lives of Property, Plant, and Equipment

Buildings	Predominantly 25 to 50 years
Leasehold improvements	Based on the term of the lease contract
Information technology equipment	2 to 6 years
Office furniture	4 to 20 years
Automobiles	4 to 5 years

Property, Plant, and Equipment

millions	Land and Buildings	Other Property, Plant, and Equipment	Advance Payments and Construction in Progress	**Total**
12/31/2017	**1,162**	**1,592**	**213**	**2,967**
12/31/2018	**1,344**	**1,985**	**224**	**3,553**
Additions (other than those from business combinations)				
2017	**96**	**933**	**167**	**1,196**
2018	**199**	**1,026**	**77**	**1,302**

The additions (other than from business combinations) relate primarily to the replacement and purchase of IT infrastructure (data centers, and so on) and the construction of new buildings. For more information about the expected effect of the initial application of IFRS 16, see *Note (IN.1)*.

(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			2018			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Equity securities	0	1,248	1,248	0	827	827
Investments in associates	0	26	26	0	32	32
Total	**0**	**1,274**	**1,274**	**0**	**859**	**859**
Other financial assets	448	1,536	1,984	990	1,155	2,145
% of other financial assets	0	83	64	0	74	40

For a list of the names of other equity investments, see *Note (G.10)*.

Financial Commitments in Venture Capital Funds

millions	2018	2017
Investments in venture capital funds	**187**	**182**

SAP invests and holds interests in unrelated parties that manage investments in venture capital. On December 31, 2018, total commitments to make such investments amounted to 418 million (2017: 342 million), of which 232 million had been drawn (2017: 161 million). By investing in such

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venture capital funds, we are exposed to the risks inherent in the business areas in which the entities operate. Our maximum exposure to loss is the amount invested plus unavoidable future capital contributions.

Maturities

millions	**12/31/2018**
	Investments in Venture Capital Funds
Due 2019	187
Due 2020 to 2023	0
Due thereafter	0
Total	**187**

(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	**2018**	2017
Germany	4,184	3,714
Rest of EMEA	4,742	4,338
EMEA	**8,926**	**8,052**
United States	22,123	19,300
Rest of Americas	258	201
Americas	**22,380**	**19,500**
APJ	**922**	**723**
SAP Group	**32,228**	**28,276**

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	**2018**	2017
Contractual obligations for acquisition of property, plant, and equipment and intangible assets	123	207

Other purchase obligations		2,010		934
Purchase obligations		**2,133**		**1,141**

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. Historically, the majority of such purchase obligations have been realized.

Maturities

millions	**12/31/2018**
	Purchase Obligations
Due 2019	827
Due 2020 to 2023	1,290
Due thereafter	17
Total	**2,133**

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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 with stable outlook, and A by Standard & Poor s. Standard & Poor s revised the outlook from positive to stable in 2018.

	12/31/2018		12/31/2017		Δ in %
	millions	% of Total Equity and Liabilities	millions	% of Total Equity and Liabilities	
Equity	28,877	56	25,515	60	13
Current liabilities	10,481	20	10,210	24	3
Non-current liabilities	12,133	24	6,759	16	80
Liabilities	22,614	44	16,969	40	33
Thereof financial debt	11,331	22	6,264	15	81
Total equity and liabilities	**51,491**	**100**	**42,484**	**100**	**21**

In 2018, we repaid 1,150 million in Eurobonds and US$150 million in U.S. private placements at maturity. The repayment was partly refinanced through the issuance of a US$300 million USD bond. We took out a three-tranche Eurobond of 1,500 million in total and a five-tranche Eurobond of 4,500 million in total with maturities of two to 12 years to finance the acquisitions of Callidus and Qualtrics. Thus, the ratio of total nominal volume of financial debt to total equity and liabilities increased by 7pp.

(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
1/1/2016	**1,228.5**	**-30.6**
Reissuance of treasury shares under share-based payments	0	0.7
12/31/2016	**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**

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

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(Authorized Capital II). Subject to the consent of the Supervisory Board, the Executive Board is authorized to exclude the shareholders statutory subscription rights in certain cases.

Contingent Shares

SAP SE s share capital is subject to a contingent capital increase, which may be effected only to the extent that the holders or creditors of convertible bonds or stock options issued or guaranteed by SAP SE or any of its directly or indirectly controlled subsidiaries under certain share-based payments exercise their conversion or subscription rights, and no other methods for servicing these rights are used. As at December 31, 2018, 100 million, representing 100 million shares, was still available for issuance (2017: 100 million).

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Other Components of Equity

millions	Exchange Differences	Available-for-Sale Financial Assets	Cash Flow Hedges/Cost of Hedging	Total
1/1/2016	**2,222**	**336**	**3**	**2,561**
Other comprehensive income for items that will be reclassified to profit or loss, net of tax	839	43	11	785
12/31/2016	**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	153	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**

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.

In 2018, we distributed 1,671 million (1.40 per share) in dividends for 2017 compared to 1,499 million (1.25 per share) paid in 2017 for 2016 and 1,378 million (1.15 per share) paid in 2016 for 2015. Aside from the distributed dividend, in 2017, we also returned 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, 2018, the Executive Board intends to propose that a dividend of 1.50 per share (that is, an estimated total dividend of 1,790 million), be paid from the profits of SAP SE.

(E.3) Liquidity

Accounting Policies

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.

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

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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

millions	**2018**	2017	Δ
Cash and cash equivalents	8,627	4,011	4,617
Current time deposits and debt securities	211	774	563
Group liquidity	**8,838**	**4,785**	**4,053**
Current financial debt	759	1,299	540
Non-current financial debt	10,572	4,965	5,607
Financial debt	**11,331**	**6,264**	**5,067**
Net liquidity	**2,493**	**1,479**	**1,013**

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 liquidity.

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, private placements, and bonds. Net liquidity is group liquidity less financial debt.

Cash and Cash Equivalents

millions			**2018**			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Cash at banks	2,918	0	2,918	2,558	0	2,558
Time deposits	4,117	0	4,117	314	0	314
Money market and other funds	1,195	0	1,195	1,139	0	1,139
Debt securities	400	0	400	0	0	0
Expected credit loss allowance	3	0	3	0	0	0
Cash and cash equivalents	**8,627**	**0**	**8,627**	**4,011**	**0**	**4,011**

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Non-Derivative Financial Debt Investments

millions			**2018**			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Time deposits	137	0	137	736	0	736
Debt securities	77	0	77	39	0	39
Financial instruments related to employee benefit plans	0	165	165	0	155	155
Loans and other financial receivables	57	91	147	58	105	163
Expected credit loss allowance	3	0	3	0	0	0
Non-derivative financial debt investments	**268**	**256**	**524**	**832**	**260**	**1,092**
Other financial assets	448	1,536	1,984	990	1,155	2,145
Non-derivative financial debt investments as % of other financial assets	60	17	26	84	23	51

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	2018					2017				
	Nominal Volume		Carrying Amount			Nominal Volume		Carrying Amount		
	Current	Non-Current	Current	Non-Current	Total	Current	Non-Current	Current	Non-Current	Total
Bonds	750	9,512	759	9,445	10,204	1,150	4,000	1,149	3,997	5,147
Private placement transactions	0	1,011	0	1,041	1,041	125	965	125	1,005	1,130
Bank loans	9	49	9	49	58	24	0	24	0	24
Financial debt	**759**	**10,572**	**768**	**10,536**	**11,303**	**1,299**	**4,965**	**1,298**	**5,002**	**6,301**
Financial liabilities			1,125	10,553	11,678			1,561	5,034	6,595
Financial debt as % of financial liabilities			68	100	97			83	99	96

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 1.33% in 2018, 1.29% in 2017, and 1.25% in 2016.

For information about the risk associated with our financial liabilities, see *Note (F.1)*. For information about fair values, see *Note (F.2)*.

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Bonds

		Maturity	Issue Price	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	**2018 Carrying Amount (in millions)**	2017 Carrying Amount (in millions)
Eurobond 6	2012	2019	99.307%	2.125% (fix)	2.29%	750	759	768
Eurobond 7	2014	2018	100.000%	0.000% (var.)	0.00%	750	0	750
Eurobond 8	2014	2023	99.478%	1.125% (fix)	1.24%	1,000	996	995
Eurobond 9	2014	2027	99.284%	1.750% (fix)	1.87%	1,000	992	991
Eurobond 11	2015	2020	100.000%	0.000% (var.)	0.07%	650	649	649
Eurobond 12	2015	2025	99.264%	1.000% (fix)	1.13%	600	595	594
Eurobond 13	2016	2018	100.000%	0.000% (var.)	0.00%	400	0	400
Eurobond 14	2018	2021	100.519%	0.000% (var.)	0.15%	500	502	0
Eurobond 15	2018	2026	99.576%	1.000% (fix)	1.06%	500	498	0
Eurobond 16	2018	2030	98.687%	1.375% (fix)	1.50%	500	494	0
Eurobond 17	2018	2020	100.024%	0.000% (var.)	0.01%	500	500	0
Eurobond 18	2018	2022	99.654%	0.250% (fix)	0.36%	900	897	0
Eurobond 19	2018	2024	99.227%	0.750% (fix)	0.89%	850	843	0
Eurobond 20	2018	2028	98.871%	1.250% (fix)	1.38%	1,000	988	0
Eurobond 21	2018	2031	98.382%	1.625% (fix)	1.78%	1,250	1,229	0
Eurobonds							**9,942**	**5,147**
USD bond	2018	2025	100.000%	3.306% (var.)	3.35%	US$300	262	0
Bonds							**10,204**	**5,147**

All of our Eurobonds are listed for trading on the Luxembourg Stock Exchange.

Private Placements

		Maturity	Coupon Rate	Effective Interest Rate	Nominal Volume (in respective currency in millions)	**2018 Carrying Amount (in millions)**	2017 Carrying Amount (in millions)
U.S. private placements							
Tranche 4	2011	2018	3.43% (fix)	3.50%	US$150	0	125
Tranche 6	2012	2020	2.82% (fix)	2.86%	US$290	251	241
Tranche 7	2012	2022	3.18% (fix)	3.22%	US$444.5	395	382
Tranche 8	2012	2024	3.33% (fix)	3.37%	US$323	299	289
Tranche 9	2012	2027	3.53% (fix)	3.57%	US$100	96	93
Private placements						**1,041**	**1,130**

The U.S. private placement notes were issued by one of our subsidiaries that has the U.S. dollar as its functional currency.

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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	12/31/2017	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**

millions	12/31/2016	Cash Flows	Business Combinations	Foreign Currency	Fair Value Changes	Other	**12/31/2017**
Current financial debt	1,435	1,372	1	54	0	1,290	1,299
Non-current financial debt	6,390	8	0	144	0	1,289	4,965
Financial debt (nominal volume)	**7,826**	**1,364**	**1**	**197**	**0**	**1**	**6,264**
Basis adjustment	86	0	0	7	31	0	62
Transaction costs	32	0	0	0	0	7	26
Financial debt (carrying amount)	**7,880**	**1,364**	**1**	**191**	**31**	**7**	**6,301**
Accrued interest	45	0	0	2	0	9	34
Interest rate swaps	47	0	0	1	24	0	24
Total liabilities from financing activities	**7,878**	**1,364**	**1**	**194**	**7**	**2**	**6,311**

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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, including the adoption of IFRS 9 Financial Instruments.

(F.1) Financial Risk Factors and Risk Management

Accounting policies

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

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.

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 and loss. Amounts accumulated in other comprehensive income are reclassified to profit and loss to Other non-operating income/expense, net and Financial income, net in the same period when the hedged item affects profit and loss.

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, we occasionally generate foreign-currency-denominated receivables, payables, and other monetary items by transacting in a currency other than the functional currency. To mitigate the

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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, 2018, relating to items designated as hedged items were as follows:

Designated Hedged Items in Foreign Currency Exchange Rate Hedges

	Forecasted License Payments
millions	**2018**
Change in value used for calculating hedge ineffectiveness	4
Cash flow hedge	4
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, 2018, designated as hedging instruments were as follows:

Designated Hedging Instruments in Foreign Currency Exchange Rate Hedges

	Forecasted License Payments
millions	2018
Nominal amount	533
Carrying amount	
Other financial assets	2
Other financial liabilities	9
Change in value recognized in OCI	4
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	5

On December 31, 2018, we held the following instruments to hedge exposures to changes in foreign currency:

Details on Hedging Instruments in Foreign Currency Exchange Rate Hedges

		Maturity
		2018
	1 to 6 months	6 to 12 months
Forward exchange contracts		
Net exposure in millions	337	195
Average EUR:GBP forward rate	89.42	90.21
Average EUR:JPY forward rate	130.91	130.06
Average EUR:CHF forward rate	1.15	1.14
Average EUR:AUD forward rate	1.61	1.62

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 have a significant impact neither on profit nor on other comprehensive income with regard to our non-derivative monetary financial instruments and related income or expenses.

Our free-standing derivatives designed for hedging foreign currency exchange rate risks almost completely balance the changes in the fair

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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 non-operating expense, net

The foreign currency option held in connection with the planned acquisition of Qualtrics affecting other non-operating expense, net

Thus, our foreign currency exposure (and our average/high/low exposure) as at December 31 was as follows:

Foreign Currency Exposure

billions	**2018**	2017
Year-end exposure toward all our major currencies	6.3	0.9
Average exposure	2.1	0.9
Highest exposure	6.3	1.0
Lowest exposure	0.7	0.9

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 (2017: +/ 10% of the foreign currency exchange rate between the euro and all other major currencies; 2016: upward/downward shift of +/ 25% of the foreign currency exchange rate between the euro and Brazilian real; +/ 10% of the foreign currency exchange rate between the euro and all other major currencies). If, on December 31, 2018, 2017, and 2016, the foreign currency exchange rates had been higher/lower as described above, this would have 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		
	2018	2017	2016	**2018**	2017	2016
Derivatives held within a designated cash flow hedge relationship						
All major currencies -10% (2017: all major currencies -10%; 2016: Brazil real: 25%; all other major currencies 10%)				62	71	79
All major currencies +10% (2017: all major currencies +10%; 2016: Brazil real: +25%; all other major currencies +10%)				62	71	79
Embedded derivatives						
All currencies 10%	11	15	23			
All currencies +10%	11	15	23			
FX option held in connection with the acquisition of Qualtrics						
USD 10%	29	0	0			
USD +10%	559	0	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 (2018: 48%; 2017: 79%) and most of our financing transactions are based on fixed rates and long maturities (2018: 83%; 2017: 71%).

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 in a 1:1 ratio. Including interest rate swaps, 71% (2017: 49%) of our total interest-bearing financial liabilities outstanding as at December 31, 2018, had a fixed interest rate.

The amounts as at December 31, 2018, relating to items designated as hedged items were as follows:

Designated Hedged Items in Interest Rate Hedges

	2018	
millions	Fixed-Rate Borrowing in EUR	Fixed-Rate Borrowing in USD
Notional amount	750	535
Carrying amount	749	534
Accumulated fair value adjustments in Other financial liabilities	10	-32
Change in fair value used for measuring ineffectiveness	10	1
Accumulated amount of fair value hedge adjustments for hedged items ceased to be adjusted for hedging gains / losses	0	-33

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The amounts as at December 31, 2018, designated as hedging instruments were as follows:

Designated Hedging Instruments in Interest Rate Hedges

		2018		
millions		Interest Rate Swaps for EUR Borrowing		Interest Rate Swaps for USD Borrowing
Notional amount		750		535
Carrying amount				
Other financial assets		10		1
Other financial liabilities		0		-3
Change in fair value used for measuring ineffectiveness		10		-2

As at December 31, 2018, we held the following instruments to hedge exposures to changes in interest rates:

Details on Hedging Instruments in Interest Rate Hedges

								2018
								Maturity
millions		2019		2020		2022		2024
EUR interest rate swaps								
Nominal amounts		750						
Average variable interest rate		0.613%						
USD interest rate swaps								
Nominal amounts				253		194		88
Average variable interest rate				3.366%		3.341%		3.220%

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				**2018**				2017
	Year-End	Average	High	Low	Year-End	Average	High	Low
Fair value interest rate risk								
From investments	0.08	0.09	0.10	0.08	0.04	0.12	0.31	0.03
Cash flow interest rate risk								
From investments (including cash)	4.24	4.16	5.65	3.50	3.80	3.78	4.10	3.52
From financing	1.96	2.08	2.32	1.45	1.81	1.94	2.31	1.80
From interest rate swaps	1.28	1.31	1.36	1.27	1.35	1.75	2.22	1.35

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 available-for-sale were not material at each year end reported. Thus, we do not consider any fixed-rate instruments in the equity-related sensitivity calculation.

Income or expenses recorded in connection with non-derivative financial instruments with variable interest rates are subject to interest rate risk if they are not hedged items in an effective hedge relationship. Thus, we take into consideration interest rate changes relating to our variable-rate financing and our investments in money market instruments in the profit-related sensitivity calculation.

The designation of interest rate receiver swaps in a fair value hedge relationship leads to interest rate changes affecting financial income, net. The fair value movements related to the interest rate swaps are not reflected in the sensitivity calculation, as they offset the fixed interest rate payments for the bonds and private placements as hedged items. However, changes in market interest rates affect the amount of interest payments from the interest rate swap. As a consequence, 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 +100/+30 basis points (bps) for the U.S. dollar/euro area (2017: +100/+25bps for the U.S. dollar/euro area; 2016: +100/+50bps for the U.S. dollar/euro area), and a yield curve downward shift of 25/ 10bps for the U.S. dollar/euro area (2017: 25bps; 2016: 50bps).

If, on December 31, 2018, 2017, and 2016, interest rates had been higher/lower as described above, this would not have had a material effect

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on financial income, net, for our variable interest rate investments and would have had the following effects on financial income, net.

Interest Rate Sensitivity

millions	Effects on Financial Income, Net		
	2018	2017	2016
Derivatives held within a designated fair value hedge relationship			
Interest rates +100 bps for U.S. dollar area/+30 bps for euro area (2017: +100/+25 bps for U.S. dollar/euro area; 2016: +100/+50 bps for U.S. dollar/euro area)	20	26	46
Interest rates 25 bps for U.S. dollar/-10 bps for euro area (2017: -25 bps for U.S. dollar/euro area; 2016: -50 bps for U.S. dollar/euro area)	5	9	29
Variable-rate financing			
Interest rates +100 bps for U.S. dollar area/+25 bps for euro area (2017: +25 bps for euro area; 2016: +50 bps for euro area)	24	5	21
Interest rates -25 bps for U.S. dollar/-10 bps for for euro area (2017: -25 bps for euro area; 2016: -50 bps for euro area)	4	0	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

Our exposure from our investments in equity securities was 1,248 million (2017: 827 million; 2016: 952 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	**2018**	2017	2016
Investments in equity securities			
Increase in equity prices and respective unobservable inputs of 10% - increase of Financial income, net by	65	56	84
Decrease in equity prices and respective unobservable inputs of 10% - decrease of Financial income, net by	65	56	81
Share-based payments			
Increase in equity prices of 20%			
- Increase of share-based payment expenses by	279	371	333
- Increase of offsetting gains from hedging instruments by	57	65	52
Decrease in equity prices of 20%			
- Decrease of share-based payment expenses by	262	337	296
- Decrease of offsetting gains from hedging instruments by	44	46	44

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

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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 2018 and 2017. 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 long-term credit rating available by at least one of the major rating agencies, the Tier 1 capital of the respective financial institution, or participation in the German Depositors Guarantee Fund or similar protection schemes. We continuously monitor strict compliance with these counterparty limits. As the premium for credit default swaps mainly depends on market participants assessments of the creditworthiness of a debtor, we also closely observe the development of credit default swap spreads in the market to evaluate probable risk developments 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, 2018, our exposure to credit risk from cash, time deposits and debt securities was as follows:

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Credit Risk Exposure from Cash, Time Deposits, and Debt Securities

	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%	7,406	0	5
Risk class 2 - high risk	BB to D	0.0%	34	0	0
Risk class 3 - unrated	NA	3.3%	30	0	1
Total		**0.1%**	**7,470**	**0**	**6**

As at December 31, 2017, 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, 2018, our exposure to credit risk from trade receivables was as follows:

Credit Risk Exposure from Trade Receivables and Contract Assets

	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 2018, the movement in the ECL allowance (2017: movement in bad debt allowance according IAS 39) for trade receivables and contract assets is as follows:

Movement in ECL Allowance for Trade Receivables and Contract Assets

	2018	2017
	ECL Allowance	Bad Debt Allowance
Balance as at 01/01 under IAS 39	74	89
Adoption of IFRS 9	25	0
Balance as at 01/01 under IFRS 9	99	89
Net credit losses recognized	18	4
Amounts written off	10	11
Balance as at 12/31	107	74

An analysis of trade receivables that were neither past due nor impaired and their aging as at December 31, 2017, was as follows:

Aging of Trade Receivables

millions	2017
Not past due and not individually impaired	4,185
Past due but not individually impaired	
Past due 1 to 30 days	695
Past due 31 to 120 days	459
Past due 121 to 365 days	266
Past due over 365 days	95

Total past due but not individually impaired	**1,515**
Individually impaired, net of allowances	110
Carrying amount of trade receivables, net	**5,810**

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.

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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, on November 20, 2017, SAP SE entered into a 2.5 billion syndicated credit facility agreement with an initial term of five years plus two one-year extension options. In 2018, the initial term of this facility was extended for an additional period of one year until November 2023. 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 financing the planned acquisition of Qualtrics, we arranged for a 2.5 billion acquisition facility to partially finance the purchase price payment. The facility has a lifetime of three years and can be flexibly repaid with SAP s free cash flow or further refinancing transactions on the capital markets. For more information about drawings under the facility, see *Note (G.9.)*.

Additionally, as at December 31, 2018, and 2017, we had available lines of credit totaling 445 million and 510 million, respectively. There were immaterial borrowings outstanding under these lines of credit in all years presented.

Liquidity Risk Exposure

The table below is an analysis of the remaining contractual maturities of all our financial liabilities held as at December 31, 2018. 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, 2018. 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					Contractual 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

millions	Carrying Amount					Contractual Cash Flows	
	12/31/2017	2018	2019	2020	2021	2022	Thereafter
Non-derivative financial liabilities							
Trade payables	952	952	0	0	0	0	0
Financial liabilities	6,508	1,554	834	957	58	429	3,102
Total of non-derivative financial liabilities	**7,460**	2,506	834	957	58	429	3,102

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Contractual Maturities of Derivative Financial Liabilities and Financial Assets

millions	Carrying Amount	Contractual Cash Flows		Carrying Amount	Contractual Cash Flows	
	12/31/2018	2019	Thereafter	12/31/2017	2018	Thereafter
Derivative financial liabilities and assets						
Derivative financial liabilities						
Currency derivatives not designated as hedging instruments	64			84		
Cash outflows		2,111	11		3,909	309
Cash inflows		2,062	0		3,857	292
Currency derivatives designated as hedging instruments	9			1		
Cash outflows		340	0		75	0
Cash inflows		330	0		74	0
Interest rate derivatives without designated hedge relationship	0			0		
Cash outflows						
Cash inflows						
Interest rate derivatives designated as hedging instruments	3			1		
Cash outflows		15	27		3	15
Cash inflows		13	26		8	14
Total of derivative financial liabilities	**76**	**61**	**12**	**86**	**53**	**13**
Derivative financial assets						
Currency derivatives not designated as hedging instruments	100			41		
Cash outflows		4,025	0		2,799	0
Cash inflows		4,076	0		2,831	0
Currency derivatives designated as hedging instruments	2			29		
Cash outflows		203	0		634	0
Cash inflows		202	0		654	0
Interest rate derivatives designated as hedging instruments	11			24		
Cash outflows		3	14		12	43
Cash inflows		19	15		25	56
Total of derivative financial assets	**113**	**61**	**1**	**93**	**65**	**13**
Total of derivative financial liabilities and assets	**37**	**0**	**11**	**8**	**12**	**5**

(F.2) Fair Value Disclosures on Financial Instruments

Accounting Policies

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) (2017: loans and receivables (L&R), available-for-sale (AFS), held-for-trading (HFT), or amortized cost (AC)). For those financial instruments measured at fair value or for which fair value must be disclosed, we have categorized the financial instruments into a three-level fair value hierarchy depending on the inputs used to determine fair value and their significance for the valuation techniques.

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Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

millions	Category							**12/31/2018**
		Carrying Amount	Measurement Categories					Fair Value
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents		8,627						
Cash at banks1)	AC	2,918	2,918					
Time deposits1)	AC	4,514	4,514					
Money market and similar funds	FVTPL	1,195		1,195	1,195			
Trade and other receivables		6,480						
Trade receivables1)	AC	6,188	6,188					
Other receivables2)		293						
Other financial assets		1,984						
Debt securities	AC	77	77		77			77
Equity securities	FVTPL	1,248		1,248	52	0	1,196	1,248
Investments in associates2)		26						
Time deposits	AC	134	134			134		
Financial instruments related to employee benefit plans2)		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 payables1)	AC	1,265	1,265					
Other payables2)		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		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**	**1,005**	**1,201**	**10,175**

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Fair Values of Financial Instruments and Classification Within the Fair Value Hierarchy

millions	Category							**12/31/2017**
		Carrying Amount	Measurement Categories					Fair Value
			At Amortized Cost	At Fair Value	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents1)	L&R	4,011	4,011					
Trade and other receivables		6,017						
Trade receivables1)	L&R	5,810	5,810					
Other receivables2)		207						
Other financial assets		2,145						
Available-for-sale financial assets								
Debt investments	AFS	39		39	39			39
Equity investments	AFS	827		827	87	8	732	827
Investments in associates2)		32						
Loans and other financial receivables								
Financial instruments related to employee benefit plans2)		155						
Loans and other financial receivables	L&R	899	899			899		899
Derivative assets								
Designated as hedging instrument								
FX forward contracts		29		29		29		29
Interest rate swaps		24		24		24		24
Not designated as hedging instrument								
FX forward contracts	HFT	41		41		41		41
Call options for share-based payments	HFT	90		90		90		90
Call option on equity shares	HFT	11		11			11	11
Liabilities								
Trade and other payables		1,270						
Trade payables1)	AC	952	952					
Other payables2)		318						
Financial liabilities		6,595						
Non-derivative financial liabilities								
Loans	AC	24	24			24		24
Bonds	AC	5,147	5,147		5,335			5,335
Private placements	AC	1,130	1,130			1,136		1,136
Other non-derivative financial liabilities	AC	208	208			208		208
Derivatives								
Designated as hedging instrument								
FX forward contracts		1		1		1		1
Interest rate swaps		1		1		1		1
Not designated as hedging instrument								
FX forward contracts	HFT	84		84		84		84

Total financial instruments, net			**4,308**	**3,259**	**974**	5,209	364	742	4,830

1) 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.

2) 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.

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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	12,865	12,865	

Fair Values of Financial Instruments by Instrument Classification

millions	Category			**12/31/2017**
		Carrying Amount	At Amortized Cost	At Fair Value
Financial assets				
At fair value through profit or loss	HFT	141		141
Available-for-sale	AFS	865		865
At amortized cost	L&R	10,719	10,719	
Financial liabilities				
At fair value through profit or loss	HFT	84		84
At amortized cost	AC	7,460	7,460	

Determination of Fair Values

A description of the valuation techniques and the inputs used in the fair value measurement is given below:

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Financial Instruments Measured at Fair Value on a Recurring Basis

	Type	Fair Value Hierarchy	Determination of Fair Value/Valuation Technique	Significant Unobservable Inputs	Interrelationship Between Significant Unobservable Inputs and Fair Value Measurement
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 securities	Level 1	Quoted prices in an active market	NA	NA
		Level 2	Quoted prices in an active market deducting a discount for the disposal restriction derived from the premium for a respective put option.	NA	NA
	Unlisted equity 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 8.6 to 9.0) Revenues of investees Discounts for lack of marketability (10% to 20%)	The estimated fair value would increase (decrease) if: - The revenue multiples were higher (lower) - The investees revenues were higher (lower) - The liquidity discounts were lower (higher).
			Market approach. Venture capital method evaluating a variety of quantitative and qualitative factors such as actual and forecasted results, cash position, recent or planned transactions, and market comparable	NA	NA

						companies.				
						Last financing round valuations		NA		NA
						Liquidation preferences		NA		NA
						Net asset value/fair market value as reported by the respective funds		NA		NA
		Call options for share-based payment plans		Level 2		Monte Carlo model. Calculated considering risk-free interest rates, the remaining term of the derivatives, the dividend yields, the share price, and the volatility of our share.		NA		NA
		Call option on equity shares		Level 3		Market approach. Company valuation using revenue multiples (2017: EBITDA multiples) based on actual results derived from the investee.		Revenue multiples (2017: EBITDA multiples) used Revenue (2017: EBITDA) of the investee		The estimated fair value would increase (decrease) if: - The revenue multiples (2017: EBITDA multiples) were higher (lower) - The investees revenue (2017: EBITDA) were higher (lower)
Other financial assets/ Financial liabilities										
		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

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Financial Instruments Not Measured at Fair Value

	Type	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 of the reporting date.

For other non-derivative financial assets/liabilities and variable rate financial debt, it is assumed that their carrying value reasonably approximates their fair values.

Transfers Between Levels 1 and 2

Transfers of 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 46 million in 2018 (2017: 360 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	**2018**	2017
01/01	742	722
Transfers		
Into Level 3	0	0
Out of Level 3	12	100
Purchases	409	257
Sales	143	102
Gains/losses		
Included in financial income, net in profit and loss	168	26
Included in available-for-sale financial assets in other comprehensive income	0	28
Included in exchange differences in other comprehensive income	38	89
12/31	**1,202**	**742**
Change in unrealized gains/losses in profit and loss for equity investments held at the end of the reporting period	0	0

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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 (2017: available-for-sale) as of the reporting date.

(F.3) Adoption of IFRS 9

Effective January 1, 2018, we started to apply IFRS 9 Financial Instruments using the exception from full retrospective application. IFRS 9 replaces the provisions of IAS 39 relating to the classification and measurement of financial instruments, the impairment of financial assets, and hedge accounting. The impact from a different classification of financial assets, the new impairment rules, and the different treatment of cost of hedging are recognized in retained earnings of the opening balance sheet on January 1, 2018. Comparative figures have not been restated but reflect the requirements of IAS 39.

Our new accounting policies are described in the specific notes covering financial instruments, see *Notes (A.2)*, *(D.4)*, *(E.3)*, and *(F.1)*.

The adoption of IFRS 9 resulted in an increase of opening retained earnings of 135 million (net of tax) as of January 1, 2018, which is mainly due to the following:

Implementation of the expected credit loss model for trade receivables and contract assets as well as investments into time deposits and debt investment, leading to a decrease of opening retained earnings by 31 million

Reclassification of amounts attributable to available-for-sale financial assets accumulated in other comprehensive income to opening retained earnings, leading to an increase of opening retained earnings by 157 million

The adoption of IFRS 9 resulted in a decrease of opening other comprehensive income of 160 million (net of tax) as of January 1, 2018, which is mainly due to the following:

Reclassification of amounts attributable to available-for-sale financial assets accumulated in other comprehensive income to opening retained earnings, leading to a decrease of opening other comprehensive income by 157 million

The following table reconciles the carrying amounts and measurement categories of financial assets and liabilities under IAS 39 to the carrying amounts and measurement categories under IFRS 9 for each class of our financial assets and liabilities upon transition to IFRS 9 on January 1, 2018:

Reconciliation of Carrying Amounts and Measurement Categories Upon Transition to IFRS 9

millions	Carrying Amount IAS 39 12/31/2017					Transition to IFRS 9		Carrying Amount IFRS 9 01/01/2018		
	L&R	AFS	HFT	AC	No Measurement Category IAS 39	Reclassification	Remeasurement	AC	FVTPL	No Measurement Category IFRS 9
Assets										
Cash and cash equivalents										
Cash at banks	2,558							2,558		
Time deposits	314						3	311		
Money market and similar funds	1,139					0			1,139	
Trade receivables	5,810				207		25	5,785		207
Other financial assets										
Debt securities		39				0		39		
Equity securities		827				0			827	
Time deposits	736						3	733		
Loans and other financial receivables	163							163		
Derivative assets										
Designated as hedging instrument										
FX forward contracts					29					29
Interest rate swaps					24					24
Not designated as hedging instrument										
FX forward contracts			41						41	

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Call options for share-based payments	90				90	
Call option on equity shares	11				11	
Liabilities						
Trade payables		952	318		952	318
Financial liabilities						
Non-derivative financial liabilities						
Loans		24			24	
Bonds		5,147			5,147	
Private placements		1,130			1,130	
Other non-derivative financial liabilities		208			208	
Derivatives						
Designated as hedging instrument						
FX forward contracts			1			1
Interest rate swaps			1			1
Not designated as hedging instrument						
FX forward contracts	84				84	

The reclassification adjustments result from the following:

Reclassification from available-for-sale to FVTPL

§ Equity securities in listed and unlisted entities classified as available-for-sale financial assets were classified as FVTPL on January 1, 2018. There is no difference between their carrying amounts based on IAS 39 compared to IFRS 9. However, as a result of the change in classification, we have reclassified amounts accumulated in Other components of equity attributable to these equity securities to our opening retained earnings for 2018.

Reclassification from available-for-sale to AC

§ Debt securities consisting of bonds of mainly financial and non-financial corporations and municipalities were reclassified from available-for-sale financial assets to amortized cost on January 1, 2018, as the cash flows from these assets consist solely of payment of principal and interest and our business model is to hold to collect the contractual cash flows. As there was no material difference between the fair value and the amortized cost of these debt securities, there was no material impact on our opening retained earnings for 2018.

§ There was no material difference between the fair value of the debt securities at December 31, 2018 and their amortized cost. Thus, the fair value loss we would have recognized in Other components of equity in 2018, had the debt securities not been reclassified to amortized cost, would not have been material.

Reclassification from AC to FVTPL

§ Investments in money-market and similar funds were reclassified from amortized cost to FVTPL, as their contractual cash flows do not solely represent payments of principal and interest. As such funds have a stable net asset value, there was no difference between amortized cost and fair value and accordingly, no impact on our opening retained earnings for 2018.

The remeasurement adjustments result from the following:

Implementation of the expected credit loss model for trade receivables and contact assets

§ The application of the simplified approach recording lifetime expected credit losses on our trade receivables and contract assets led to an increase of the loss allowance by 25 million with a corresponding impact on our opening retained earnings for 2018.

Implementation of the expected credit loss model for cash at banks, time deposits, and debt securities

§ The application of the general impairment approach on cash at banks, time deposits, and debt securities led to an increase of our expected credit loss allowance by 6 million with a corresponding impact on our opening retained earnings for 2018.

§ The following table reconciles the ending impairment allowance under IAS 39 to the opening expected credit loss allowance under IFRS 9:

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Reconciliation of the Impairment to the Expected Credit Loss Allowance Upon Transition to IFRS 9

millions	Loss Allowance as at 12/31/2017 under IAS 39	Remeasurement	Loss Allowance as at 01/01/2018 under IFRS 9
Financial assets at amortized cost			
Trade receivables and contract assets	74	25	99
Cash at banks, time deposits, debt securities and loans and other receivables	1	6	7

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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) Other Non-Financial Assets

Accounting Policy

Prepaid expenses are recorded at historical cost in the amount of unexpired or unconsumed costs. They are charged to expense over the applicable period.

Prepaid Expenses and Other Tax Assets

millions				**2018**				2017
	Current	Non-Current		Total	Current	Non-Current		Total
Prepaid expenses	305	131		436	264	123		387
Other tax assets	170	98		268	209	66		275
Total	**475**	**229**		**704**	**472**	**189**		**662**
Other non-financial assets	889	1,301		2,191	725	687		1,411
Prepaid expenses and other tax assets as % of other non-financial assets	53	18		32	65	28		47

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			**2018**			2017
	Current	Non-Current	Total	Current	Non-Current	Total
Other tax liabilities	**540**	**0**	**540**	**568**	**0**	**568**
Other non-financial liabilities	4,120	501	4,621	3,982	514	4,496
Other tax liabilities as % of other non-financial liabilities	13	0	12	14	0	13

(G.3) Financial Commitments Operating Leases

millions	2018	2017
Operating leases	**1,442**	**1,459**

Our operating leases relate primarily to the lease of office space, hardware, and vehicles, with remaining non-cancelable lease terms between less than one year and 50 years. On a limited scale, the operating lease contracts include escalation clauses (based, for example, on the consumer price index) and renewal options.

Our rental and operating lease expenses were 708 million, 532 million, and 458 million for the years 2018, 2017, and 2016, respectively.

Maturities

millions	**12/31/2018**
	Operating Leases
Due 2019	351
Due 2020 to 2023	755
Due thereafter	336
Total	**1,442**

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(G.4) Other Litigation, Claims, and Legal Contingencies

This Note discloses information about intellectual property-related litigation and claims, tax-related litigation other than income tax-related litigation (see *Note (C.5)*), and anti-bribery and export control matters.

Accounting Policies, Judgments, and Estimates

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 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 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, 2018, 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, 2018 and 2017. 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, 2018, 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 not yet scheduled.

In February 2010, United States-based TecSec, Inc. (TecSec) instituted legal proceedings in the United States against SAP (including its subsidiary Sybase) and many other defendants. TecSec alleged that SAP s and Sybase s products infringe one or more of the claims in five patents held by TecSec. In its complaint, TecSec seeks unspecified monetary damages and permanent injunctive relief. The lawsuit is proceeding but only with respect to one defendant. The trial for SAP (including its subsidiary Sybase) has not yet been scheduled the lawsuit for SAP (including its subsidiary Sybase) remains stayed.

Tax-Related Litigation

We are subject to ongoing audits by domestic and foreign tax authorities. In respect of non-income taxes, we, like many other companies operating in Brazil, are involved in various proceedings with Brazilian tax authorities regarding assessments and litigation matters on intercompany royalty payments and intercompany services. The total potential amount in dispute related to these matters for all applicable years is approximately 95 million (2017: 102 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 South Africa, the United States (including the U.S. Foreign Corrupt Practices Act (FCPA)), and other countries. The Legal Compliance and Integrity Office of SAP is conducting investigations with the assistance of an external law firm and voluntarily advised local authorities in South Africa as well as the U.S. Securities and Exchange Commission (U.S. SEC) and the U.S. Department of Justice (U.S. DOJ). The investigations and dialogue with the local authorities and the U.S. SEC and U.S. DOJ are ongoing. SAP is cooperating with both the external law firm engaged for the investigations and the authorities.

The alleged conduct may result in monetary penalties or other sanctions under the FCPA and/or other anti-bribery laws. In addition, SAP s ability to conduct business in certain jurisdictions could be negatively impacted. The comprehensive and exhaustive investigations and the corresponding remediation activities are still 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 or financial impact.

SAP has implemented substantial enhancements to its anti-corruption compliance program, including additional policy changes and more robust internal controls. SAP has appointed new management in some business units and has increased its compliance staff. Moreover, SAP has banned the use of commissioned business development partners as well as certain sales commission agents in high-risk markets and has undertaken a systematic review of all relationships with state-owned entities and institutions in Africa. We remain fully committed to compliance with all U.S., German, EU,

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and South African laws, as well as the laws and regulations in every jurisdiction in which SAP operates.

Furthermore, we continue to investigate separate allegations regarding conduct that certain independent SAP partners violated SAP contractual terms and sold SAP products and services in embargoed countries. These SAP partners presumably did not adhere to SAP s strict procedures for indirect business activities. To the extent any company independent from SAP chooses not to follow SAP s licensing procedures, SAP is ultimately limited in its ability to stop their activities. SAP devotes considerable resources to prevent and mitigate such activities should they occur. We are also investigating allegations regarding direct sales from SAP to certain customers, who may have engaged in unauthorized activities in embargoed countries. The investigations are being conducted by SAP s Legal Compliance and Integrity Office and SAP s Export Controls 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.

SAP has taken remedial actions to terminate access to SAP products and services for certain end users and block additional business activities with these end users through SAP or SAP partners. We have implemented further enhancements to our export control compliance program, including new internal controls, and have increased the capacity of the Export Control Compliance team with a particular focus on high-risk countries. SAP has also required additional due diligence, conducted by independent third-parties, for certain SAP partners based in high-risk regions. We are fully committed to compliance with all U.S., EU, and German laws regarding economic sanctions and export controls, including laws restricting the sale, export, and usage of SAP software and services in Iran and in other embargoed countries.

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 2018. It is also not practicable to estimate the financial effect of any contingent liabilities that may result from these potential violations.

(G.5) Board of Directors

Executive Board

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP on December 31, 2018

Bill McDermott

Chief Executive Officer

Strategy, Governance, Digital Government, Business Development, Corporate Development, Global Corporate Affairs, Corporate Audit and Global Marketing

Board of Directors, ANSYS, Inc., Canonsburg, PA, United States

Board of Directors, Under Armour, Inc., Baltimore, MD, United States

Board of Directors, Dell Secure Works, Atlanta, GA, United States

Robert Enslin

Cloud Business Group

SAP Business Network Segment (including SAP Concur, SAP Ariba, and SAP Fieldglass), Customer and Experience Management Segment (including Customer Experience and Qualtrics), Development and Delivery of SAP SuccessFactors (as part of the Applications, Technology & Services Segment)

Board of Directors, Discovery Limited, Johannesburg, South Africa
Board of Directors, Docker, Inc., San Francisco, CA, United States

Adaire Fox-Martin

Global Customer Operations (EMEA, MEE, and Greater China)
Global Sales, Regional Field Organizations, Line of Business Solutions Sales

Christian Klein (from January 1, 2018)

Chief Operating Officer
Intelligent Enterprise Group
Global Development and Delivery of SAP s Core Applications, Global Business Operations, IT Services, Cloud Infrastructure

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Michael Kleinemeier

SAP Digital Business Services (Co-Lead with Bernd Leukert)

Global Services Delivery, Regional Field Services

Supervisory Board, innogy SE, Essen, Germany
Board of Partners, E. Merck KG, Darmstadt, Germany (from January 27, 2019)

Bernd Leukert

SAP Digital Business Services (Co-Lead with Michael Kleinemeier)

Global Support Delivery, Global Innovation Services, Global Customer Success Group, Global User Groups, Digital Interconnect, SAP HANA Enterprise Cloud, Application Innovation Services, SAP Innovative Business Solutions, SAP Secrecy

Supervisory Board, DFKI (Deutsches Forschungszentrum für Künstliche Intelligenz GmbH), Kaiserslautern, Germany

Supervisory Board, Bertelsmann SE & Co. KGaA, Guetersloh, Germany

Supervisory Board TomTom N.V., Amsterdam, the Netherlands

Jennifer Morgan

Global Customer Operations (Americas and APJ)
Global Sales, Regional Field Organizations, Line of Business Solutions Sales

Board of Directors, Bank of New York Mellon, New York, NY, United States

Luka Mucic

Chief Financial Officer

Global Finance and Administration including Investor Relations and Data Protection & Privacy, Global Security

Jürgen Müller (from January 1, 2019)

Chief Innovation 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

Supervisory Board

Memberships on supervisory boards and other comparable governing bodies of enterprises, other than subsidiaries of SAP on December 31, 2018

Prof. Dr. h.c. mult. Hasso Plattner 2), 4), 6), 7), 8)

Chairman

Margret Klein-Magar 1), 2), 4),

Deputy Chairperson

Vice President, Head of SAP Alumni Relations

Chairperson of the Spokespersons Committee of Senior Managers of SAP SE

Pekka Ala-Pietilä 2), 4), 5), 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

Panagiotis Bissiritsas 1), 3), 4), 5)

Support Expert
Member of Works Council SAP SE

Martin Duffek 1), 3), 4), 8)

Product Manager

Aicha Evans 2), 4), 8)

Senior Vice President and Chief Strategy Officer, Intel Corporation, Santa Clara, CA, United States

Diane Greene (from May 17, 2018) 4)

Chief Executive Officer. Google Cloud, Google LLC, Mountain View, CA, United States (until January 28, 2019)

Board of Directors, Alphabet, Inc., Mountain View, CA, United States
Board of Directors, Stripe Inc., San Francisco, CA, United States (from January 31, 2019)

Andreas Hahn 1), 2), 4)

Product Expert, IoT Standards,

Member of Works Council SAP SE

Prof. Dr. Gesche Joost 4), 8)

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

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Lars Lamadé 1), 2), 7), 8)

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, Wonga Group Ltd., London, United Kingdom (until September 6, 2018)

Board of Directors, SCYTL Secure Electronic Voting SA, Barcelona, Spain (until November 7, 2018)

Board of Directors, Vestiaire Collective SA, Levallois-Perret, France

Board of Directors, Dashlane, Inc., New York, NY, United States

Board of Directors, Recorded Future, Inc., Cambridge, MA, United States

Board of Directors, eWise Group, Inc., Redwood City,
CA, United States

Board of Directors, Qubit Digital Ltd., London, United Kingdom

Board of Directors, Stanford University, Stanford,
CA, United States (until March 31, 2018)

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 (from February 5, 2018)
Board of Directors, Tim Talent SAS, Paris, France (from February 6, 2018)
Board of Directors, Citymapper Ltd., London, United Kingdom

Gerhard Oswald (from January 1, 2019),

Managing Director of Oswald Consulting GmbH, Walldorf, Germany

Advisory Board, TSG 1899 Hoffenheim Fußball-Spielbetriebs GmbH, Sinsheim, Germany

Christine Regitz 1), 4), 8)

Vice President User Experience

Chief Product Expert

Dr. Friederike Rotsch (from May 17, 2018) 3), 5), 7)

Group General Counsel and Head of Group Legal & Compliance, Merck KGaA, Darmstadt, Germany

Dr. Erhard Schipporeit 3), 5), 7)

Independent Management Consultant

Supervisory Board, Talanx AG, Hanover, Germany

Supervisory Board, Deutsche Börse AG, Frankfurt am Main, Germany (until May 16, 2018)

Supervisory Board, HDI V.a.G., Hanover, Germany

Supervisory Board, Hannover Rückversicherung SE, Hanover, Germany

Supervisory Board, Fuchs Petrolub SE, Mannheim, Germany

Supervisory Board, BDO AG, Hamburg, Germany

Supervisory Board, RWE AG, Essen, Germany

Chairman of the Supervisory Board, innogy SE, Essen, Germany

Robert Schuschnig-Fowler 1), 5), 8)

Account Manager, Senior Support Consultant
Deputy Chairman of SAP SE Works Council Europe (until November 19, 2018)
Member of Works Council SAP SE

Dr. Sebastian Sick 1), 2), 5), 7)

Head of Company Law Unit, Hans Böckler Foundation, Duesseldorf, Germany

Pierre Thiollet 1), 4)

Webmaster (P&I)

Member of the SAP France Works Council

Secretary of CHSCT (Hygiene, Security and Work Conditions Committee)

Supervisory Board Members Who Left During 2018

Prof. Anja Feldmann (until December 31, 2018)

Prof. Dr. Wilhelm Haarmann (until May 17, 2018)
Prof. Dr.-Ing. Dr.-Ing. E. h. Klaus Wucherer (until May 17, 2018)

Information as at December 31, 2018

1) Elected by the employees

2) Member of the Company s General and Compensation Committee

3) Member of the Company s Audit Committee

4) Member of the Company s Technology and Strategy Committee

5) Member of the Company s Finance and Investment Committee

6) Member of the Company s Nomination Committee

7) Member of the Company s Special Committee

8) Member of the Company s People and Organization Committee

(G.6) 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 year under the LTI 2016 Plan, effective January 1, 2016.

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.

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The total compensation of the Executive Board members for the years 2018, 2017, and 2016 was as follows:

Executive Board Compensation

thousands	**2018**	**2017**	2016
Short-term employee benefits	18,652	16,634	19,206
Share-based payment1)	23,646	25,723	23,942
Subtotal1)	**42,298**	**42,357**	**43,148**
Post-employment benefits	1,106	1,312	2,398
Thereof defined-benefit	250	423	1,792
Thereof defined-contribution	856	889	606
Total1)	**43,404**	**43,669**	**45,546**

1) Portion of total executive compensation allocated to the respective year

Share-Based Payment for Executive Board Members

	2018	**2017**	2016
Number of RSUs granted	118,072	117,929	147,041
Number of PSUs granted	177,106	176,886	220,561
Total expense in thousands	8,054	19,068	14,233

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	**2018**	**2017**	2016
DBO 12/31	3,441	3,191	10,739
Annual pension entitlement	192	148	470

The total annual compensation of the Supervisory Board members is as follows:

Supervisory Board Compensation

thousands	**2018**	**2017**	2016
Total compensation	3,702	3,663	3,652
Thereof fixed compensation	3,162	3,135	3,135

Thereof committee remuneration	540	528	517

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	**2018**	**2017**	2016
Payments	2,054	1,997	1,667
DBO 12/31	38,374	39,993	33,935

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 2018, 2017, or 2016.

(G.7) 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 our Supervisory Board and Chief Software Advisor of SAP, engaged in the following transactions with SAP: providing consulting services to SAP, receiving sport sponsoring from SAP, making purchases of SAP products and services, and selling a piece of land to SAP.

Wilhelm Haarmann, member of the Supervisory Board until May 17, 2018, practices as a partner in the law firm Linklaters LLP in Frankfurt am Main, Germany. SAP occasionally purchased and purchases legal and similar services from Linklaters.

Occasionally, members of the Executive Board of SAP SE obtain services from SAP for which they pay a consideration consistent with those negotiated at arm s length between unrelated parties.

All amounts related to the abovementioned transactions were immaterial to SAP in all periods presented.

In total, we sold products and services to companies controlled by members of the Supervisory Board in the amount of 37 million (2017: 2 million), we bought products and services from such companies in the amount of 3 million (2017: 5 million), and we provided sponsoring and other financial support to such companies in the amount of 4 million (2017: 4 million). Outstanding balances at year end from transactions with such companies were 3 million (2017: 0 million) for amounts owed to such companies and 28 million (2017: 0 million) for amounts owed by such companies. All of these balances are unsecured and interest-free and settlement is expected to occur in cash. Commitments (the longest of which is for five years) made by us to purchase further goods or services from these companies and to provide further sponsoring and other financial support amount to

191 million as at December 31, 2018 (2017: 21 million).

In total, we sold services to members of the Executive Board and the Supervisory Board in the amount of 0 million (2017: 0 million), and we received services from members of the Supervisory Board (including services from employee representatives on the Supervisory Board in their capacity as employees of SAP) in the amount of 1 million (2017: 1 million). Amounts owed, but not yet paid, to Supervisory Board members from these transactions were 0 million as at December 31, 2018 (2017: 0 million). All of these balances are unsecured and interest-free and settlement is expected to occur in cash.

For information about the compensation of our Executive Board and Supervisory Board members, see *Note (G.6)*.

(G.8) Principal Accountant Fees and Services

At the Annual General Meeting of Shareholders held on May 17, 2018, our shareholders elected KPMG AG Wirtschaftsprüfungsgesellschaft as SAP s independent auditor for 2018. KPMG AG Wirtschaftsprüfungsgesellschaft has been the company s principal auditor

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since the fiscal year 2002. KPMG AG Wirtschaftsprüfungsgesellschaft and other firms in the global KPMG network charged the following fees to SAP

for audit and other professional services related to 2018 and the previous years:

millions			**2018**			2017			2016
	KPMG AG (Germany)	Foreign KPMG Firms	Total	KPMG AG (Germany)	Foreign KPMG Firms	Total	KPMG AG (Germany)	Foreign KPMG Firms	Total
Audit fees	3	6	9	3	7	10	3	6	9
Audit-related fees	0	0	0	0	0	0	0	1	1
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**	**6**	**9**	**3**	**7**	**10**	**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 or review of our financial statements and are not reported under audit fees.

(G.9) Events After the Reporting Period

Business Combinations Acquisition of Qualtrics

On January 23, 2019, we concluded the acquisition of Qualtrics, following satisfaction of applicable regulatory and other approvals.

Qualtrics is a leading provider of customer relationship management (CRM) 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 will also incur liabilities and post-closing expenses relating to assumed share-based payment awards amounting to approximately US$0.9 billion.

The financial effects of this transaction have not been recognized in the consolidated financial statements as at December 31, 2018. The operating results and assets and liabilities of Qualtrics will be reflected in our consolidated financial statements from January 23, 2019, onward.

Qualtrics Acquisition: Consideration Transferred (Provisional Amounts)

billions	
Cash paid	6.2
Liabilities incurred	0.3
Total consideration transferred	**6.5**

The liabilities incurred (the amounts above are provisional as forfeiture rates and so on have not been finally determined) 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 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.

The following table summarizes the provisional values of identifiable assets acquired and liabilities assumed in connection with the acquisition of Qualtrics, as at the acquisition date.

Qualtrics Acquisition: Provisional Amounts of Assets and Liabilities

billions	
Cash and cash equivalents	0.1
Trade and other receivables	0.1
Property, plant, and equipment	0.1
Intangible assets	2.0
Thereof acquired technology	0.5
Thereof customer relationship and other intangibles	1.5
Total identifiable assets	**2.3**
Trade and other payables	0.1
Current and deferred tax liabilities	0.3
Contract liabilities/deferred income	0.1
Other liabilities	0.1
Total identifiable liabilities	**0.6**
Total identifiable net assets	**1.7**
Goodwill	**4.8**
Total consideration transferred	**6.5**

We have not yet completed the accounting for the Qualtrics acquisition. In particular, the fair values of the intangible assets and contract liabilities disclosed above have only been determined provisionally (with the provisional values of the intangibles being based on benchmarks), as the valuations have only just started. The tax related assets and liabilities presented above might also vary significantly, as deferred taxes from investments in subsidiaries, unused tax losses, and so on, could not be finally determined. It is also not yet possible to provide detailed information about each class of acquired receivables or contingent liabilities.

In general, the goodwill arising from the acquisitions consists largely of the synergies and the know-how and technical skills of the acquired businesses workforces.

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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
- 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. We have not yet completed the identification of those benefits.

Restructuring

As we intensify our focus on our key strategic growth areas, we will execute a company-wide restructuring program in 2019 to further simplify company structures and processes and to ensure that our organizational setup, skills set, and resource allocation continue to meet evolving customer demand. The main features of the restructuring plan were announced on January 29, 2019. Restructuring expenses are projected to be 800 million to 950 million.

(G.10) Scope of Consolidation, Subsidiaries and Other Equity Investments

Entities Consolidated in the Financial Statements

	Total
12/31/2016	245
Additions	10
Disposals	28
12/31/2017	227
Additions	59
Disposals	21
12/31/2018	**265**

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.

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Subsidiaries

Major Subsidiaries

Name and Location of Company	Ownership	Total Revenue in 20181)	Profit/Loss ( ) After Tax for 20181)	Total Equity as at 12/31/20181)	Number of Employees as at 12/31/20182)	Foot-note
	%	thousands	thousands	thousands		
Ariba, Inc., Palo Alto, CA, United States	100.0	1,168,287	212,728	3,972,022	1,872	
Callidus Software Inc., Dublin, CA, United States	100.0	175,789	52,016	2,053,873	810	4)
Concur Technologies, Inc., Bellevue, WA, United States	100.0	1,545,720	1,787	7,340,513	3,569	
LLC SAP CIS, Moscow, Russia	100.0	472,531	23,133	62,725	837	
SAP (Schweiz) AG, Biel, Switzerland	100.0	822,547	68,029	84,935	767	
SAP (UK) Limited, Feltham, United Kingdom	100.0	1,227,572	10,385	47,516	1,794	10), 17)
SAP America, Inc., Newtown Square, PA, United States	100.0	5,363,074	514,481	14,320,071	8,184	
SAP Argentina S.A., Buenos Aires, Argentina	100.0	142,718	25,540	15,237	825	17)
SAP Asia Pte Ltd, Singapore, Singapore	100.0	458,919	28,224	21,625	1,262	17)
SAP Australia Pty Ltd, Sydney, Australia	100.0	733,060	18,774	42,366	1,322	
SAP Brasil Ltda, São Paulo, Brazil	100.0	519,124	33,903	26,346	1,913	
SAP Canada, Inc., Toronto, Canada	100.0	865,582	53,734	465,034	2,999	
SAP China Co., Ltd., Shanghai, China	100.0	949,367	67,883	184,135	5,272	17)
SAP Deutschland SE & Co. KG, Walldorf, Germany	100.0	4,199,201	754,022	1,567,774	4,707	7), 9)
SAP España Sistemas, Aplicaciones y Productos en la Informática, S.A., Madrid, Spain	100.0	491,270	24,691	336,419	652	
SAP France, Levallois Perret, France	100.0	1,051,242	156,005	1,606,922	1,564	
SAP Hungary Rendszerek, Alkalmazások és Termékek az Adatfeldolgozásban Informatikai Kft., Budapest, Hungary	100.0	112,448	1,775	21,073	956	
SAP India Private Limited, Bangalore, India	100.0	621,942	72,674	344,218	2,028	
SAP Industries, Inc., Newtown Square, PA, United States	100.0	638,394	118,321	691,709	338	
SAP Italia Sistemi Applicazioni Prodotti in Data Processing S.p.A., Vimercate, Italy	100.0	563,346	39,332	427,184	710	
SAP Japan Co., Ltd., Tokyo, Japan	100.0	980,832	82,902	192,939	1,210	
SAP Labs India Private Limited, Bangalore, India	100.0	477,630	40,051	132,888	8,282	
SAP Labs, LLC, Palo Alto, CA, United States	100.0	604,460	124,246	484,511	2,189	
SAP México S.A. de C.V., Mexico City, Mexico	100.0	386,079	10,984	20,172	869	17)
SAP National Security Services, Inc., Newtown Square, PA, United States	100.0	552,326	130,945	426,052	448	
SAP Nederland B.V., s-Hertogenbosch, the Netherlands	100.0	613,282	52,886	145,553	611	11)
SAP Service and Support Centre (Ireland) Limited, Dublin, Ireland	100.0	180,364	15,930	65,128	1,628	
SuccessFactors, Inc., South San Francisco, CA, United States	100.0	867,910	203,903	3,609,046	999	

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Other Subsidiaries 3)

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 Europe Limited, London, United Kingdom	100.0	10)
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	4)
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., Ko ice, Slovakia	100.0	
Ariba Software Technology Services (Shanghai) Co., Ltd., Shanghai, China	100.0	
Ariba Technologies India Private Limited, Bangalore, India	100.0	
Ariba Technologies Netherlands B.V., s-Hertogenbosch, the Netherlands	100.0	11)
Beijing Zhang Zhong Hu Dong Information Technology Co., Ltd., Beijing, China	0	5)
b-process, Paris, France	100.0	14)
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 (Canada) Inc., Toronto, Canada	100.0	4)
Callidus Software (Singapore) Pte. Ltd., Singapore, Singapore	100.0	4)
Callidus Software GmbH, Munich, Germany	100.0	4), 8), 9)
Callidus Software Hong Kong Ltd., Hong Kong, China	100.0	4)
Callidus Software Ltd., London, United Kingdom	100.0	4), 10)
Callidus Software Pty. Ltd., Sydney, Australia	100.0	4)
CallidusCloud (India) Pvt. Ltd., Hyderabad, India	100.0	4)
CallidusCloud (Malaysia) Sdn. Bhd., Kuala Lumpur, Malaysia	100.0	4)
CallidusCloud Holdings Pty. Ltd., Sydney, Australia	100.0	4)
CallidusCloud K.K., Tokyo, Japan	100.0	4)

Name and Location of Company	Owner-ship	Foot-note
	%	
CallidusCloud Mexico, S. de R.L. de C.V., Mexico City, Mexico	100.0	4)
CallidusCloud Netherlands B.V., Rotterdam, the Netherlands	100.0	4), 11)
CallidusCloud New Zealand Corp., Auckland, New Zealand	100.0	4)
CallidusCloud Pty. Ltd., Sydney, Australia	100.0	4)
Christie Partners Holding C.V., s-Hertogenbosch, the Netherlands	100.0	11)
C-Learning Pty. Ltd., Sydney, Australia	100.0	4)
ClearTrip Inc. (Mauritius), Ebene, Mauritius	57.0	
ClearTrip Inc., George Town, Cayman Islands	57.0	
Cleartrip MEA FZ LLC, Dubai, United Arab Emirates	57.0	
Cleartrip Packages and Tours Private Limited, Mumbai, India	57.0	4)

ClearTrip Private Limited, Mumbai, India		57.0		
Clicktools Limited, Dorset, United Kingdom		100.0		4), 10)
CNQR Operations Mexico S. de. R.L. de. C.V., San Pedro Garza Garcia, Mexico		100.0		
Concur (Austria) GmbH, Vienna, Austria		100.0		
Concur (Canada), Inc., Toronto, Canada		100.0		
Concur (France) SAS, Paris, France		100.0		
Concur (Germany) GmbH, Frankfurt am Main, Germany		100.0		8), 9)
Concur (Japan) Ltd., Tokyo, Japan		73.8		
Concur (New Zealand) Limited, Wellington, New Zealand		100.0		15)
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		17)
Concur Technologies (UK) Limited, London, United Kingdom		100.0		10)
Contextor SAS, Orsay, France		100.0		4)
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)

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Name and Location of Company		Owner-ship		Foot-note
		%		
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		4)
Dorset Acquisition Corp., Dublin, CA, United States		100.0		4)
Ebreez Egypt LLC, Cairo, Egypt		57.0		4)
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		57.0		4)
Flyin Travel and Tourism Private Limited, Hyderabad, India		57.0		4)
Flyin Travel Limited, Limassol, Cyprus		57.0		4)
Flyin Travel S.A.E, Cairo, Egypt		57.0		4)
FreeMarkets Ltda., São Paulo, Brazil		100.0		
Gigya Australia Pty Ltd, Syndey, Australia		100.0		
Gigya UK Ltd, London, United Kingdom		100.0		10)
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		
LeadFormix, Inc., Dublin, CA, United States		100.0		4)
Learning Heroes Ltd., Cheshire, United Kingdom		100.0		4), 10)
Learning Seat Borrowings Pty. Ltd., Sydney, Australia		100.0		4)
Learning Seat Group Pty. Ltd., Sydney, Australia		100.0		4)
Learning Seat Holdings Pty. Ltd., Sydney, Australia		100.0		4)
Learning Seat Pty. Ltd., Sydney, Australia		100.0		4)
LLC SAP Labs , Moscow, Russia		100.0		
LLC SAP Ukraine , Kiev, Ukraine		100.0		17)
Merlin Systems Oy, Espoo, Finland		100.0		
Nihon Ariba K.K., Tokyo, Japan		100.0		
Noteshark, LLC, Chantilly, VA, United States		51.0		4)
OrientDB Limited, London, United Kingdom		100.0		4), 10)
Outerjoin, Inc., Dublin, CA, United States		100.0		4)
OutlookSoft Deutschland GmbH, Walldorf, Germany		100.0		
Plat.One Inc., Palo Alto, CA, United States		100.0		
Plat.One Lab Srl, Bogliasco, Italy		100.0		
Plateau Systems LLC, South San Francisco, CA, United States		100.0		

Name and Location of Company		Owner-ship		Foot-note
		%		
PT SAP Indonesia, Jakarta, Indonesia		99.0		
Quadrem Africa Pty. Ltd., Johannesburg, South Africa		100.0		
Quadrem Brazil Ltda., Rio de Janeiro, Brazil		100.0		
Quadrem Chile Ltda., Santiago de Chile, Chile		100.0		
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		
RevSym Inc., Dublin, CA, United States		100.0		4)
RevSym Software India Private Limited, Bangalore, India		100.0		4)
Ruan Lian Technologies (Beijing) Co., Ltd., Beijing, China		100.0		
SAP (Beijing) Software System Co., Ltd., Beijing, China		100.0		
SAP Andina y de.Caribe VE, Caracas, Venezuela		100.0		17)
SAP AZ LLC, Baku, Azerbaijan		100.0		
SAP Belgium NV/SA, Brussels, Belgium		100.0		
SAP Beteiligungs GmbH, Walldorf, Germany		100.0		
SAP Bulgaria EOOD, Sofia, Bulgaria		100.0		
SAP Business Compliance Services GmbH, Siegen, Germany		100.0		
SAP Business Services Center Nederland B.V., s-Hertogenbosch, the Netherlands		100.0		11)
SAP Chile Limitada, Santiago, Chile		100.0		17)
SAP China Holding Co., Ltd., Beijing, China		100.0		
SAP Colombia S.A.S., Bogotá, Colombia		100.0		17)
SAP Commercial Services Ltd., Valletta, Malta		100.0		17)
SAP Costa Rica, S.A., San José, Costa Rica		100.0		17)
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		17)
SAP Egypt LLC, Cairo, Egypt		100.0		17)
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		

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Name and Location of Company		Owner-ship		Foot-note
		%		
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		17)
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		17)
SAP Korea Ltd., Seoul, South Korea		100.0		
SAP Labs Bulgaria EOOD, Sofia, Bulgaria		100.0		
SAP Labs Finland Oy, Espoo, Finland		100.0		
SAP Labs France SAS, Mougins, France		100.0		
SAP Labs Israel Ltd., Ra anana, Israel		100.0		
SAP Labs Korea, Inc., Seoul, South Korea		100.0		
SAP Latvia SIA, Riga, Latvia		100.0		
SAP Malaysia Sdn. Bhd., Kuala Lumpur, Malaysia		100.0		
SAP Malta Investments Ltd., Valletta, Malta		100.0		17)
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), 17)
SAP Nederland Holding B.V., s-Hertogenbosch, the Netherlands		100.0		11)
SAP New Zealand Limited, Auckland, New Zealand		100.0		
SAP Norge AS, Lysaker, Norway		100.0		
SAP North West Africa Ltd, Casablanca, Morocco		100.0		
SAP Österreich GmbH, Vienna, Austria		100.0		
SAP Perú S.A.C., Lima, Peru		100.0		17)
SAP Philippines, Inc., Makati, Philippines		100.0		
SAP Polska Sp. z o.o., Warsaw, Poland		100.0		
SAP Portals Europe GmbH, Walldorf, Germany		100.0		
SAP Portals Holding Beteiligungs GmbH, Walldorf, Germany		100.0		
SAP Portals Israel Ltd., Ra anana, Israel		100.0		
SAP Portugal Sistemas, Aplicações e Produtos Informáticos, Sociedade Unipessoal, Lda., Porto Salvo, Portugal		100.0		
SAP Projektverwaltungs- und Beteiligungs GmbH, Walldorf, Germany		100.0		
SAP Public Services, Inc., Washington, DC, United States		100.0		

Name and Location of Company		Owner-ship		Foot-note
		%		
SAP Puerto Rico GmbH, Walldorf, Germany		100.0		8), 9), 17)
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		100.0		
SAP Saudi Arabia Software Trading Ltd, Riyadh, Kingdom of Saudi Arabia		75.0		17)
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 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), 17)
SAP Svenska Aktiebolag, Stockholm, Sweden		100.0		17)
SAP System Application and Products Asia Myanmar Limited, Yangon, Myanmar		100.0		
SAP Systems, Applications and Products in Data Processing (Thailand) Ltd., Bangkok, Thailand		100.0		
SAP Taiwan Co., Ltd., Taipei, Taiwan		100.0		17)
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, L.P., Palo Alto, CA, United Stated		0		4), 6)
Sapphire Fund Investments III, L.P., Palo Alto, CA, United States		0		4), 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		4), 6)

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Name and Location of Company		Owner-ship		Foot-note
		%		
SAPV (Mauritius), Ebene, Mauritius		0		6)
Saudi Ebreez Company for Electronic Services LLC , Riyadh, Kingdom of Saudi Arabia		57.0		4)
SFI II Blocker, LLC, Palo Alto, CA, United States		0		4), 6)
SuccessFactors (Philippines), Inc., Pasig City, Philippines		100.0		
SuccessFactors Asia Pacific Limited, Hong Kong, China		100.0		
SuccessFactors Cayman, Ltd., Grand Cayman, Cayman Islands		100.0		
Sybase 365 Ltd., Tortola, British Virgin Islands		100.0		
Sybase 365, LLC, San Ramon, CA, United States		100.0		
Sybase Angola, LDA, Luanda, Angola		100.0		16)
Sybase Iberia S.L., Madrid, Spain		100.0		
Sybase India Ltd., Mumbai, India		100.0		
Sybase International Holdings Corporation, LLC, San Ramon, CA, United States		100.0		
Sybase Philippines, Inc., Makati City, Philippines		100.0		
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		17)
Systems Applications Products Nigeria Limited, Victoria Island, Nigeria		100.0		17)
Technology Management Associates Inc., Herndon, VA, United States		100.0		4)
TomorrowNow, Inc., Bryan, TX, United States		100.0		
TRX Europe Limited, London, United Kingdom		100.0		10)
TRX Luxembourg, S.a.r.l., Luxembourg City, Luxembourg		100.0		
TRX Technologies India Private Limited, Raman Nagar, India		100.0		
TRX UK Limited, London, United Kingdom		100.0		10)
TRX, Inc., Bellevue, WA, United States		100.0		
Volume Integration, Inc., VA, United States		100.0		
Webcom d.o.o., Belgrade, Serbia		100.0		4)
Webcom, Inc., Dublin, CA, United States		100.0		4)

1) These figures are based on our local IFRS financial statements prior to eliminations resulting from consolidation and therefore do not reflect the contribution of these companies included in the Consolidated Financial Statements. The translation of the equity into Group currency is based on period-end closing exchange rates, and on average exchange rates for revenue and net income/loss.

2) As at December 31, 2018, including managing directors, in FTE.

3) 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 2018.

5) Agreements with the other shareholders provide that SAP SE fully controls the entity.

6) SAP SE has the following structured entities: SAP.io Fund, L.P, Sapphire Fund Investments II, L.P., Sapphire Fund Investments III, L.P., Sapphire SAP HANA Fund of Funds, L.P., Sapphire Ventures Fund I, L.P., Sapphire Ventures Fund II, L.P., Sapphire Ventures Fund III, L.P, Sapphire Ventures Fund IV, L.P., SAPV (Mauritius), and SFI II Blocker, LLC. 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.

9) 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.

10) 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, 2018, or in respect of its financial year ended September 30, 2018, respectively.

11) 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, 2018, or in respect of its financial year ended September 30, 2018, respectively.

12) 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, 2018.

13) 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, 2018, or in respect of its financial year ended September 30, 2018, respectively.

14) The entity is exempt of preparation and audit of its financial statements on the grounds of article L-123-12 of the French commercial code as the entity changed its financial year closing date to June 30, 2019 instead of December 31, 2018. The obligation to prepare and audit the financial statements is due only at the closing date of the financial year which is usually 12 months, but can be shorter or longer when the entity changes its closing date.

15) 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, 2018.

16) Pursuant to Angola Tax Law and Presidential Decree no. 147/13 of October 1, 2013, the entity does not qualified as being a Large Taxpayer and therefore is exempt from having its financial statements audited in respect of its financial year ended December 31, 2018.

17) Entity with support letter issued by SAP SE.

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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		37.32
Procurement Negócios Eletrônicos S/A, Rio de Janeiro, Brazil		17.00
Visage Mobile, Inc., Milwaukee, WI, United States		4.50
Yapta, Inc., Seattle, WA, United States		45.71

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 I LLC, San Francisco, CA, United States		
All Tax Platform - Solucoes Tributarias S.A., São Paulo, Brazil		
Amplify Partners II L.P., Menlo Park, CA, United States		
Amplify Partners 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		
Auth0, Inc., Bellevue, WA, United States		
Blue Yard Capital I GmbH & Co. KG, Berlin, Germany		
Catchpoint Systems, Inc., New York, NY, United States		
Char Software, Inc., Boston, MA, United States		
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		
Culture Amp, Inc., San Francisco, CA, United States		
Data Collective II L.P., San Francisco, CA, United States		
Data Collective III L.P., San Francisco, CA, United States		
Data Collective IV, L.P., San Francisco, CA, United States		
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 Ventures II, L.P., London, United Kingdom		
Follow Analytics, Inc., San Francisco, CA, United States		
GK Software AG, Schöneck, Germany		

Greater Pacific Capital (Cayman) L.P., Grand Cayman, Cayman Islands		

IDG Ventures USA III, L.P., San Francisco, CA, United States		
IEX Group, Inc., New York, NY, United States		
InfluxData, Inc., San Francisco, CA, United States		
InnovationLab GmbH, Heidelberg, Germany		
innoWerft Technologie- und Gründerzentrum Walldorf Stiftung GmbH, Walldorf, Germany		
JFrog, Ltd., Netanya, Israel		
Jibe, Inc., New York, NY, United States		
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		
Livongo Health, Inc., Mountain View, CA, United States		
Local Globe VII, L.P., St. Peter Port, Guernsey, Channel Islands		
Local Globe VIII, L.P., St. Peter Port, Guernsey, Channel Islands		
Looker Data Sciences, Inc., Santa Cruz, CA, United States		
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		
Notation Capital, L.P., Brooklyn, NY, United States		
On Deck Capital, Inc., New York, NY, United States		
OpenX Software Limited, Pasadena, CA, United States		
OpsRamp, Inc., San Jose, CA, United States		
Pendo.io, Inc., Raleigh, NC, United States		
Pheonix Labs Canada, ULC, Burnaby, BC, Canada		
Point Nine Annex GmbH & Co. KG, Berlin, Germany		
Point Nine Capital Fund II GmbH & Co. KG, Berlin, Germany		
Point Nine Capital Fund III GmbH & Co. KG, Berlin, Germany		
Point Nine Capital Fund IV GmbH & Co. KG, Berlin, Germany		
Portworx Inc., Los Altos, CA , United States		
Post for Systems, Cairo, Egypt		
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		

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Return Path, Inc., New York, NY, United States		
Ridge Ventures IV, L.P., San Francisco, CA, United States		
Rome2rio Pty. Ltd., Richmond, Australia		
Scryer, Inc., New York, NY, United States		
Scytl, S.A., Barcelona, Spain		
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., Salt Lake City, UT, United States		
Storm Ventures V, L.P., Menlo Park, CA, United States		
SumoLogic, Inc., Redwood City, CA, United States		
SV Angel IV, L.P., San Francisco, CA, United States		
T3C Inc., Mountain View, CA, United States		
The Currency Cloud Group Limited, London, United Kingdom		
The SaaStr Fund, L.P., Palo Alto, CA, United States		
Upfront V, L.P., Santa Monica, CA, United States		
Wandera, Inc., San Francisco, CA, United States		