Combined Group Management Report

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General Information About This Management Report

Basis of Presentation

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

Our auditor, KPMG AG Wirtschaftsprüfungsgesellschaft (KPMG), audited SAP's combined group management report, except for some information that relates to the *Non-Financial Statement Including Information on Sustainable Activities* that was not subject to the statutory audit of our combined group management report, but on which a limited assurance engagement was performed. The *Security, Data Protection, and Privacy; Employees and Social Investments; Energy and Emissions; Business Conduct;* and *Human Rights and Labor Standards* sections include such information that was not subject to the statutory audit of our combined group management report, but on which a limited assurance engagement was performed. These sections contain further explanations about the audit scope in an info box at the end of the respective section marked by the symbol 🔍.

For more information about the scope of the assurance and the underlying reporting criteria, see KPMG's *Independent Auditor's Report*, the *Limited Assurance Report of the Independent Auditor Regarding the Combined Non-Financial Statement*, and the *Assurance Report of the Independent Auditor Regarding Sustainability Information.*

All of the information in this report relates to the situation as at December 31, 2021, or the fiscal year ended on that date, unless 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.

Forward-Looking Statements

This management report contains forward-looking statements and information based on the beliefs of, and assumptions made by, SAP management using information currently available to them. Any statements contained in this report that are not historical facts are forward-looking statements as defined in the U.S. Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements on our current expectations, assumptions, and projections about future conditions and events. As a result, our forward-looking statements and information are subject to uncertainties and risks, many of which are beyond our control. If one or more of these uncertainties or risks materializes, or if management's underlying assumptions prove incorrect, our actual results could differ materially from those described in or inferred from our forward-looking statements and information. We describe these risks and uncertainties in the *Risk Management and Risks* section.

The words "aim," "anticipate," "assume," "believe," "continue," "could," "counting on," "is confident," "development," "estimate," "expect," "forecast," "future trends," "guidance," "intend," "may," "might," "outlook," "plan," "predict," "project," "seek," "should," "strategy," "want," "will," "would," and similar expressions as they relate to us are intended to identify such forward-looking statements. Such statements include, for example, those made in the *Operating Results* section, our quantitative and qualitative disclosures about market risk pursuant to the International Financial Reporting Standards (IFRS), namely IFRS 7 and related statements in our Notes to the Consolidated Financial Statements;

Expected Developments and Opportunities and *Risk Management and Risks* sections; and other forward-looking information appearing in other parts of this report.

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

This report includes statistical data about the IT industry and global economic trends that comes from information published by sources including International Data Corporation (IDC), Gartner, the European Central Bank (ECB), and the International Monetary Fund (IMF). This type of data represents only the estimates of IDC, Gartner, the ECB, the IMF, and other sources of industry data. SAP does not adopt or endorse any of the statistical information provided by sources such as IDC, Gartner, the ECB, the IMF, or other similar sources that is contained in this report. The data from these sources is subject to risks and uncertainties, and subject to change based on various factors, including those described above, in the *Risk Management and Risks* section, and elsewhere in this report. These and other factors could cause our results to differ materially from those expressed in the estimates made by third parties and SAP. We caution readers not to place undue reliance on this data.

Strategy

Overview of SAP

Founded in 1972, SAP is a global company headquartered in Walldorf, Germany. Our legal corporate name is SAP SE. SAP has been named a market share leader in the following areas worldwide: enterprise applications software,[4] enterprise resource management applications,[5] supply chain management applications,[6] procurement applications software,[7] travel and expense management software,[8] and enterprise resource planning software,[9] among others. The SAP Group has a global presence and employs more than 100,000 people.

Our ordinary shares are listed on the Frankfurt Stock Exchange. American Depositary Receipts (ADRs) representing SAP SE ordinary shares are listed on the New York Stock Exchange (NYSE). SAP is a member of Germany's DAX and TecDAX as well as the Dow Jones EURO STOXX 50, the Dow Jones Sustainability Index World, and the Dow Jones Sustainability Index Europe. As at December 31, 2021, SAP was the second 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 fifteenth consecutive year.

Our Purpose

Our purpose at SAP is to "help the world run better and improve people's lives." We strive to achieve this as both an enabler and an exemplar of sustainable business. Our products and services aim to help our customers both meet the challenges and take advantage of the opportunities presented by today's rapidly changing world.

In addition, we want our own business operations and practices to be intelligent, sustainable, and inclusive. SAP is committed to the goal set by the Paris Agreement of limiting global warming to 1.5 degrees Celsius in comparison to pre-industrial levels. In March 2021, SAP announced the intention to become carbon neutral in our own operations by the end of 2023 – two years earlier than previously stated. Further, in January 2022, SAP announced its commitment to achieve net-zero along their value chain in 2030; 20 years earlier than originally targeted. SAP also supports the United Nations Sustainable Development Goals (UN SDGs). Together with our customers and partners, we are engaged in initiatives across the UN SDGs.

[4] IDC, Worldwide Enterprise Applications Market Shares, 2020: Next-Generation Applications Shaping the Market, Doc #US47983821, Sept. 2021

[5] IDC, Worldwide Enterprise Resource Management Applications Market Shares, 2020: Digital Makes Strides, Doc #US47984121, Sept. 2021

[6] IDC, Worldwide Supply Chain Management Applications Market Shares, 2020: Disruption Managed, Doc #US46435921, Dec. 2021

[7] IDC, Worldwide Procurement Applications Software Market Shares, 2020: Digital Became New Normal, Doc #US47984421, Aug. 2021

[8] IDC, Worldwide Travel and Expense Management Software Market Shares, 2020: Travel Down But New Opportunities Emerge, Doc #US47980421, July 2021

[9] IDC, Worldwide Enterprise Resource Planning Software Market Shares, 2020: The Advance of Modular and Intelligent ERP Systems, Doc #US46441121, June 2021

Our Vision

In 2020, SAP introduced our **REINVENT** strategy. The underlying vision of this strategy was extended in 2021 to "REINVENT how the world runs as a network of intelligent,[10] sustainable enterprises." In our pursuit of this vision, we focus on three areas:

Helping Our Customers Become Intelligent and Sustainable Enterprises

Intelligent enterprises use data with embedded artificial intelligence (AI) and experience management to remove friction across business processes and drive innovation, enabling people to work more flexibly.

Creating a Network of Intelligent, Sustainable Enterprises

We believe that businesses are playing an even greater role in their communities – forming a network that expands far beyond the walls of any one company. We deliver innovation and intelligent technologies across procurement, logistics, asset management, and industry-specific offerings to enable a global business network spanning entire industries and value chains. As companies face supply chain disruptions, this becomes even more important, as our software aims to enable stakeholders in the network to react to disruption in real time.

Enabling a Sustainable World

The traditional focus of businesses on productivity and profitability is expanding to include a new measurement for business success – how operations impact the environment, or the "green line." With the overview and transparency of business processes and ability to connect value chains end to end provided by SAP software, we help companies to measure and improve sustainability across entire networks, allowing them to effectively "chase zero" – zero emissions, zero waste, and zero inequality.

Our REINVENT strategy is firmly rooted in our goal to be an innovative and trusted partner for our ecosystem, supporting them on their journey to reinvent how their businesses run. To achieve our overarching objectives of creating resilient, profitable, and sustainable business outcomes for our customers, we have honed our strategic priorities mentioned above, in which our product strategy plays a central role.

Our Product Strategy

While each of our line-of-business (LoB) solutions must be competitive in its own right, we believe the true value comes through the strength of our collective offerings, with SAP S/4HANA Cloud at the core. SAP has the technologies, products, footprint, and experience to combine four essential end-to-end business processes to create not just one intelligent enterprise, but a global ecosystem of intelligent enterprises. Those processes – Recruit to Retire, Source to Pay, Design to Operate, and Lead to Cash – are supported by our products.

The most prominent building blocks of our product portfolio are:

SAP S/4HANA Cloud provides modular cloud ERP in the areas of finance, supply chain, and sustainability among others – and can enable customers to adjust and adopt business process and business models.

SAP SuccessFactors Human Experience Management (HXM) Suite provides cloud-based solutions, such as a human resources management system (HRMS) for core HR and payroll, talent management, employee experience management, and people analytics, by aiming to create differentiated employee experiences across the employee lifecycle.

Our **intelligent spend management** applications aim to provide a more unified view of a customer's spending to reduce costs, mitigate risks, improve collaboration, and make sure every spend decision is aligned with the business strategy.

[10] An "intelligent enterprise" is an event-driven, real-time business powered by technology that includes machine learning, robotic process automation, Internet of Things, and analytics capabilities to help scale innovation.

Our **SAP Customer Experience** solutions deliver a personalized view across customers and business partners, connecting the front- and back office with solutions spanning from the point of sale, to manufacturing, to logistics, customer experience, and returns management.

SAP Business Technology Platform (SAP BTP) is a business-centric and open platform that enables customers and partners to extend and customize SAP applications in a cloud-native way. It allows shared data and insights, AI-powered experiences, as well as partner solutions and customer-led customizations. Specifically, it provides capabilities in four key areas: database and data management; analytics and planning; application development and integration; and intelligent technologies such as AI, all bundled into one platform offering.

SAP's **Industry Cloud** provides the opportunity for SAP and our partners to extend our core with modular solutions addressing industry-specific functions, built on SAP BTP.

SAP Business Network is a network of enterprises. The interactive community helps enable companies to extend their ecosystem, react to supply chain disruptions, discover new trading partners, and find new opportunities, all through a unified, role-based experience.

Our **business process intelligence (BPI)** application portfolio, which has been significantly expanded with the integration of Signavio solutions, helps our customers enable their business transformations. We support analysis of current processes, benchmarking against best practices, and reconfiguring current processes towards future processes.

Our **sustainability management** solutions empower customers to integrate sustainability into their business processes – from ethical sourcing and inclusive hiring to visibility into and management of a company's overall ecological footprint. The solutions aim to help our customers minimize carbon emissions, reduce waste through responsible supply chain management, and enable diversity across all business practices.

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

Compelling Value Propositions and Customer Centricity

Business Transformation: To achieve our strategy and deliver the best value to our stakeholders, we must execute against our goals with strong alignment across the company. To that end, we have established a Corporate Transformation Office to drive the end-to-end execution of our REINVENT strategy. This office unites experts with strong program management skills, deep content knowledge around major areas of SAP's transformation, as well as change and communications management.

Value Proposition: As we implement our strategy, we have introduced new initiatives and offerings including, for example, **RISE with SAP**. Launched in early 2021, RISE with SAP is our business transformation-as-a-service offering. We have also redesigned our ecosystem engagement model to create an attractive proposition for our partners in the cloud. A dedicated operating model demonstrates the integrated value of our solution areas across development, marketing and solution management, and go-to-market functions.

Customer Centricity: Achieving our growth ambitions requires us to put an unwavering focus on our customers. Therefore, we aim to provide the maximum **Customer Lifetime Value**, that is, the cumulative value that SAP provides to customers over the course of our relationship. To do so, SAP aims to deliver differentiated value across the customer relationship, from the first interaction to deployment and beyond.

Our People

We are working to ensure our people have the skills and resources they need to deliver on our strategy and overall ambitions. SAP's global workforce of over 100,000 employees is key to the successful execution of our strategy.

For more information, see the *Employees and Social Investments* section.

Our Business Model

Our business model, through which we implement our vision and strategy, can be summarized as follows:

We create value by identifying the business needs of our customers, then developing and delivering cloud solutions, services, and support addressing these needs. By proactively obtaining customer feedback on a quarterly basis, we strive to continuously improve our solutions, identify further business needs, and deliver enhanced value to our customers across the whole lifecycle thus increasing customer loyalty.

We derive revenue from fees charged to our customers for use of our cloud subscription solutions as well as licensing software. Support, consulting, development, training, and other services also contribute significant revenue.

For an overview of our product portfolio, see the *Products, Research and Development, and Solutions* section.

Subsidiaries, Acquisitions, and Joint Ventures

Subsidiaries

SAP SE is the parent company of the SAP Group. As at December 31, 2021, the SAP Group comprised 290 companies.

For a list of our subsidiaries, associates, and other equity investments, see the Notes to the Consolidated Financial Statements, *Note (G.9), Scope of Consolidation, Subsidiaries and Other Equity Investments*.

Qualtrics IPO

On January 28, 2021, **Qualtrics International Inc.** issued 12% of its shares on the Nasdaq Stock Market (NASDAQ). The IPO-related cash inflow amounted to €1,847 million and the initial value of non-controlling interests in net assets was €909 million.

On November 11, 2021, Qualtrics announced the closing of its public offering and issued an additional 4% of its shares, which reduced SAP's ownership in Qualtrics to 74%. The offering-related cash inflow amounted to €1.0 billion and the corresponding value of non-controlling interests in net assets was €0.3 billion.

For more information about the Qualtrics acquisition and Qualtrics IPO, see *Note (D.1), Business Combinations and Divestitures* and *Note (E.2) Total Equity.*

Acquisitions

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

The acquisition of **Signavio GmbH** ("Signavio"), closed on March 5, 2021, and deepens SAP's business process intelligence capabilities, which represent the process layer within the SAP portfolio. Solutions from Signavio augment the spectrum of business process management solutions offered by SAP by adding process modeling, process mining, and process management capabilities.

For more information about Signavio, see *Note (D.1), Business Combinations and Divestitures.*

On October 1, 2021 (after receipt of required regulatory approvals and satisfaction or waiver of other customary closing conditions), Qualtrics completed its previously announced acquisition of **Clarabridge, Inc.**, a customer experience management software company headquartered in Reston, Virginia, in the United States.

For more information about Clarabridge, see *Note (D.1), Business Combinations and Divestitures.*

On January 27, 2022, SAP announced its intent to acquire a majority stake of **Taulia**, a leading provider of working capital management solutions. The acquisition is expected to close in March 2022, following completion of customary closing conditions and regulatory approvals.

For more information about Taulia, see *Note (G.8), Events After the Reporting Period.*

Joint Ventures

To better support our customers in the financial services industry (FSI), SAP created a joint venture called **SAP Fioneer**, with German investment company Dediq GmbH. The aim of this joint venture is to build agile solutions for FSI using SAP technologies as a basis. SAP has contributed certain FSI-centric software solutions to SAP Fioneer in exchange for a minority share in the new entity. Some SAP employees transferred to the new entity. The transaction closed in September 2021.

For more information, see *Note (D.1), Business Combinations and Divestitures.*

Sapphire Ventures

In addition to our investments in organic growth and acquisitions, SAP also supports entrepreneurs that aspire to build industry-leading businesses through venture capital funds managed by **Sapphire Ventures**. Sapphire Ventures manages over US$8.8 billion (€7.8 billion) and has invested in more than 200 companies. 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 the second quarter of 2021, the Executive Board proposed, and the Supervisory Board consented to, the financing of a new Sapphire Ventures fund (“SAPPHIRE Ventures Fund VI”). SAP’s total volume committed for SAPPHIRE Ventures Fund VI is US$1.75 billion (€1.5 billion).

Measuring Our Success

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

– Growth

– Profitability

– Customer loyalty

– Employee engagement

– Carbon impact

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

Outlook and Results for 2021

Strategic Objective	KPI	2021 Outlook*	2021 Results
Growth	Cloud revenue**	€9.4 billion to €9.6 billion	€9.59 billion
	Cloud and software revenue**	€23.8 billion to €24.2 billion	€24.41 billion
Profitability	Operating profit**	€8.1 billion to €8.3 billion	€8.41 billion
Customer Loyalty	Customer Net Promoter Score	5 to 10	10
Employee Engagement	Employee Engagement Index	84% to 86%	83%
Carbon Impact	Net carbon emissions	90 kt to 110 kt	110 kt

* The 2021 outlook was communicated in January 2021 and was updated in April, July, and October 2021. The 2021 outlook numbers above reflect the updated outlook from October 2021.

** Non-IFRS, at constant currencies

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

Outlook for 2022

Strategic Objective	KPI	2021 Results	2022 Outlook
Growth	Cloud revenue	€9.42 billion	€11.55 billion to €11.85 billion[2]
	Cloud and software revenue	€24.08 billion	€25.0 billion to €25.5 billion[2]
Profitability	Operating profit	€8.23 billion[1]	€7.8 billion to €8.25 billion[1,2]
	Free cash flow	€5.05 billion	More than €4.5 billion
Customer Loyalty	Customer Net Promoter Score	10	11 to 15
Employee Engagement	Employee Engagement Index	83%	84% to 86%
Carbon Impact	Net carbon emissions	110 kt	70 kt

[1] Non-IFRS

[2] at constant currencies

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

Ambitions for 2025

Strategic Objective	KPI	2025 Ambition
Growth	Cloud revenue	More than €22 billion
	Total revenue	More than €36 billion
Profitability	Operating profit[1]	More than €11.5 billion
	Free cash flow	Approximately €8 billion
Customer Loyalty	Customer Net Promoter Score	Steady increase
Employee Engagement	Employee Engagement Index	84% to 86%
Carbon Impact	Net carbon emissions	0 kt (from 2023 onward; net zero along our value chain by 2030)

[1] Non-IFRS

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

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, employee engagement, and carbon impact. We view growth and profitability as indicators of our current performance, while we see customer loyalty, employee engagement, and carbon impact as indicators of our future performance.

Measures to Manage Our Financial Performance

Measures to Manage Our Operating Financial Performance

In 2021, we used the following key measures to manage our operating financial performance:

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

– Software as a service (SaaS)

– Platform as a service (PaaS)

– Infrastructure as a service (IaaS)

– Premium cloud support beyond regular support embedded in cloud offerings

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

We use the cloud revenue measure at both actual currencies and constant currencies.

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

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

Current cloud backlog (CCB): We use CCB both in actual and at constant currencies, to manage our operating financial performance. The CCB measures our overall go-to-market success in committed cloud business. The CCB is the contractually committed cloud revenue we expect to recognize over the upcoming 12 months as of a specific key date. Thus, it is a subcomponent of our overall remaining performance obligations following IFRS 15.120. For our committed cloud business, we believe the CCB is a valuable indicator of our go-to-market success, as it reflects both new contracts closed as well as existing contracts renewed.

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

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

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

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.

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 (basic and diluted) 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 attributable to equity holders of SAP SE allocable to each SAP share outstanding. EPS is influenced not only by our operating and non-operating business and income taxes but also by the number of shares outstanding.

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

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

Measures to Manage Our Non-Financial Performance

In 2021, we used the following key measures to manage our non-financial performance in the areas of customer loyalty, employee engagement, leadership trust, and carbon emissions:

Customer Net Promoter Score (Customer NPS): In 2021, we continued to harmonize the **Customer Loyalty Survey** program where Customer NPS is measured. Specifically, to enable better standardization and comparability, we now ask about SAP across all entities and product lines. The annual assessment of customer loyalty is based on a survey that includes the Net Promoter Score (NPS) metric. The Customer NPS score is calculated based on the NPS Likelihood to Recommend question with its proprietary scoring, identified on a scale of 0–10. 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 0–6. 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.

Since this year, we determine the **Employee Engagement Index** and the **Leadership Trust Score** as the average of the scores retrieved in each of the surveys we run within a fiscal year. Adopting the Experience Management (XM) philosophy of Qualtrics, we changed our engagement survey concept to a continuous listening approach that includes multiple data collections throughout the year. This new average score provides a more valid evaluation of the full-year engagement and trust level of our employees.

We measure both the Employee Engagement Index as well as Leadership Trust Score to get insights on the following:

– **Employee Engagement Index**: We use this index to measure the satisfaction and commitment of our employees, how proud they are of our company, and how strongly they identify with SAP. 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 surveys that gauges employees' trust in our leaders. We measure leadership trust by using the same NPS methodology that we use to compute the Customer NPS.

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

Value-Based Management

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

SAP's long-term strategic plans are the point of reference for our short-term and mid-term planning and controlling processes. We initially identify future growth and profitability drivers at a highly aggregated level for the entire SAP Group. In a first step, the resulting financial plan is broken down into (i) product portfolio grouped into solution areas and deployment models "On Premise," "Software as a Service/Platform as a Service," "Infrastructure as a Service," and "Intelligent Spend Management"; and (ii) functions such as development, delivery, sales, and administration. In a second step, the planned total revenues and total expenses are generally allocated to the operating segments and the areas of functional responsibility of the individual members of the Executive Board ("Board area"). If a Board area represents not only a functional department but also has a responsibility for operating segments within this Board area, 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 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 Executive 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 solution and/or subsolution areas. In a final step, customer-facing revenue targets and cost-of-sales and marketing targets are broken down into sales regions and market units.

Based on our detailed annual plans, we determine the budget for the respective fiscal 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 operating segments and Board areas in the SAP Group to analyze their 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 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 these non-IFRS 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 non-IFRS numbers such as operating profit (non-IFRS), operating margin (non-IFRS), as well as current cloud backlog (CCB) measures rather than the respective IFRS measures.
- The annual budgeting process for all management units is based on operating profit (non-IFRS) numbers rather than the respective IFRS financial measures.
- All forecast and performance reviews with all senior managers globally are based on these non-IFRS measures, rather than the respective IFRS financial measures.
- Both our internal performance targets and the guidance we provide to the capital markets are based on revenue and profit (non-IFRS) 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)

Starting in 2021, we no longer adjust our IFRS revenue measures by including the full amount of recurring revenue that is not recognized under IFRS due to fair value accounting for the contracts in effect at the time of the respective acquisitions.

Thus, SAP's IFRS revenue equals the non-IFRS revenue at actual currencies starting with the annual reporting period 2021. Due to immateriality, prior-year numbers are further based on our previous non-IFRS definition as described in our SAP Integrated Report 2020.

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) as well as sale/disposal gains and losses for these intangibles

  - Settlements of preexisting business relationships in connection with a business combination
  - Acquisition-related third-party expenses
- Share-based payment expenses
- Restructuring expenses, that is, expenses resulting from measures which comply with the definition of restructuring according to IFRS

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

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

Operating profit, cloud gross margin, operating margin, effective tax rate, and earnings per share denominated as operating profit (non-IFRS), cloud gross margin (non-IFRS), operating margin (non-IFRS), effective tax rate (non-IFRS), and earnings per share (non-IFRS) have been adjusted from the respective IFRS measures by adjusting for the aforementioned 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 the development of our sales. Revenue measures determined under IFRS provide information that is useful in this regard. However, both sales volume and currency effects impact period-over-period changes in sales revenue. We do not sell standardized units of products and services, so we cannot provide relevant information on sales volume by providing data on the changes in product and service units sold. To provide additional information that may be useful to investors in breaking down and evaluating changes in sales volume, we present information about our revenue and various values and components relating to operating profit that are adjusted for foreign currency effects. We calculate constant currencies measures by translating foreign currencies using the average exchange rates from the comparative period instead of the current period. Constant currency measures on current cloud backlog use the closing exchange rate from the previous year's corresponding key date instead of the average exchange rate.

Free Cash Flow

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

€ millions	**2021**	2020	Δ in %
Net cash flows from operating activities	6,223	7,194	–13
Purchase of intangible assets and property, plant, and equipment (without acquisitions)	–800	–816	–2
Payments of lease liabilities	–374	–378	–1
Free cash flow	**5,049**	**6,000**	**–16**

Usefulness of Non-IFRS Measures

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

– Our expense (non-IFRS), and profit (non-IFRS) measures, along with the current cloud backlog (CCB) measure (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 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 (Generally Accepted Accounting Principles) 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

Without being analyzed in conjunction with the corresponding IFRS measures, the non-IFRS measures are not indicative of our present and future performance, foremost, but not limited, 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.

– 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 expense adjustment for acquisition-related charges does not arise from a common conceptual basis. This is because 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 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 future, we plan to move more of our awards to equity settlement.

– In the past, we have issued share-based payment awards to our employees every year and we intend to continue doing so in the future. Thus, our share-based payment expenses are recurring, although the amounts usually change from period to period.

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

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

Reconciliations of IFRS to Non-IFRS Financial Measures for the Years 2021 and 2020

€ millions, unless otherwise stated					2021			2020
	IFRS	Adj.	Non-IFRS	Currency Impact	Non-IFRS Constant Currency	IFRS	Adj.	Non-IFRS
Revenue measures								
Cloud	9,418	0	9,418	174	9,592	8,080	5	8,085
Software licenses	3,248	0	3,248	–8	3,240	3,642	0	3,642
Software support	11,412	0	11,412	166	11,577	11,506	0	11,506
Software licenses and support	14,660	0	14,660	158	14,818	15,148	0	15,148
Cloud and software	**24,078**	**0**	**24,078**	**332**	**24,410**	**23,228**	**5**	**23,233**
Services	**3,764**	**0**	**3,764**	**58**	**3,823**	**4,110**	**0**	**4,110**
Total revenue	**27,842**	**0**	**27,842**	**390**	**28,232**	**27,338**	**5**	**27,343**
Operating expense measures								
Cost of cloud	–3,105	229	–2,876			–2,699	248	–2,451
Cost of software licenses and support	–1,925	103	–1,822			–2,008	97	–1,911
Cost of cloud and software	–5,030	332	–4,698			–4,707	345	–4,362
Cost of services	–2,916	286	–2,630			–3,178	178	–3,000
Total cost of revenue	**–7,946**	**617**	**–7,328**			**–7,886**	**523**	**–7,362**
Gross profit	**19,897**	**617**	**20,514**			**19,453**	**528**	**19,981**
Research and development	–5,190	524	–4,667			–4,454	303	–4,151
Sales and marketing	–7,505	1,025	–6,479			–7,106	735	–6,371
General and administration	–2,431	1,250	–1,181			–1,356	166	–1,190
Restructuring	–157	157	0			3	–3	0
Other operating income/expense, net	43	0	43			84	–66	18
Total operating expenses	**–23,186**	**3,573**	**–19,613**	**–212**	**–19,824**	**–20,715**	**1,659**	**–19,056**
Profit numbers								
Operating profit	**4,656**	**3,573**	**8,230**	**178**	**8,408**	**6,623**	**1,664**	**8,287**
Other non-operating income/expense, net	**17**	**0**	**17**			**–179**	**0**	**–179**
Finance income	3,123	0	3,123			1,473	0	1,473
Finance costs	–949	0	–949			–697	0	–697
Financial income, net	**2,174**	**0**	**2,174**			**776**	**0**	**776**
Profit before tax	**6,847**	**3,573**	**10,421**			**7,220**	**1,664**	**8,884**
Income tax expense	–1,471	–613	–2,084			–1,938	–413	–2,350
Profit after tax	**5,376**	**2,960**	**8,337**			**5,283**	**1,251**	**6,534**
Attributable to owners of parent	5,256	2,687	7,943			5,145	1,251	6,396
Attributable to non-controlling interests	121	273	394			138	0	138
Key ratios								
Operating margin (in %)	**16.7**		**29.6**		**29.8**	**24.2**		**30.3**
Effective tax rate (in %)	**21.5**		**20.0**			**26.8**		**26.5**
Earnings per share, basic (in €)	**4.46**		**6.73**			**4.35**		**5.41**

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

Non-IFRS Adjustments by Functional Areas

€ millions	2021					2020				
	IFRS	**Acquisition-Related**	**SBP[1]**	**Restructuring**	**Non-IFRS**	IFRS	Acquisition-Related	SBP[1]	Restructuring	Non-IFRS
Cost of cloud	–3,105	169	59	0	–2,876	–2,699	208	40	0	–2,451
Cost of software licenses and support	–1,925	33	70	0	–1,822	–2,008	42	55	0	–1,911
Cost of services	–2,916	20	266	0	–2,630	–3,178	3	175	0	–3,000
Research and development	–5,190	10	513	0	–4,667	–4,454	7	296	0	–4,151
Sales and marketing	–7,505	370	655	0	–6,479	–7,106	375	360	0	–6,371
General and administration	–2,431	20	1,230	0	–1,181	–1,356	9	157	0	–1,190
Restructuring	–157	0	0	157	0	3	0	0	–3	0
Other operating income/expense, net	43	0	0	0	43	84	–66	0	0	18
Total operating expenses	**–23,186**	**623**	**2,794**	**157**	**–19,613**	**–20,715**	**577**	**1,084**	**–3**	**–19,056**

[1] Share-based payments

Products, Research & Development, and Services

In 2021, we expanded on 2020's REINVENT strategy to "REINVENT how the world runs as a network of intelligent, sustainable enterprises." Our strategy was built on the following focus areas:

– Helping customers become intelligent and sustainable enterprises

– Creating a network of intelligent, sustainable enterprises

– Enabling a sustainable world

The goal of our product and services portfolio is to deliver on this expanded vision.

For an overview of our strategy, see the *Strategy* section.

SAP S/4HANA Cloud

SAP S/4HANA is our ERP suite with intelligent technologies such as artificial intelligence (AI), machine learning, and advanced analytics. Running on **SAP HANA**, the suite combines automation and integrated business processes analytics and a role-based user experience. The suite provides software capabilities for finance, sales, service, procurement, manufacturing, and asset management, as well as research and development (R&D).

SAP offers a choice of SAP S/4HANA deployments – in the public cloud via software as a service (SaaS), in a private cloud or on premise as well as a combination in a hybrid deployment.

Launched in January 2021, **RISE with SAP** is our business-transformation-as-a-service offering that aims to support and accelerate customers in their transformation to an intelligent enterprise. It is a package of products and tools and includes SAP S/4HANA Cloud – either public or private deployment options; **business process intelligence (BPI)** solutions; migration tools and services including the **SAP Readiness Check tool** and the **Custom Code Migration app**; infrastructure provided by any hyperscaler or SAP data center; **SAP Business Technology Platform (SAP BTP)**; and an **SAP Business Network Starter Pack**.

At SAPPHIRE NOW in 2021, we announced the availability of **RISE with SAP transformation packages for specific industries** that provide business transformation-as-a-service with five industry-tailored cloud solutions for retail, consumer products, automotive, utilities, and industrial machinery and components. **RISE with SAP for Modular Cloud ERP**, which includes ERP capabilities in different domains and lines of business (LoBs), namely procurement, human experience management (HXM), analytics, and governance, was also announced at our annual event.

Around 2,800 SAP S/4HANA customers were added in 2021, bringing the number of customers to approximately 18,800, up 18% year over year.

Human Experience Management

SAP solutions for human experience management (HXM) under the SAP SuccessFactors brand aim to increase the value of a workforce by developing, managing, engaging, and empowering people.

SAP SuccessFactors HXM Suite was designed to provide decision-makers with tools to identify and reduce unconscious bias from key people decisions such as hiring, calibration, and compensation. With embedded analytics throughout the suite, SAP SuccessFactors HXM solutions aim to enable organizations to visualize and forecast diversity trends, as well as track and measure progress against diversity, equity, and inclusion goals through custom reports, dashboards, and scorecards.

In 2021, we maintained a leadership position in the Gartner Magic Quadrant for Cloud HCM Suites for 1,000+ Employee Enterprises that we have been awarded for six consecutive years; the 2021 IDC MarketScape Reports for Talent Management for nine consecutive years; and the inaugural The Forrester Wave: Learning Management Systems and Experience Platforms report.

Intelligent Spend Management

SAP provides a comprehensive set of solutions for customers to better navigate spend management decisions aligned with corporate strategies. It brings together SAP's intelligent spend management solutions including products branded under **SAP Ariba**, **SAP Concur**, and **SAP Fieldglass** as well as **SAP Business Network**. Our intelligent spend management solutions aim to address our customers' end-to-end procurement, travel and expense, and external workforce needs with visibility across the entire supply chain.

At SAPPHIRE NOW, we introduced **Verify**, a new SAP Concur service that uses AI and machine learning to evaluate companies' expense reports and identify anomalies.

Customer Experience

Our **SAP Customer Experience** solutions bring together customer data, machine learning technology, and microservices to support customer engagements across end-to-end processes in the areas of marketing, commerce, sales, and service. The focus for 2021 was maintaining leadership positions in various "magic quadrants" such as Gartner's Magic Quadrant for Sales Force Automation with SAP Sales Cloud; Forrester Wave for Customer Identity and Access Management (CIAM) with SAP Customer Data Cloud (formerly Gigya); and Gartner Magic Quadrant for Personalization Engines for SAP Emarsys Customer Data platform.

SAP Business Technology Platform

SAP Business Technology Platform (SAP BTP) spans a comprehensive set of on-premise and cloud-native technologies and services that support SAP applications across four areas: database and data management; analytics; application development and integration; and AI and robotic process automation.

This platform aims to help our customers, partners, and internal development teams to store and manage data, derive insights, build, extend, and integrate applications, as well as optimize and automate business processes in and beyond SAP landscapes. Across technologies, SAP provides customers actionable use cases with prebuilt support and executable code that is ready to deploy.

As part of our multi-cloud strategy, we increased our global footprint of SAP BTP by adding to our regional presence in APJ and Europe. New points of presence include Microsoft Azure in Sydney as well as Amazon Web Services (EU Access) and Google Cloud Platform (GCP) in Frankfurt.

SAP Business Network

SAP officially launched **SAP Business Network** in June 2021, bringing together **Ariba Network**, **SAP Logistics Network**, and **SAP Asset Intelligence Network** with the aim to unify the points of interaction and integration across trading partners – from supplier collaboration to logistics coordination and traceability, to equipment usage and maintenance. The trading partner directory in SAP Business Network aims to provide trading partners with a view of their customer relationships and transactions on the network.

As part of our strategy to make SAP Business Network more open, SAP announced a partnership with Amazon Business in Q3/2021. This partnership aims to enable users to tap into millions of items listed on Amazon Business directly from within SAP Ariba solutions, as well as assist with compliance with corporate purchasing policies. With this partnership and technology integration, Amazon Business becomes a source of supply for **Spot Buy**, a capability within SAP Ariba solutions for users to purchase items from trusted suppliers.

Business Process Intelligence

Business process intelligence (BPI) solutions aim to help our customers analyze their operations, understand their process bottlenecks, and improve their business process landscape.

Our goal is to offer one integrated BPI portfolio, the **SAP Signavio Business Process Management (BPM) Suite**. The suite consists of branded **SAP Signavio** solutions and the **SAP Process Insights** solution with integration into application lifecycle management solutions **SAP Solution Manager** and **SAP Cloud ALM.** The suite aims to deliver business transformation capabilities for our customers and partners with quick time to insights and time to deploy. This portfolio is powered by SAP BTP capabilities such as workflow management, citizen automation, low-code/no-code, and intelligent robotic process automation. Acquisitions such as Signavio and the no-code platform **SAP AppGyver** contributed to this comprehensive business process transformation solution.

Released in September 2021, **SAP Process Insights** aims to help companies foster continuous improvements with performance views and process drilldowns, as well as recommendations and improvement actions.

With the SAP-wide initiative **One Process Acceleration Layer** (OPAL), we aim to create a primary resource for process repository, process simulation, process mining and analytics, process collaboration, and enterprise-wide dissemination.

Sustainable Business Solutions, Services, and Partnerships

As a key strategic pillar, sustainability is a topic that is covered across the various SAP product areas along emerging and maturing environmental, social, and governance (ESG) standards from organizations such as the World Economic Forum (WEF), the International Sustainability Standards Board (ISSB), the European Union (EU), and others. The goal of our sustainability management solutions is to enable customers to include sustainability as a new dimension into their business processes and operations. SAP offers solutions focusing on ESG reporting, climate change, circular economy, and social responsibility.

For more information, see *Sustainable Solutions and Products in Use* in the *Energy and Emissions* section.

Experience Management

Experience Management (XM) refers to both Qualtrics technology as well as the discipline of seeking out and closing the experience gaps across the four core areas of businesses – customer, product, employee, and brand. In 2021, Qualtrics acquired **Clarabridge**, adding omnichannel conversational analytics to **Qualtrics XM Platform**. The combination of SAP and Qualtrics' respective offerings, as well as integration into our suite solutions aim to help organizations and governments bring real-time customer and employee sentiment to their travel and expense programs, vaccination efforts, and business and office reopening.

Industry Cloud

SAP's **industry cloud** is an open innovation space for SAP and our partners to build solutions that make a difference to the core business of our customers. Industry cloud solutions extend the end-to-end processes of SAP S/4HANA, LoB cloud solutions, and SAP Business Network to enable our customers optimize and transform their core business.

Industry cloud solutions are built by SAP and partners in the cloud, giving our customers access to the innovation power of an entire ecosystem. The solutions are built on SAP BTP and can use its full spectrum of intelligent technologies and business services. We have an expanding portfolio and a growing ecosystem across all industries.

Ecosystem

SAP's ecosystem consists of more than 22,500 partners worldwide in over 140 countries that build, sell, service, and run SAP solutions and technology. The introduction of **SAP PartnerEdge Cloud Choice, flex model** in 2021 offers greater flexibility for customers, partners, and SAP to support cloud adoption. Through emphasis on landing customers as well as fostering engagement, SAP and our partners have new opportunities in the midmarket and large enterprise segments. Our 2025 ambition is to develop a radically partner-centric approach in line with the wider SAP strategy.

Simplifying Partner and Customer Engagement Through RISE with SAP

From a services perspective, the RISE with SAP offering simplifies the engagement between SAP, ecosystem partners, and our customers. Aiming to support small and midsize business (SMB) partners, **partner services for RISE with SAP** are available for the enablement of their teams and offered in partner-led customer engagements. In line with this, **SAP Learning Hub** aims to support enabling and certificating SMB partners.

Services and Support

Complementing our software and technology offerings, SAP provides services and support to help customers continually realize business value from their SAP investment. Throughout the customer lifetime partnership, we aim to help customers as they implement and adopt new solutions in the cloud, move legacy solutions to the cloud, or transform their business.

Speeding Up the Adoption of SAP Solutions

The standardization and automation of our remote service delivery on the **Intelligent Service Delivery Hub** aims to assist customers with their adoption and improve delivery efficiency and quality. This is a new cloud-based service delivery and collaboration platform for customers, partners, and SAP to use throughout the customer engagement lifecycle. Embedded automation capabilities aim to enable automated quality checks, performance issue detection, and customer notification to mitigate potential issues that may arise.

Scaling RISE with SAP

To scale the RISE with SAP offering, the SAP Services and Support organization focused on the development of a comprehensive, full-lifecycle adoption methodology. The methodology goal is to drive successful customer adoption and provide clearly outlined deliverables throughout the engagement of each RISE journey in 30/60/90/120-day sprints. The activities during these sprints are closely aligned with the **SAP Integrated Delivery Framework**, which allows for seamless partner collaboration.

Supporting Business Transformation

To support our customers in getting started quickly and realizing their desired business transformation, a series of low-touch, fixed scope services were introduced to help customers detail, model, and design the business transformation based on our BPI portfolio.

Enabling Use of SAP BTP

To scale the delivery of the value of SAP BTP to our customers, all relevant service offerings and methods were adjusted to ensure the ability to use the platform in all service-related projects. To ensure easy integration across different solutions, a program was initiated to make integration-related content available to all customers and the developer community on **SAP API Business Hub**, the central catalog for integrations and extensions.

Starting Fast with Industry Cloud Solutions

Industry cloud-based services are now available. These services include industry-specific advisory services that aim to help discover and prioritize innovation opportunities and reimagine business processes with pre-defined templates and accelerators. These industry cloud-based services also include quick-start services to speed functional implementation and technical readiness.

Expanding Our Support Offerings

SAP continued to expand and scale the capabilities of our customers' support experience, including the following ways:

- A new version of **Built-In Support**, a product-embedded digital support assistant, was released.
- **SAP Cloud ALM** has provided implementation and operation capabilities for cloud solutions which now includes solution monitoring, partner delivery content, and APIs, for a number of SAP solutions.
- An engagement model was established where customers, through their Customer Success team at SAP, now have access to domain experts through newly formed **Success Centers**.
- **SAP Preferred Success** now covers SAP S/4HANA Cloud, private edition and is available through the RISE with SAP offering.
- **SAP Learning System Access** (previously called SAP Live Access) is now available as an integrated platform within SAP Learning Hub, edition for Preferred Success, providing access to live, preconfigured instances of SAP software to carry out class exercises, cross-train, and gain hands-on experience.

Simplifying Business Journeys

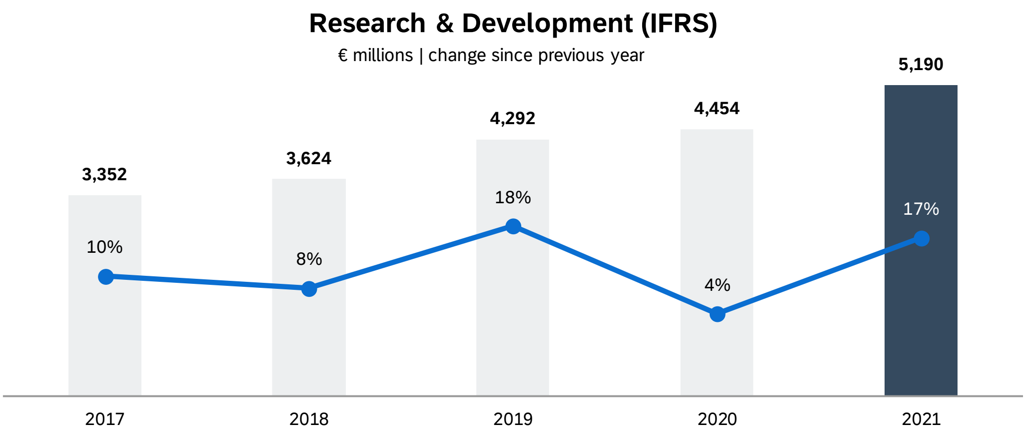
To accelerate the implementation of specific business scenarios, **premium engagement** services have been bundled into out-of-the box service plans, providing a prescribed implementation approach and road map broken down into phases with individual steps and timelines. Over 25 business scenarios are available.

Enhancing the SAP MaxAttention Program

The **SAP MaxAttention program** was expanded to enhance collaboration with customers. This includes continuing the launch of the **Intelligent Enterprise institute** to help customers explore the full potential of SAP products and solutions through thought leadership, think tanks, and unique events. Chapters have now been established in Berlin, London, and New York.

Investment in R&D

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



In 2021, our IFRS R&D ratio, reflecting R&D expenses as a portion of total operating expenses, increased by 0.9 percentage points (pp) to 22.4% (2020: 21.5%). Our non-IFRS R&D ratio increased by 2.0pp to 23.8% year over year (2020: 21.8%). At the end of 2021, our total full-time equivalent (FTE) headcount in development work was 32,244 (2020: 29,580). Measured in FTEs, our R&D headcount was 30% of total headcount (2020: 29%).

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

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

Patents

SAP actively seeks intellectual property protection for innovations and proprietary information. Our software innovations continue to strengthen our market position as a leader in business solutions and services. Our investment in R&D has resulted in numerous patents. As at December 31, 2021, SAP held a total of more than 11,605 (2020: 10,931) validated patents worldwide. Of these, 793 (2020: 897) were granted and validated in 2021.

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.

Financial Performance: Review and Analysis

Economy and the Market

According to the European Central Bank (ECB),[A] the global economy was on the road to recovery in 2021, with some advanced economies even returning to their pre-pandemic trajectories by year end. Overall, however, the recovery turned out to be less smooth than expected. Toward the end of the year, the ECB even revised its previous projections downward when the emergence of the Omicron variant of the coronavirus threatened to intensify the pandemic on a global scale.

Throughout 2021, rising commodity prices led to a buildup of inflationary pressures across the globe, reports the ECB. While the services sector benefitted from large economies reopening, supply bottlenecks interfered with the manufacturing sector in particular. In addition to pandemic uncertainties, these factors weighed on global economic activity, with the recovery lagging behind especially in emerging market economies.

In the EMEA region, after a technical recession at the start of the year, the euro area economy recovered moderately in 2021 thanks to robust domestic demand, and nearly reached its pre-pandemic level of output in the third quarter. However, economic activity in the euro area waned again over the final quarter of the year as some countries reintroduced tighter containment measures to cope with new pandemic waves. In central and eastern Europe, economic activity stabilized until the third quarter but slackened in the fourth, reflecting a significant deterioration of the epidemiological situation, persistent supply bottlenecks, and high energy prices. In Russia, rising global demand for oil and gas supported economic activity throughout 2021, while sharply increasing numbers of pandemic infections led to tighter containment measures toward the end of the year.

As for the Americas region, economic activity recovered in the United States, with subdued growth in the third quarter caused by a resurgence of pandemic infections. Over the year, consumer demand in the United States rotated toward services, which were not subject to supply bottlenecks. In Brazil, a tighter policy stance and limited fiscal space constrained economic activity in 2021, reports the ECB.

Concerning the APJ region, the ECB finds that the Japanese economy slowed until the third quarter in the face of supply bottlenecks and the pandemic resurgence. However, it rebounded in the fourth quarter when containment measures were eased, vaccinations progressed, and policy support continued. In China, on the other hand, economic activity decelerated in the second half of the year because of energy shortages, turmoil in the residential property sector, and renewed pandemic outbreaks.

The IT Market

"2021 represented times of uncertainty due to the global health crisis and the upending of traditional business practices, but it also fueled further growth in digital technology pivots and digital transformation." This is how International Data Corporation (IDC), a U.S.-based market research firm, summarizes the reporting year.[B] "One notable impact of the COVID-19 pandemic is that many enterprises now recognize that their ability to build innovative digital products and services will determine whether they succeed or fail in the market. The imperative to develop innovative digital offerings is influencing an array of strategic decision making in the enterprise, including significant changes to business models, organizational models, distribution models, and revenue streams, says IDC.[C]

According to IDC, "adaptations and lessons learned from the COVID-19 pandemic are becoming permanent, requiring revised global business and operating models. Digital resilience approaches counter supply chain disruptions. Organizations are preparing for the return to office, the return to travel, new consumer spending patterns, the challenges of finding (higher-cost) talent, and the possible return of inflation in an environment of continued economic uncertainty. Innovation and digital resiliency become key to navigating ongoing disruption. During the pandemic, changes in behavior, consumption, and supply forced companies to adopt digital-led business and operating models that endure lockdowns, movement restrictions, social distancing, and more. Work from anywhere, connectivity, scalability, security, throughput, resiliency, and redefining internal processes for remote access will define the next normal."[C]

IDC observed in addition that "companies that traditionally weren't technology centric are now digitally transforming and adopting technology to run and support their businesses. As part of that transformation, many are rethinking their business models so they can offer differentiated and recurring services, which are harder to commoditize. Where companies once sold physical items, they are now reimaging their businesses to provide outcome-based recurring services."[C]

Monitoring decarbonization initiatives turned out to be a key component of digital transformation in the reporting year. "Beyond just cost take out, organizations will increasingly be disrupting themselves by using lower carbon power sources and creating more sustainable operations to adhere to the numerous sustainability standards that fall under the environmental, social, and governance (ESG) umbrella. More than 40% of organizations surveyed by IDC worldwide have declared an intent to reduce CO_2 in their products/services, while about 30% have implemented a CO_2 monitoring solution and another 20% are currently developing a CO_2 monitoring solution," observed IDC.[B]

Sources:

[A] European Central Bank, Economic Bulletin, Issue 8/2021, Publication Date: January 13, 2022 (https://www.ecb.europa.eu/pub/pdf/ecbu/eb202108.en.pdf)

[B] IDC FutureScape: Worldwide Digital Transformation 2022 Predictions, Doc #US47115521, October 2021

[C] IDC FutureScape: Worldwide Future of Digital Innovation 2022 Predictions, Doc #US47148621, October 2021

Impact on SAP

Businesses around the world increasingly used digital technologies and the cloud to transform the way they do business. Companies expressed the need for flexibility and adaptability as a response to supply chain disruptions and new regulatory restrictions. The strength and the execution of our strategy showed up on multiple fronts, for instance with strong growth in current cloud backlog and cloud revenues in particular that exceeded our expectations. High customer adoption was underpinned by strong demand for our cloud offerings. Furthermore, Customer NPS continued to increase, echoing our efforts toward stronger customer focus.

Overall Financial Position

Executive Board's Assessment

Looking at most of our financial and non-financial KPIs, the course of business was favorable for SAP in 2021:

Full-year cloud revenue was up 17% to €9.42 billion and up 19% to €9.59 billion at constant currencies, hitting the high end of the revised full year outlook (€9.4 billion to €9.6 billion at constant currencies). Cloud and software revenue was up 4% year over year to €24.08 billion and up 5% to €24.41 billion at constant currencies, exceeding the high end of the revised full-year outlook (€23.8 billion to €24.2 billion at constant currencies). IFRS operating profit decreased 30% year over year to €4.66 billion. Non-IFRS operating profit was down 1% to €8.23 billion and up 1% to €8.41 billion at constant currencies, exceeding the high end of the revised full-year outlook (€8.1 billion to €8.3 billion non-IFRS at constant currencies).

SAP's non-financial performance developed as follows: the Customer Net Promoter Score was 10, hitting the upper end of our 2021 guidance (5 to 10). Employee Engagement decreased slightly to 83% (–3pp compared to 2020 and remaining below our outlook for 2021 (84% to 86%)). Our net carbon emissions continued to decrease by 18.5% to 110 kt (outlook for 2021: 90 kt to 110 kt). SAP's commitment to sustainability is also reflected in our target to reach CO_2-neutrality in our own operations by 2023 and our announcement to achieve net-zero along our value chain in 2030.

We are confident that we will continue our growth path in 2022 and will deliver on both our financial and non-financial outlook for 2022 and on our 2025 mid-term ambition.

Performance Against Our Outlook for 2021 (Non-IFRS)

As in previous years, our 2021 operating profit-related goals and published outlook were based on our non-IFRS financial measures at constant currencies. For this reason, in the following section we discuss performance against our outlook only in terms of non-IFRS numbers (at constant currencies) derived from IFRS measures. The subsequent section about IFRS operating results discusses numbers only in terms of the International Financial Reporting Standards (IFRS), so the numbers in that section are not expressly identified as IFRS numbers.

Outlook for 2021 (Non-IFRS)

The initial outlook for 2021, updated on April 13, 2021 (for more information, see the table "Comparison of Outlook and Results for 2021"), reflected the strong new cloud business performance, which was expected to reaccelerate cloud revenue growth, while software licenses revenue was expected to decline for the full year as more customers turned to the RISE with SAP subscription offering. This outlook also continued to assume that the COVID-19 pandemic would begin to recede as vaccine programs rolled out globally, leading to a gradually improving global demand environment in the second half of 2021. In this context, we predicted cloud revenue to range between €9.2 billion and €9.5 billion, and cloud and software revenue to range between €23.4 billion and €23.8 billion, with more predictable revenue anticipated to make up 75% of this result. Furthermore, we expected operating profit (non-IFRS) to range between €7.8 billion and €8.2 billion. We expected a full-year 2021 effective tax rate (IFRS) of 27.5% to 28.5% (2020: 26.8%) and an effective tax rate (non-IFRS) of 24.5% to 25.5% (2020: 26.5%). In April 2021, we adjusted our outlook for the effective tax rate (IFRS) to between 26.0% and 27.0% and for the effective tax rate (non-IFRS) to between 22.5% and 23.5%. The decrease in comparison to the previous outlook mainly resulted from changes in taxes for prior years and tax-exempt income. Under IFRS, these positive tax effects were partly compensated by changes in non-deductible expenses.

In July 2021, we adjusted our outlook for cloud revenue at constant currencies to range between €9.3 billion and €9.5 billion and for cloud and software revenue to range between €23.6 billion and €24.0 billion, resulting in a new projected non-IFRS operating profit of between €7.95 billion and €8.25 billion. We adjusted our outlook for the effective tax rate (IFRS) to between 21.5% and 23.0% and for the effective tax rate (non-IFRS) to between 20.0% and 21.5%. The decrease in comparison to the previous outlook mainly resulted from changes in tax-exempt income.

In our quarterly statement published on October 21, 2021, we raised our outlook again to further reflect the strong business performance. This outlook likewise continued to assume that the COVID-19 pandemic would continue to recede as vaccine programs rolled out globally.

We adjusted our projection for cloud revenue upward to range between €9.4 billion and €9.6 billion, which represented a growth rate of 16% to 19% at constant currencies. In addition, the Company then anticipated cloud and software revenue of between €23.8 billion and €24.2 billion. This range represented a growth rate of 2% to 4% at constant currencies. Furthermore, we projected the share of more predictable revenue to reach approximately 75%. We also set a target range of €8.1 billion to €8.3 billion for our operating profit, which represented a decrease of 2% to flat at constant currencies. We expected a full-year 2021 effective tax rate (IFRS) of 21.0% to 22.0% and an effective tax rate (non-IFRS) of 20.0% to 21.0%. The decrease in comparison to the previous outlook mainly resulted from changes in tax-exempt income.

2021 Actual Revenue and Profit Performance Compared to Outlook (Non-IFRS)

On the cloud revenue side, we reached the upper end of the guidance, while our cloud and software revenue and our operating profit both exceeded the outlook adjusted in October 2021.

Comparison of Outlook and Results for 2021

	Results for 2020	Outlook for 2021 (Integrated Report 2020)	Revised Outlook for 2021 (Q1 Quarterly Statement)	Revised Outlook for 2021 (Half-Year Report)	Revised Outlook for 2021 (Q3 Quarterly Statement)	**Results for 2021**
Cloud revenue (non-IFRS, at constant currencies)	€8.09 billion	€9.1 billion to €9.5 billion	€9.2 billion to €9.5 billion	€9.3 billion to €9.5 billion	€9.4 billion to €9.6 billion	€9.59 billion
Cloud and software revenue (non-IFRS, at constant currencies)	€23.23 billion	€23.3 billion to €23.8 billion	€23.4 billion to €23.8 billion	€23.6 billion to €24.0 billion	€23.8 billion to €24.2 billion	€24.41 billion
Operating profit (non-IFRS, at constant currencies)	€8.29 billion	€7.8 billion to €8.2 billion	€7.8 billion to €8.2 billion	€7.95 billion to €8.25 billion	€8.1 billion to €8.3 billion	€8.41 billion
Share of predictable revenue	72%	75%	75%	75%	75%	75%
Effective tax rate (IFRS)	26.8%	27.5% to 28.5%	26.0% to 27.0%	21.5% to 23.0%	21.0% to 22.0%	21.5%
Effective tax rate (non-IFRS)	26.5%	24.5% to 25.5%	22.5% to 23.5%	20.0% to 21.5%	20.0% to 21.0%	20.0%

In a global economic situation that keeps being shaken by the COVID-19 pandemic, the demand for our solutions and services was higher than assumed in 2021, reflecting the strong business performance which is expected to continue to accelerate cloud revenue growth.

Our current cloud backlog (contractually committed cloud revenue that we expect to recognize over the upcoming 12 months) reached €9.01 billion at constant currencies (€9.45 billion at actual currencies; 2020: €7.15 billion). This was an increase of 26% (2020: 14%) on a constant currency basis.

At constant currencies, the resulting non-IFRS cloud revenue grew from €8.09 billion in 2020 to €9.59 billion in 2021, hitting the high end of our guidance range of €9.4 billion to €9.6 billion. That represented an increase of 19% at constant currencies.

Cloud and software revenue (non-IFRS) grew 5% at constant currencies to €24.41 billion (2020: €23.23 billion), and thus ended above our range forecasted for 2021 of €23.8 billion to €24.2 billion.

Thanks to the strong increase in cloud business described above, we were able to increase the share of more predictable revenue 3.3pp to 75% (2020: 72%). As such, our total revenue (non-IFRS) increased slightly despite a decline in the software license business, which is in line with our cloud transformation.

Total revenue (non-IFRS) on a constant currency basis grew 3% in 2021 to €28.23 billion (2020: €27.34 billion).

Operating expenses (non-IFRS) in 2021 on a constant currency basis increased 4% to €19.82 billion (2020: €19.06 billion).

Our expense base in 2021 was impacted by our transformation to a fast-growing cloud business. The cloud gross margin (non-IFRS) for 2021 was 69%, declining slightly in comparison with the previous year, despite the increase in cloud revenue. This decline was predominantly due to investments into our cloud delivery program.

The cloud gross margin (non-IFRS) on our intelligent spend management offerings improved 0.6pp on a constant currency basis, resulting in 80% for 2021 (2020: 79%).

The cloud gross margin (non-IFRS) on our infrastructure as a service (IaaS) cloud offerings saw a decline of 0.8pp for 2021 on a constant currency basis to achieve a cloud gross margin (non-IFRS) of 34% for the full year.

Profitability in our software as a service/platform as a service (SaaS/PaaS) excluding intelligent spend cloud offerings was 70% at constant currencies (non-IFRS) for 2021. Due to ongoing investments in the further development and harmonization in the operation of our various SaaS/PaaS offerings on a single platform, the gross margin declined 0.5pp.

Non-IFRS operating profit in 2021 was €8.41 billion on a constant currency basis (2020: €8.29 billion), reflecting an increase of 1%. As a result, we were able to surpass our excellent results from 2019 and 2020, despite our continued investment in our business transformation during the reporting year. The development of our operating profit was largely influenced by investment decisions in our innovation areas and growth markets. This, among other things, resulted in an increase of our overall headcount by 4,984 full-time equivalents or FTEs (4,071 thereof organically), primarily in research and development as well as in sales and marketing. Thus, non-IFRS operating profit on a constant currency basis amounting to €8.41 billion exceeded the top end of the target range (€8.1 billion to €8.3 billion).

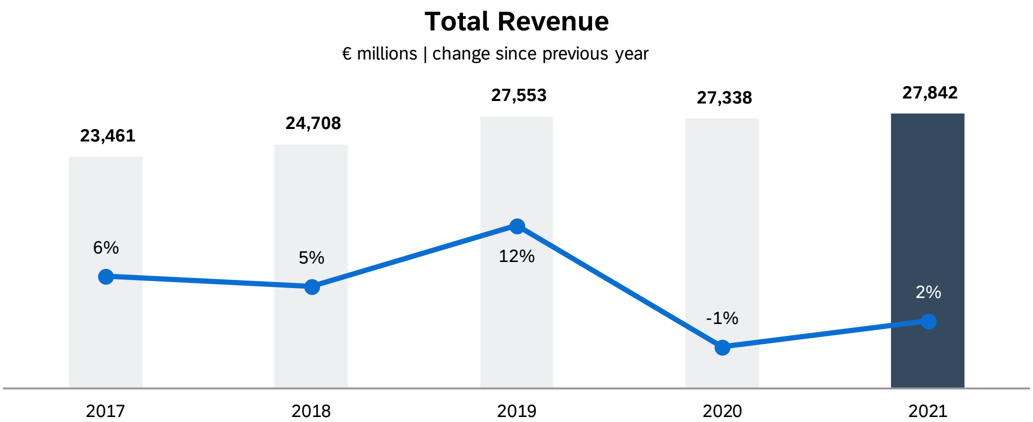
We achieved an effective tax rate (IFRS) of 21.5% and an effective tax rate (non-IFRS) of 20.0%, which is in the middle of the adjusted outlook of 21.0% to 22.0% (IFRS) and at the lower end of the range of 20.0% to 21.0% (non-IFRS) we announced in October 2021.

Operating Results (IFRS)

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

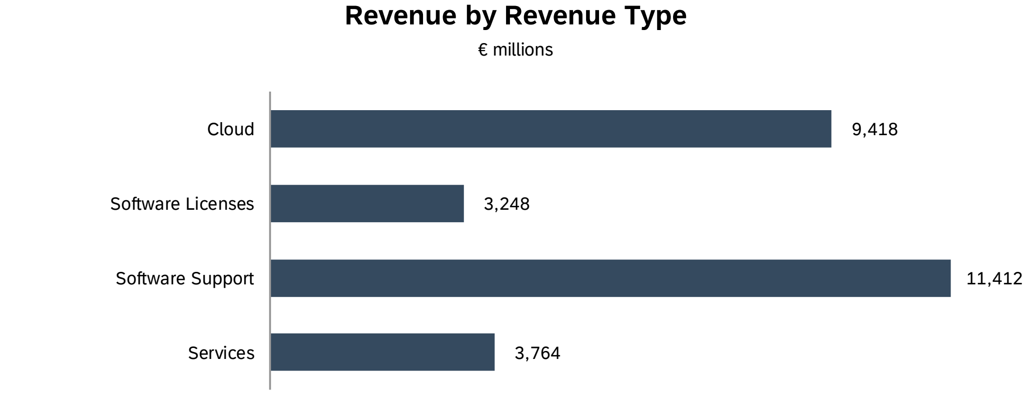
We break our operations down into three regions: the Europe, Middle East, and Africa (EMEA) region, the Americas region, and the Asia Pacific Japan (APJ) region. We allocate revenue amounts to each region based on where the customer is located. For more information about revenue by geographic region, see the Notes to the Consolidated Financial Statements, *Note (A.1)*.

Revenue



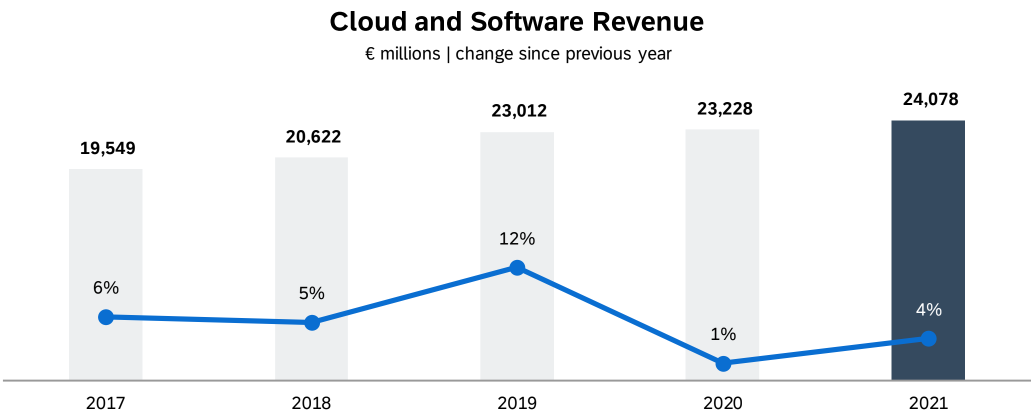
Total revenue increased from €27,338 million in 2020 to €27,842 million in 2021, representing an increase of €504 million, or 2%.

Cloud and software revenue represented 86% of total revenue in 2021 (2020: 85%). Service revenue decreased 8% from €4,110 million in 2020 to €3,764 million in 2021, which was 14% of total revenue (2020: 15%).

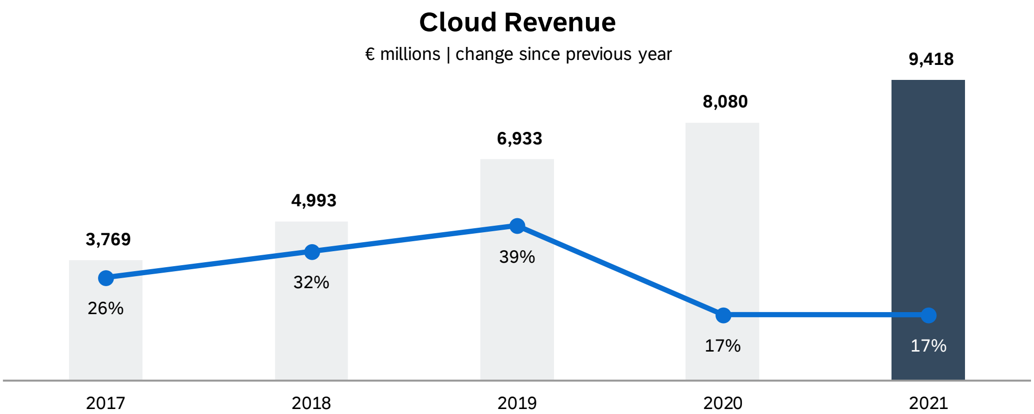


For more information about our regional performance, see the *Revenue by Region* section.

Cloud revenue refers to the income earned from contracts that permit the customer to access specific software solutions hosted by SAP or third parties engaged by SAP during the term of its contract with SAP. Software licenses revenue results from the fees earned from selling or licensing software to customers. Support revenue represents fees earned from providing customers with technical support services and unspecified software upgrades, updates, and enhancements. For more information about our revenue types, see the Notes to the Consolidated Financial Statements, *Note (A.1).*



Cloud and software revenue grew from €23,228 million in 2020 to €24,078 million in 2021, an increase of 4%.



Cloud revenue increased €1,337 million, or 17%, from €8,080 million in 2020 to €9,418 million in 2021. With continued lower transactional revenue, SAP Concur and SAP Fieldglass supplier business grew moderately, having an unfavorable impact on the cloud revenue growth. The current cloud backlog increased 32% to €9,447 million in 2021 (2020: €7,155 million).

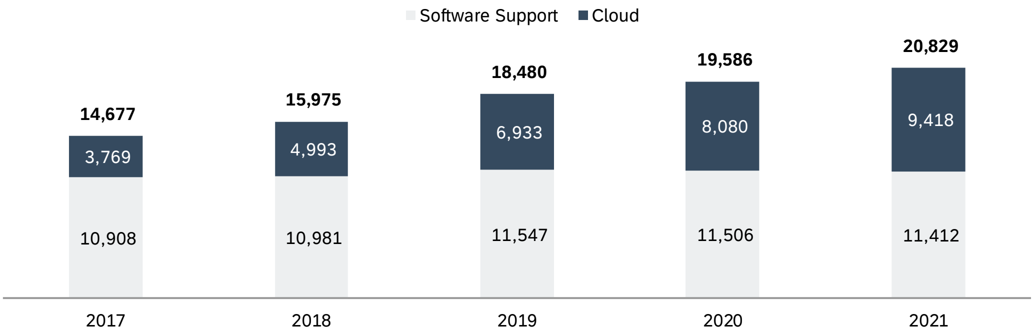
Our software licenses revenue declined €393 million from €3,642 million in 2020 to €3,248 million in 2021.

The continued demand for SAP software helped us maintain a stable maintenance customer base for software support, resulting in software support revenue of €11,412 million in 2021 (2020: €11,506 million), the slight decline being driven by an accelerated transition to the cloud and unfavorable currency exchange rates. SAP Enterprise Support was the largest contributor to our software support revenue.

Software licenses and software support revenue decreased €488 million, or 3%, from €15,148 million in 2020 to €14,660 million in 2021.

More Predictable Revenue

€ millions



We define more predictable revenue as the sum of our cloud revenue and our software support revenue. Our more predictable revenue increased from €19,586 million in 2020 to €20,829 million in 2021. This reflects a rise of 6%. More predictable revenue accounted for 75% of our total revenue in 2021 (2020: 72%), following the upward trend from prior years.

Services revenue combines revenue from consulting services, premium support services, and other services such as training services. Consulting services primarily relate to the implementation of our cloud and on-premise software products. Our premium support offering consists of high-end support services tailored to customer requirements.

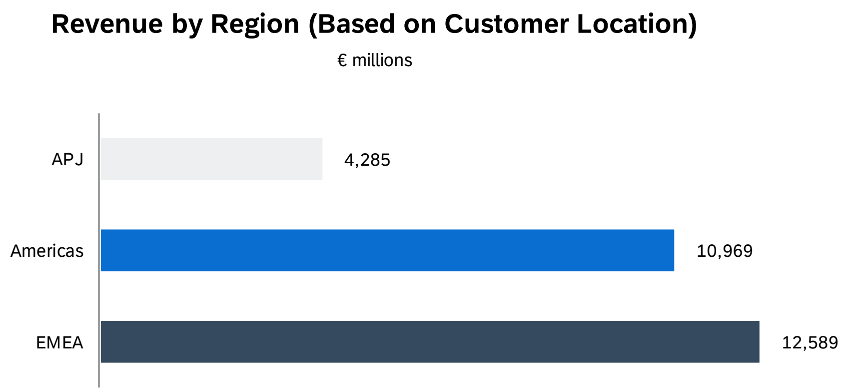
Services revenue decreased €345 million, or 8%, from €4,110 million in 2020 to €3,764 million in 2021. The services revenue decline was predominantly caused by the divestiture of the SAP Digital Interconnect business in 2020. For more information, see *Note (D.1)*. At the same time, the year-over-year revenue development continued to be negatively impacted by the lower consulting order entry generated in 2020 in the wake of COVID-19 pandemic uncertainties.

Consulting revenue and premium support revenue decreased €114 million, or 3%, from €3,408 million in 2020 to €3,294 million in 2021. In 2021, consulting and premium support revenue contributed 87% of the total services revenue (2020: 83%) and 12% of total revenue (2020: 12%).

Revenue from other services decreased €231 million, or 33%, to €471 million in 2021 (2020: €702 million), which was mainly caused by the divestiture of the SAP Digital Interconnect business.

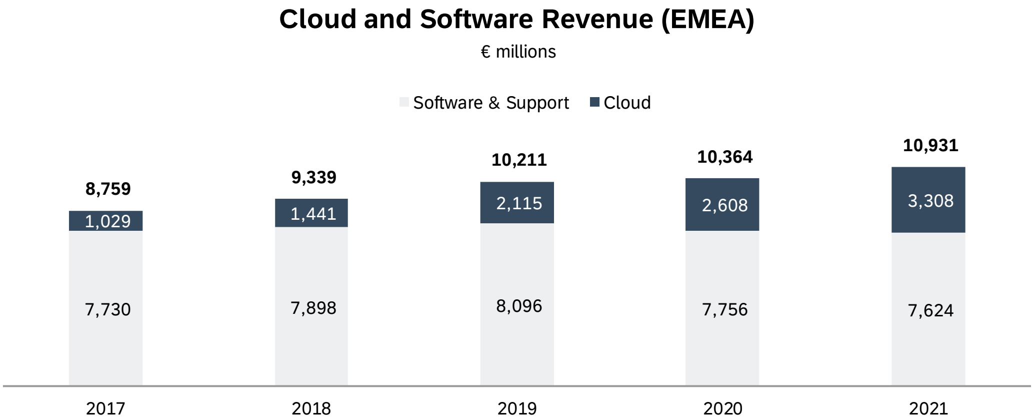
For more information about the development of our Services segment, see the *Segment Information* section.

Revenue by Region



EMEA Region

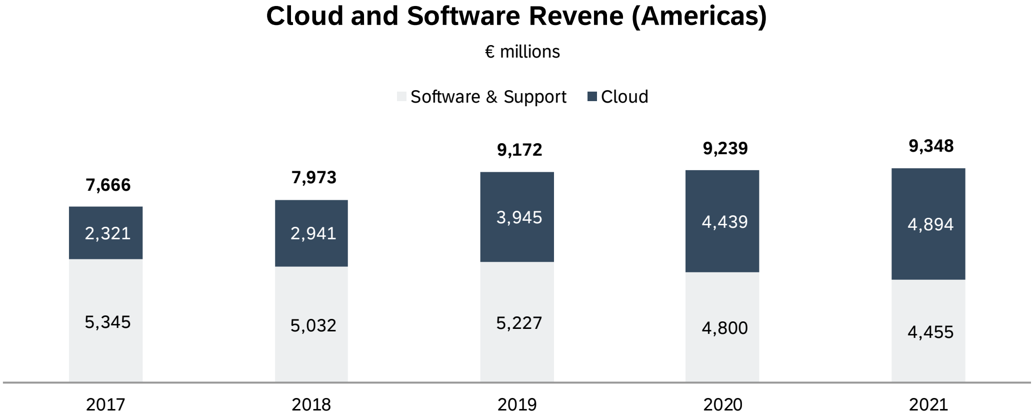
In 2021, the EMEA region generated €12,589 million in revenue (2020: €12,067 million), which was 45% of total revenue (2020: 44%). Revenue in Germany increased 8% to €4,343 million (2020: €4,015 million). Germany contributed 34% (2020: 33%) of all EMEA region revenue. The remaining revenue in the EMEA region was primarily generated in France, Italy, the Netherlands, Switzerland, and the United Kingdom.



Cloud and software revenue generated in the EMEA region totaled €10,931 million (2020: €10,364 million). That was 87% of all revenue from the region (2020: 86%). Cloud revenue in the EMEA region rose 27% to €3,308 million in 2021 (2020: €2,608 million). Software licenses and software support revenue decreased 2% to €7,624 million in 2021 (2020: €7,756 million).

Americas Region

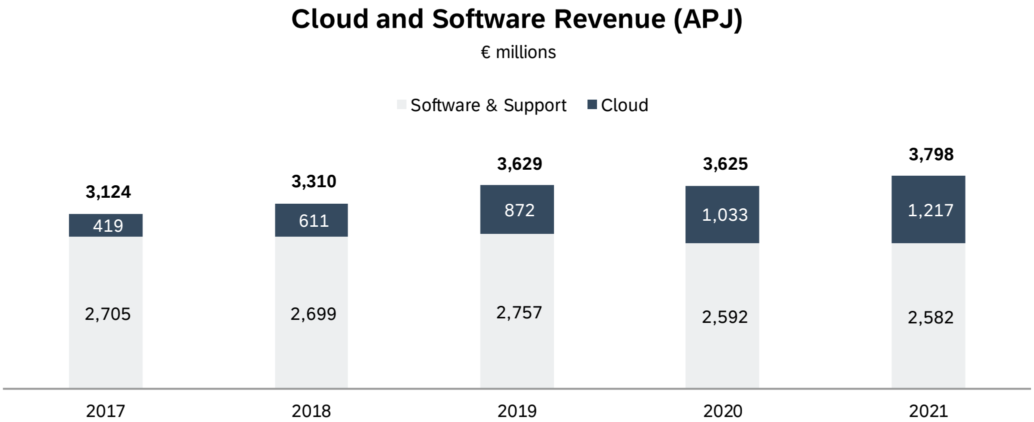
In 2021, 39% of our total revenue was generated in the Americas region (2020: 41%). Total revenue in the Americas region decreased 1% to €10,969 million (2020: €11,106 million). Revenue in the United States decreased to €8,870 million (2020: €9,110 million), primarily driven by unfavorable changes in currency exchange rates. The United States contributed 81% (2020: 82%) of all revenue generated in the Americas region. In the remaining countries of the Americas region, revenue increased 5% to €2,099 million. Revenue in the remaining countries of the Americas region was generated primarily in Brazil, Canada, and Mexico.



Cloud and software revenue generated in the Americas region totaled €9,348 million (2020: €9,239 million). That was 85% of all revenue from the region (2020: 83%). Cloud revenue in the Americas region rose 10% to €4,894 million in 2021 (2020: €4,439 million). The United States, SAP's largest market, contributed 83% of cloud revenue generated in the Americas region. Software licenses and software support revenue amounted to €4,455 million in 2021 (2020: €4,800 million).

APJ Region

In 2021, 15% of our total revenue was generated in the APJ region (2020: 15%). Total revenue in the APJ region increased 3% to €4,285 million (2020: €4,165 million). Despite the unfavorable currency development in Japan, revenue reached €1,301 million, nearly matching the previous year's level of €1,305 million. Revenue from Japan accounted for 30% of all revenue generated in the APJ region (2020: 31%). 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, China, and India.



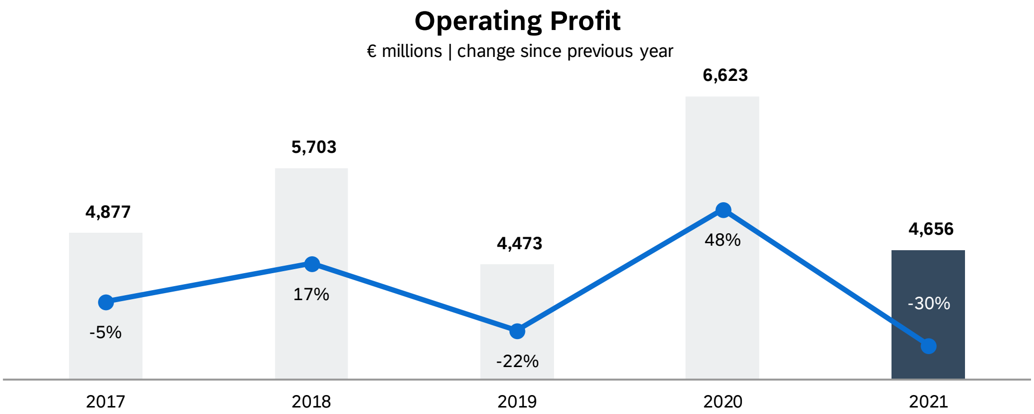
Cloud and software revenue in the APJ region totaled €3,798 million (2020: €3,625 million). That was 89% of all revenue from the region (2020: 87%). Cloud revenue in the APJ region rose 18% to €1,217 million in 2021 (2020: €1,033 million). Software licenses and software support revenue decreased from €2,592 million in 2020 to €2,582 million in 2021.

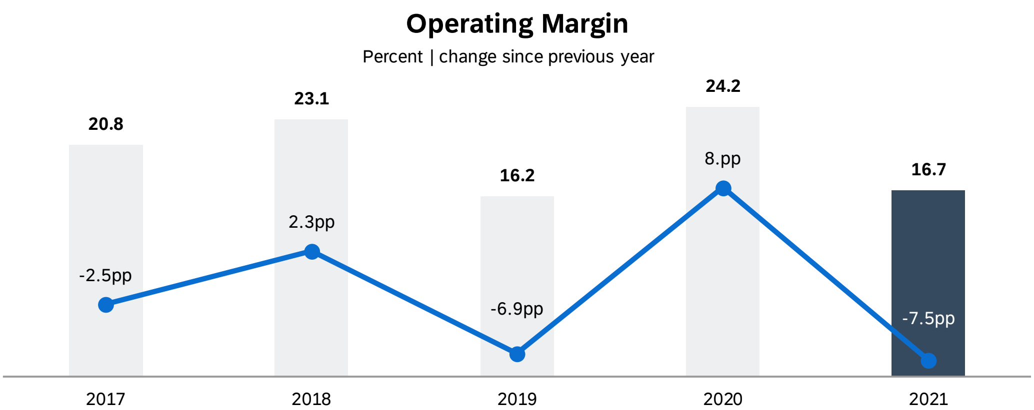
Operating Profit and Operating Margin

SAP continued to increase its cloud revenue in 2021. Total revenue increased significantly by 2% to €27,842 million (2020: €27,338 million), representing an increase of €504 million.

In 2021, our operating expenses increased €2,471 million, or 12%, to €23,186 million (2020: €20,715 million). The main contributor to the increase were share-based payments, mainly caused by newly granted equity-settled Qualtrics RSUs. Our employee headcount (measured in full-time equivalents, or FTEs) grew 4,984 FTEs year over year to 107,415.

As a result of these effects, our operating profit decreased 30% to €4,656 million (2020: €6,623 million) and our operating margin decreased 7.5pp to 16.7% (2020: 24.2%).





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

Cost of Cloud and Software

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

In 2021, the cost of cloud and software increased to €5,030 million (2020: €4,707 million) and our cloud margin widened 0.4pp from 66.6% in 2020 to 67.0% in 2021.

Our software licenses and software support margin was 86.9%, slightly above the prior year level (2020: 86.7%). Software licenses and software support revenue decreased 3% to €14,660 million (2020: €15,148 million), primarily arising from an 11% decline in software revenue. Software licenses and software support costs decreased correspondingly by 4% to €1,925 million (2020: €2,008 million).

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.

The services revenue decreased by 8% year over year to €3,764 million in 2021 (2020: €4,110 million). The cost of services declined 8% to €2,916 million (2020: €3,178 million). Our gross margin on services, defined as services profit as a percentage of services revenue, decreased slightly to 22.5% (2020: 22.7%). As our services business trends away from traditional software licensing and consulting revenue toward more subscription revenue from cloud solutions, we adjusted our service delivery resources correspondingly. The expenses are impacted by COVID-19-related limitations in personal customer contacts and a correspondingly high remote delivery share of the consulting services.

Research and Development

Our research and development (R&D) expense consists primarily of the personnel cost of our R&D employees, costs incurred for independent contractors whom 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% year-over-year increase in our R&D headcount, and due to continued strategic investments, our R&D expense rose 17% to €5,190 million in 2021 from €4,454 million in 2020. R&D expense as a percentage of total revenue thus increased to 18.6% in 2021 (2020: 16.3%). 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 grew 6% from €7,106 million in 2020 to €7,505 million in 2021. This increase is mainly attributable to the expansion of the global sales force and to greater expenditure on bonus payments prompted by strong revenue growth and share-based payments.

Accordingly, the ratio of sales and marketing expense to total revenue, expressed as a percentage, increased 1.0pp in 2021 to 27.0% (2020: 26.0%).

General and Administration Expense

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

General and administration expense increased 79% from €1,356 million in 2020 to €2,431 million in 2021. This increase is primarily due to expenses from share-based payments, with a major effect coming from Qualtrics equity-settled plans. The ratio of general and administration expense to total revenue grew 3.8pp year over year to 8.7% (2020: 5.0%).

Reconciliation of Cloud Revenues and Margins

€ millions, unless otherwise stated		Q1–Q4 2021 IFRS	Q1–Q4 2021 Non-IFRS	Q1–Q4 2021 Currency Impact	Q1–Q4 2021 Non-IFRS Constant Currency	Q1–Q4 2020 IFRS	Q1–Q4 2020 Adj.	Q1–Q4 2020 Non-IFRS	Δ in % IFRS	Δ in % Non-IFRS	Δ in % Non-IFRS Constant Currency[3]
Cloud revenue – SaaS/PaaS[1]	Intelligent Spend	2,831	2,831	67	2,899	2,722	0	2,722	4	4	6
	Other	5,669	5,669	86	5,755	4,517	5	4,522	25	25	27
	Total	8,500	8,500	154	8,653	7,239	5	7,244	17	17	19
Cloud revenue – IaaS[2]		918	918	21	939	841	0	841	9	9	12
Cloud revenue		**9,418**	**9,418**	**174**	**9,592**	**8,080**	**5**	**8,085**	**17**	**16**	**19**
Cloud gross margin – SaaS/PaaS[1] (in %)	Intelligent Spend	78.9	79.5		79.5	78.6		78.9	0.3pp	0.6pp	0.6pp
	Other	66.7	70.3		70.2	65.5		70.7	1.2pp	–0.4pp	–0.5pp
	Total	70.8	73.3		73.3	70.4		73.8	0.3pp	–0.5pp	–0.5pp
Cloud gross margin – IaaS[2] (in %)		32.5	33.6		33.5	33.6		34.3	–1.1pp	–0.7pp	–0.8pp
Cloud gross margin (in %)		**67.0**	**69.5**		**69.4**	**66.6**		**69.7**	**0.4pp**	**–0.2pp**	**–0.3pp**

[1] Software as a service/platform as a service
[2] Infrastructure as a service
[3] Constant currency period-over-period changes are calculated by comparing the current year's non-IFRS constant currency numbers with the non-IFRS numbers of the previous year's respective period.

Segment Information

At the end of 2021, SAP had three reportable segments: Applications, Technology & Support; Qualtrics; and Services. For more information about our segment reporting and the changes in the composition of our reportable segments in 2021, see the Notes to the Consolidated Financial Statements, *Notes (C.1)* and *(C.2),* and the *Performance Management System* section.

Applications, Technology & Support

€ millions, unless otherwise stated (non-IFRS)	2021 Actual Currency	2021 Constant Currency	2020 Actual Currency	Δ in % Actual Currency	Δ in % Constant Currency
Cloud revenue	8,509	8,661	7,541	13	15
Cloud gross margin (in %)	68.4	68.4	69.3	–0.9pp	–0.9pp
Segment revenue	23,502	23,816	22,965	2	4
Segment gross margin (in %)	79.5	79.5	80.6	–1.0pp	–1.1pp
Segment profit	9,567	9,718	9,722	–2	0
Segment margin (in %)	40.7	40.8	42.3	–1.6pp	–1.5pp

The Applications, Technology & Support segment recorded a strong increase in cloud revenue of 12.8% in 2021 (14.8% at constant currencies). At the same time, cost of cloud increased 16.0% (18.3% at constant currencies), which led to a reduction in the cloud gross margin of 0.9pp (0.9pp at constant currencies) to 68.4%. Software support revenue remained flat compared to the prior year and ended 2021 at €11,410 million, which indicated a growth of 0.6% at constant currencies. Together with software licenses revenue, which decreased 10.8% (11.0% at constant currencies) mainly due to the shift toward cloud revenue, the segment achieved a total software licenses and support revenue of €14,654 million. However, total segment revenue rose slightly, by 2.3% (3.7% at constant currencies), and ended 2021 at €23,502 million.

Overall, the share of more predictable revenue increased 1.8pp from 82.9% in 2020 to 84.8% in 2021.

Cost of revenue increased 7.7% (9.3% at constant currencies) compared to the prior year, ending 2021 at €4,808 million. This development was mainly driven by a strong increase in cost of cloud.

Segment profit remained at prior year level and ended 2021 at €9,567 million. This is mainly explained by an increase of total segment cost of 6.5% at constant currencies. Consequently, both the segment gross margin and the segment margin decreased slightly by 1.1pp and 1.5pp at constant currencies.

Qualtrics

€ millions, unless otherwise stated (non-IFRS)	2021		2020	Δ in %	Δ in %
	Actual Currency	**Constant Currency**	Actual Currency	Actual Currency	Constant Currency
Cloud revenue	757	780	518	46	50
Cloud gross margin (in %)	91.5	91.5	91.8	–0.3pp	–0.2pp
Segment revenue	929	957	681	37	41
Segment gross margin (in %)	79.6	79.7	77.6	1.9pp	2.1pp
Segment profit	44	44	–4	<–100	<–100
Segment margin (in %)	4.7	4.6	–0.6	5.4pp	5.2pp

The Qualtrics segment, which comprises SAP's experience management solutions, closed 2021 with a strong cloud revenue growth of 46.2% (50.4% at constant currencies). The associated cost of cloud rose 54.5% at constant currencies, which led to a slight drop in the segment's cloud gross margin of 0.3pp (0.2pp at constant currencies). Including services revenue, the total segment revenue increased 36.6% (40.6% at constant currencies) to €929 million. Overall, the Qualtrics segment profit increased to €44 million in 2021. The corresponding segment margin rose 5.4pp (5.2pp at constant currencies) to 4.7%.

Services

€ millions, unless otherwise stated (non-IFRS)	2021		2020	Δ in %	Δ in %
	Actual Currency	**Constant Currency**	Actual Currency	Actual Currency	Constant Currency
Services revenue	3,234	3,282	3,374	–4	–3
Services gross margin (in %)	37.1	37.2	34.5	2.6pp	2.7pp
Segment revenue	3,234	3,283	3,379	–4	–3
Segment gross margin (in %)	34.1	34.2	31.5	2.6pp	2.7pp
Segment profit	728	743	645	13	15
Segment margin (in %)	22.5	22.6	19.1	3.4pp	3.5pp

The Services segment, comprising major parts of SAP's services business, recorded revenue of €3,234 million, which represents a decline of 4.2% (2.7% at constant currencies). Cost of services decreased 7.9% (6.7% at constant currencies) to €2,035 million. As a result, the services gross margin increased 2.6pp (2.7pp at constant currencies) to 34.1% in 2021. This gross margin improvement was primarily attributable to the positive development of SAP's consulting and premium engagement business, and a higher remote delivery share of the consulting services.

Overall, the segment profit and the segment margin benefitted from this development and ended the year with a segment profit of €728 million and a segment margin of 22.5%, which indicates a growth of 3.4pp (3.5pp at constant currencies).

Financial Income, Net

Financial income, net, changed to €2,174 million (2020: €776 million). Our finance income was €3,123 million (2020: €1,473 million) and our finance costs were €949 million (2020: €697 million).

Finance income mainly consists of gains from IFRS 9-related fair value adjustments, mainly of Sapphire Ventures investments, and the disposal of equity securities totaling €3,067 million (2020: €1,360 million).

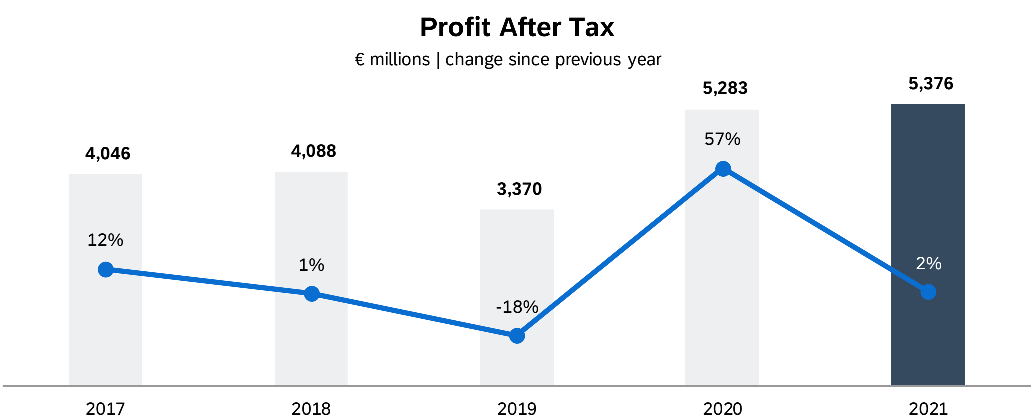
Finance costs mainly consist of interest expense on financial liabilities amounting to €160 million (2020: €179 million), and IFRS 9-related fair value adjustments or losses from disposal of Sapphire Ventures investments totaling €654 million (2020: €345 million). For more information about financing instruments, see the Notes to the Consolidated Financial Statements, *Note (E.3).*

Income Taxes

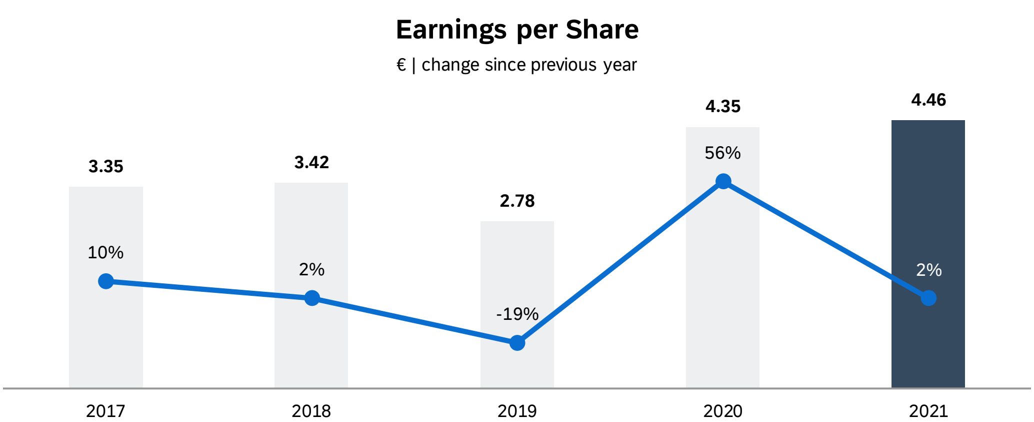
The effective tax rate in 2021 was 21.5% (2020: 26.8%). The year-over-year decrease mainly resulted from changes in tax-exempt income and a one-time change of taxable temporary differences associated with investments in subsidiaries, which were partly compensated by changes in non-deductible expenses. For more information about income taxes, see the Notes to the Consolidated Financial Statements, *Note (C.5).*

Profit After Tax and Earnings per Share

Profit after tax increased to €5,376 million in 2021 (2020: €5,283 million).



Basic earnings per share increased to €4.46 (2020: to €4.35). The number of shares outstanding decreased slightly to 1,180 million in 2021 (2020: 1,182 million).



Dividend

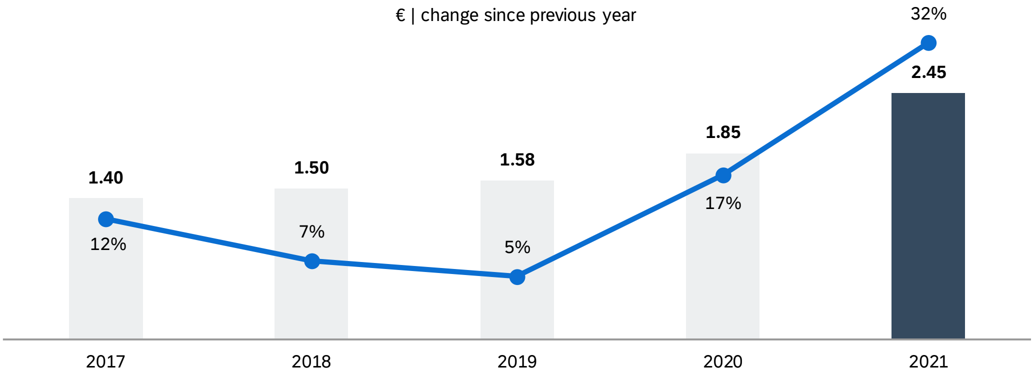
We believe our shareholders should benefit appropriately from the profit the Company made in 2021. Our dividend policy is to pay a dividend totaling 40% or more of profit after tax.

The Executive Board and the Supervisory Board of SAP SE will recommend to the Annual General Meeting of Shareholders in May 2022 that the total dividend for 2021 be increased 32% to €2.45 per share (2020: €1.85). This payment includes a special dividend of €0.50 to celebrate SAP's 50th anniversary. Based on this recommendation, the overall dividend payout ratio (which means the total distributed dividend as a percentage of profit after tax) would be 54% (2020: 41%). Excluding the special dividend, the ratio would be 43%.

If the shareholders approve this recommendation, and based on the number of treasury shares as at December 31, 2021, the total amount distributed in dividends will be €2,890 million. The actual amount distributed can be different from this total amount, because the number of shares held as treasury stock will change before the Annual General Meeting of Shareholders due to the share buyback SAP will execute in 2022. In 2021, we distributed €2,182 million in dividends.

Dividend per Share

€ | change since previous year



Finances (IFRS)

Overview

Global Financial Management

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

We manage credit, liquidity, interest rate, equity price, and foreign exchange rate risks on a Group-wide basis. We use selected derivatives exclusively for this purpose and not for speculation, which is defined as entering into a derivative instrument for which we do not have corresponding underlying transactions. The rules for the use of derivatives and other rules and processes concerning the management of financial risks are documented in our Treasury Guideline, which applies globally to all companies in the Group. For more information about the management of each financial risk and about our risk exposure, see the Notes to the Consolidated Financial Statements, *Notes (F.1) and (F.2).*

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.

The Company plans to repurchase shares with a volume of up to €1.0 billion in the period between February 1, 2022, and December 31, 2022. Repurchased shares will primarily be used to service future awards granted under the 'Move SAP' share-based compensation plan which will start to be predominantly equity-settled in 2022. The share buyback will be in addition to SAP's regular dividend policy. Further capital returns in subsequent years will be decided on an annual basis in line with SAP's capital allocation priorities.

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, 2021, our cash, cash equivalents, and current investments were primarily held in euros and U.S. dollars. We generally invest only in the financial assets of issuers or funds with a minimum credit rating of BBB, and pursue a policy of cautious investment characterized by wide portfolio diversification with a variety of counterparties, predominantly short-term investments, and standard investment instruments. Our investments in financial assets of issuers with a credit rating lower than BBB were not material in 2021.

We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs in 2022 and, together with expected cash flows from operations, will support debt repayments, currently planned capital expenditure requirements, and capital returns to our shareholders over the near term and medium term. It may also be necessary to enter into financing transactions when additional funds are required that cannot be wholly sourced from free cash flow, to maintain flexibility, and/or limit repayment risk.

Therefore, we continuously monitor funding options available in the capital markets and trends in the availability of funds, as well as the cost of such funding. In recent years, we were able to repay additional debt within a short period of time due to our persistently strong free cash flow. For more information about the financial debt, see the *Cash Flows and Liquidity* section.

Credit Facilities

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

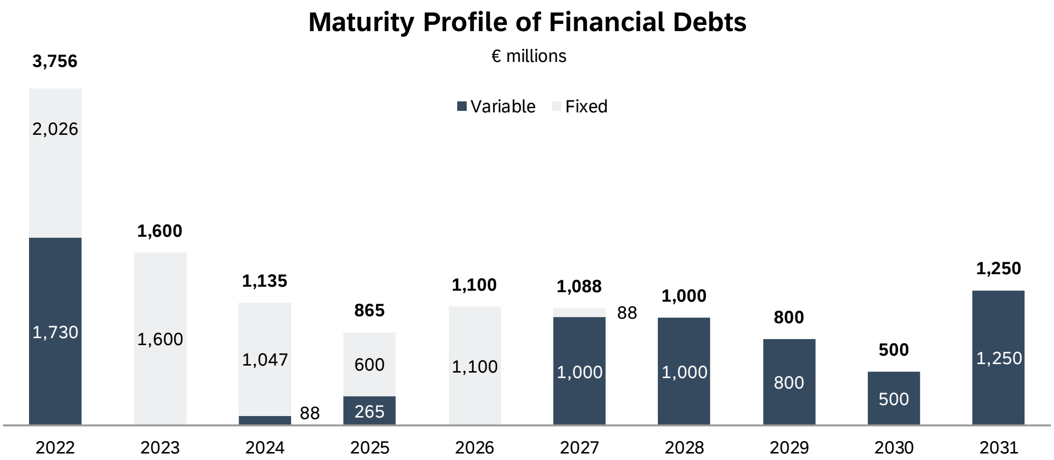
To retain high financial flexibility, we have available a €2.5 billion syndicated revolving credit facility with an end date in November 2024. A possible future utilization is not subject to any financial covenants. Borrowings under the facility bear interest of EURIBOR or LIBOR for the respective currency plus a margin of 0.17%. We are also required to pay a commitment fee of 0.0595% per annum on the unused available credit. So far, we have not used, and do not currently foresee any need to use this credit facility.

As at December 31, 2021, SAP SE had additional available credit facilities totaling €335 million. Several other SAP entities have credit facilities available that allow them to borrow funds at prevailing interest rates.

On December 31, 2021, two bilateral term loans with a total amount of €1.45 billion were outstanding. The amount can be flexibly repaid until maturity of the loan on September 30, 2022.

Financial Debts

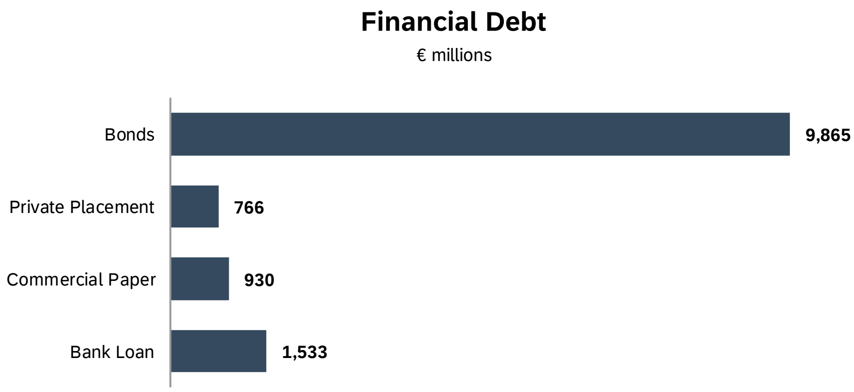
Financial debt is defined as the nominal volume of bank loans, commercial papers, private placements, and bonds.



Nominal volume of financial debt on December 31, 2021, included amounts in euros (€12,058 million) and U.S. dollars (€1,036 million). On December 31, 2021, approximately 50% of the financial debt was held at variable interest rates, partially swapped from fixed into variable using interest rate swaps.

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

Financial Debt by Instrument



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

Cash Flows and Liquidity

2021 Actual Cash Flow and Liquidity Performance Compared to Outlook

We met or exceeded the outlook for 2021.

€ billions	2020 Results	2021 Outlook[1]	**2021 Results**
Operating cash flows	7.2	Around 6.0	6.2
Capital expenditure	–0.8	Modest increase	–0.8
Free cash flow	6.0	Above 4.5	5.0
Income taxes payouts	–1.2	Higher	–2.1

[1] The 2021 outlook was communicated in January 2021 and was updated in April 2021. The 2021 outlook numbers above reflect the updated outlook from April 2021.

Group Liquidity and Net Debt

€ millions	**2021**	2020	Δ
Cash and cash equivalents	8,898	5,311	3,587
Current time deposits and debt securities	2,632	1,470	1,162
Group liquidity	**11,530**	**6,781**	**4,750**
Current financial debt	–3,755	–1,482	–2,273
Non-current financial debt	–9,338	–11,801	2,463
Financial debt	**–13,094**	**–13,283**	**189**
Net debt (–)	**–1,563**	**–6,503**	**4,939**
Lease liability	–2,143	–2,120	–23
Net debt including lease liability	–3,706	–8,623	4,916

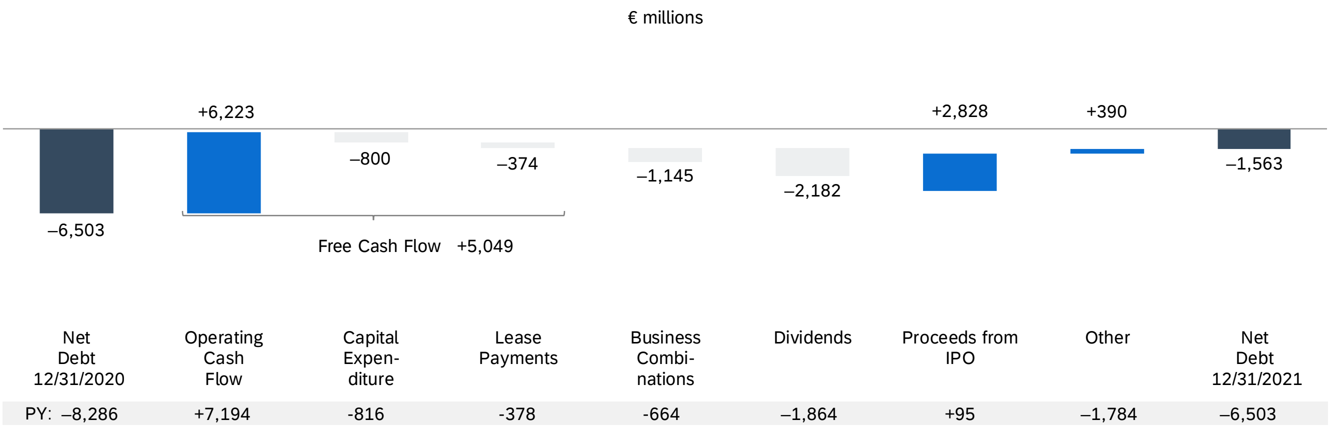
Group liquidity consists of cash and cash equivalents (for example, cash at banks, money market funds, and time deposits with original maturity of three months or less) and current investments (for example, time deposits and debt securities with original maturities of greater than three months, and remaining maturities of less than one year included in current other financial assets). Group liquidity on December 31, 2021, primarily comprised amounts in euros and U.S. dollars.

The increase in group liquidity compared to 2020 was mainly due to the cash inflows from our operations and the proceeds from the public offerings of Qualtrics shares.

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

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

Development of Net Debt



Analysis of Consolidated Statements of Cash Flow

€ millions	**2021**	2020	Δ in %
Net cash flows from operating activities	6,223	7,194	–13
Net cash flows from investing activities	–3,063	–2,986	3
Net cash flows from financing activities	–56	–3,997	–99

In 2021, cash inflows from operating activities decreased €971 million to €6,223 million (2020: €7,194 million). This is particularly due to higher income tax payments (€2.1 billion in 2021 compared to €1.2 billion in 2020) and lower payments related to restructuring (€0.0 billion in 2021 compared to €0.2 billion in 2020). Cash collected from customer contracts was at a similar level as in 2020.

Cash outflows from investing activities were €3,063 million in 2021 (2020: €2,986 million). We paid, net of cash received, a total of €1.1 billion mainly for the Signavio and Clarabridge acquisitions in 2021, compared to €0.6 billion mainly for the Emarsys acquisition in 2020. Capital expenditure on intangible assets and property, plant, and equipment remained at a comparable level. For more information about current and planned capital expenditures, see the *Assets* section and the *Investment Goals* section.

In 2021, free cash flow decreased to €5,049 million (2020: €6,000 million). The free cash flow conversion rate, defined as free cash flow as a percentage of profit after tax, decreased to 94% compared to 114% in 2020.

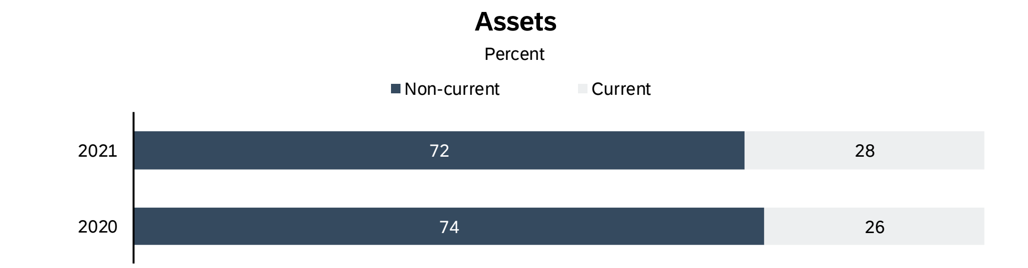
Net cash outflows from financing activities were €56 million in 2021, compared to €3,997 million in 2020. In 2021. we received €2.8 billion in proceeds from the public offerings of Qualtrics shares and repaid €1.25 billion of the acquisition term loan for Qualtrics, prior to its final maturity date in 2022. Further, we repaid €0.5 billion in Eurobonds, and €0.15 billion of a commercial paper program (Commercial Paper). In 2021, we drew two short-term loans of €0.95 billion and €0.5 billion respectively, as well as €0.15 billion in Commercial Paper. The cash outflows in 2020 resulted from the buyback of treasury shares with a volume of €1.5 billion, repayments of €1.15 billion in Eurobonds when they matured, the repayment of €0.75 billion in the acquisition term loan for Qualtrics, the repayment of US$0.29 billion in U.S. private placements when they matured, and the repayment of €0.17 billion in Commercial Paper.

The dividend payment of €2,182 million made in 2021 exceeded the amount paid the preceding year (€1,864 million), while the dividend paid per share increased from €1.58 to €1.85.

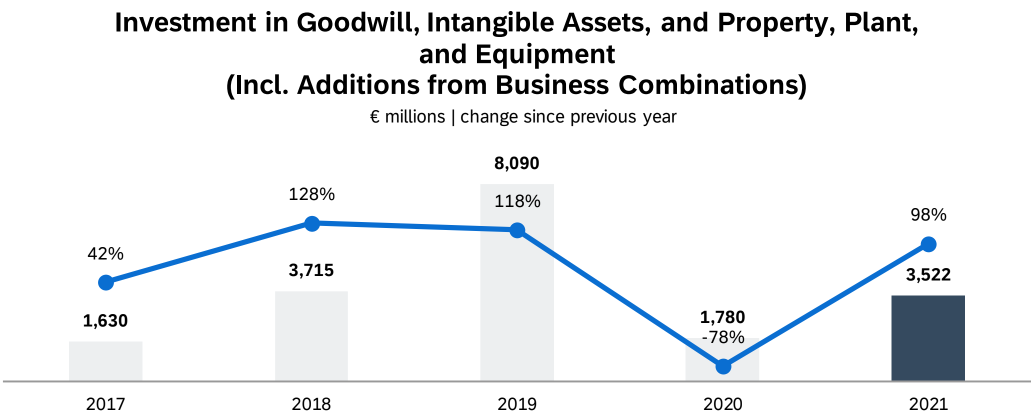
Assets (IFRS)

Analysis of Consolidated Statements of Financial Position

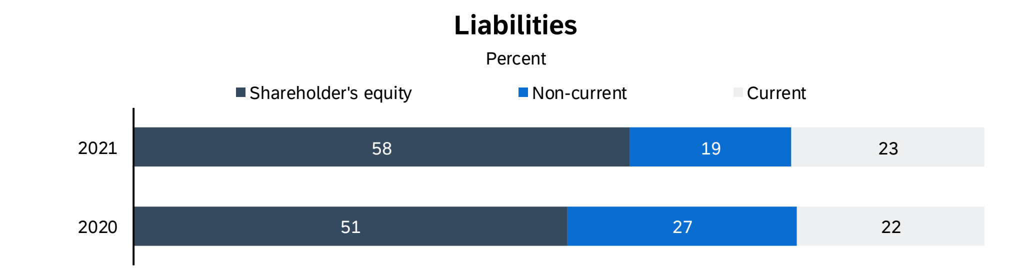
Total assets increased 22% year over year to €71,169 million.



Total current assets increased 33% in 2021 from €15,069 million to €20,044 million, mainly driven by an increase in cash and cash equivalents.



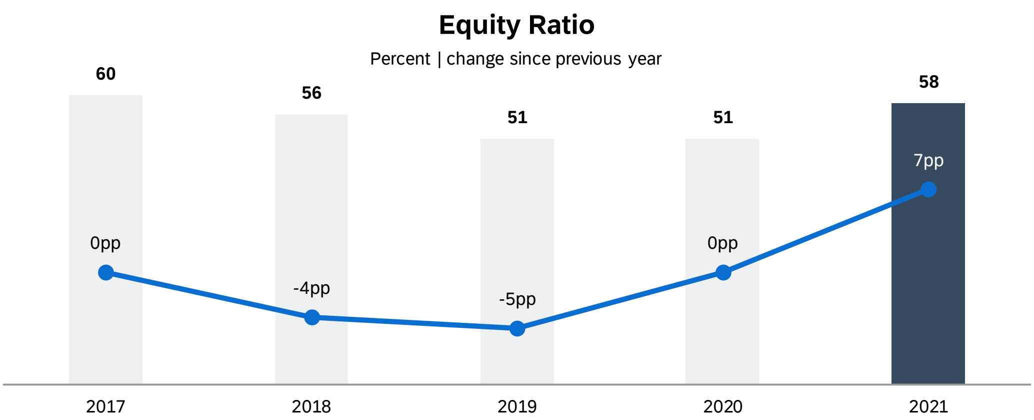
Total non-current assets grew 18% to €51,125 million (2020: €43,395 million). Among other effects, this change was mainly due to an increase in goodwill resulting from foreign-exchange-related revaluations as well as the Clarabridge and Signavio acquisitions and an increase in listed and unlisted equity investments resulting from fair value increases and purchases.



Current liabilities grew 26% to €16,136 million in 2021 (2020: €12,842 million). This was mainly due to an increase in current financial liabilities. For more information about our financing activities in 2021, see the *Finances (IFRS)* section.

Total non-current liabilities decreased 14% to €13,510 million in 2021 compared to the previous year's figure of €15,696 million. This was mainly due to a decrease in non-current financial liabilities. For more information about our financing activities in 2021, see the *Finances (IFRS)* section.

The equity ratio (that is, the ratio of shareholders' equity to total assets) grew 7pp to 58% (2020: 51%).



Principal Investments and Divestitures Currently in Progress

In 2021, we finalized various construction projects and continued and started new construction activities in several locations. We plan to finance all of these projects from operating cash flow. Our most important projects are listed below.

Construction Projects

€ millions

Country	Location of Facility	Short Description	**Estimated Total Cost**	**Costs Incurred as at 12/31/2021**	Estimated Completion Date
Germany	Berlin	New office building for approx. 1,250 employees	50	3	November 2023
Germany	Munich	New office building for approx. 600 employees	94	15	September 2023
Germany	Walldorf	General renovation of headquarters building for approx. 1,500 employees	219	4	September 2026
Bulgaria	Sofia	New office building for approx. 1,200 employees[1]	54	46	March 2023
India	Bangalore	New office building for approx. 3,500 employees	86	0	December 2025
Japan	Tokyo	New office building for approx. 1,500 employees	29	1	August 2022

[1] In Sofia we bought a building under construction and plan to complete it.

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

Competitive Intangibles

The majority of (intangible) resources that are the basis for our current as well as future success does not appear in the Consolidated Financial Statements. This is apparent from a comparison of the market capitalization of SAP SE (based on all issued shares), which was €153.4 billion at the end of 2021 (2020: €131.7 billion), with the book value of our equity in the Consolidated Financial Statements, which was €41.5 billion (2020: €29.9 billion). This means that the market capitalization of our equity is more than three times higher than the book value. The difference is mainly due to certain internally generated intangible resources that the applicable accounting standards do not allow to be recorded (at all or at fair value) in the Consolidated Financial Statements. These resources include customer capital (our customer base and customer relations); employees and their knowledge and skills; our ecosystem of partners; the majority of internally developed software; our ability to innovate; the brands we have built up, in particular, the SAP brand itself; and our organization.

On December 31, 2021, SAP was the second most valuable company in the German DAX 40 in terms of market capitalization based on all issued shares.

In 2021, SAP's brand value increased compared to 2020. According to the Interbrand "Best Global Brands" annual survey, SAP ranked as the 20th most valued brand in the world (2020: 18th). Against other German brands, the SAP brand ranks third behind Mercedes-Benz and BMW, and third globally against other brands in the business services sector. Interbrand determined our brand value to be US$30 billion, an increase of 7% compared to the previous year (2020: US$28 billion). Kantar BrandZ recognized SAP as the world's 26th most valuable brand in the Kantar BrandZ 2021 Most Valuable Global Brands ranking (2020: 17th). The ranking estimates SAP's brand value at US$69 billion (2020: US$58 billion), an increase of 20% compared to the previous year.

Report on the Economic Position of SAP SE

SAP SE is headquartered in Walldorf, Germany, and is the parent company of the SAP Group, which comprises 290 companies. SAP SE is the Group holding company and employs most of the Group's Germany-based development and service and support personnel.

As the owner of the intellectual property in most SAP software, SAP SE derives its revenue mainly from software license fees and bears the Group-wide research and development expenses for the most part.

On March 5, 2021, SAP SE completed the acquisition of Signavio GmbH, Berlin, Germany ("Signavio"), a leader in the enterprise business process intelligence and process management space. Subsequently, based on the merger agreement concluded on October 25, 2021, SAP SE took over all assets and liabilities of Signavio with effect from January 1, 2021. The difference between the acquisition cost of the Signavio shares and the assets and liabilities carried at fair value has been recognized as goodwill on the balance sheet.

On April 13, 2021, SAP SE and investment company Dediq GmbH, Munich, Germany, ("Dediq") announced that they had agreed to enter into a partnership in the area of financial services. Following the close of the transaction in September 2021, SAP SE and Dediq jointly own the new "SAP Fioneer" entity (with SAP owning a minority share). The disposal gain relating to the transfer of the business (predominantly IP and employees) is included in Other operating income.

The SAP SE annual financial statements are prepared in accordance with the reporting standards in the German Commercial Code and the German Stock Corporation Act. The full SAP SE annual financial report and unqualified audit report are submitted to the operator of the *Elektronischer Bundesanzeiger* (Online German Federal Gazette) for publication and inclusion in the *Unternehmensregister* (German Business Register). It is available from SAP SE on request.

Income

SAP SE's income statement is classified following the nature of expense method and presents amounts in millions of euros.

SAP SE Income Statement – German Commercial Code (Short Version)

€ millions	2021	2020
Total revenue	**15,370**	**14,669**
Other operating income	1,026	1,385
Cost of services and materials	–9,859	–9,112
Personnel expenses	–2,765	–2,362
Depreciation and amortization	–719	–606
Other operating expenses	–2,298	–2,573
Operating profit	**756**	**1,401**
Finance income	**2,530**	**1,724**
Income before taxes	**3,286**	**3,125**
Income taxes	–583	–625
Income after taxes	**2,703**	**2,500**
Other taxes	–12	–15
Net income	**2,692**	**2,485**

The total revenue of SAP SE in 2021 was €15,370 million (2020: €14,669 million), an increase of 5%. Product revenue increased 2% to €12,211 million (2020: €11,943 million). As in previous years, product revenue was primarily generated from license fees paid by subsidiaries of SAP SE.

Service revenue increased 86% to €845 million in 2021 (2020: €453 million), other revenue increased 2% to €2,314 million (2020: €2,273 million).

SAP SE operating profit decreased 46% to €756 million (2020: €1,401 million). Other operating income decreased €358 million to €1,026 million (2020: €1,385 million). The year-over-year decrease is primarily due to a €494 million decrease in gains from currency effects, partly offset by the disposal gain relating to the transfer of the business to SAP Fioneer of €117 million.

SAP SE cost of services and materials increased 8% to €9,859 million (2020: €9,112 million). Services received increased €724 million to €7,715 million (2020: €6,991 million), mainly due to increased services received in the context of intra-Group cost allocations. The costs for licenses and commissions increased €17 million to €2,111 million (2020: €2,094 million).

SAP SE personnel expenses, mainly the labor cost of software developers, service and support employees, and administration staff employed by SAP SE, increased by 17% to €2,765 million (2020: €2,362 million), primarily due to an increase in shared-based compensation expenses and headcount increase over the year.

Other operating expenses decreased €275 million to €2,298 million (2020: €2,573 million). This decrease is mainly attributable to a €495 million decrease in currency exchange losses and a €47 million decrease in impairment of receivables. The decrease in other operating expenses was partly offset by a €122 million increase in services purchased and a €63 million increase in other services expense.

Finance income was €2,530 million (2020: €1,724 million), representing a year-over-year increase of €806 million. This increase is primarily due to a €120 million increase in income from investments, a €770 million increase in results from profit and loss transfer agreements, and an offsetting effect of €78 million increase in write-downs on financial assets.

SAP SE income before taxes increased €161 million to €3,286 million (2020: €3,125 million). Income taxes decreased €43 million to €583 million (2020: €626 million). After deducting taxes, the resulting net income was €2,692 million (2020: €2,485 million), an increase of €207 million year over year.

Assets and Financial Position

In 2021, SAP SE total assets closed at €47,320 million (2020: €44,922 million).

SAP SE Balance Sheet as at December 31 – German Commercial Code (Short Version)

€ millions	2021	2020
Assets		
Intangible assets	1,792	1,398
Property, plant, and equipment	1,350	1,417
Financial assets	36,050	34,857
Fixed assets	**39,192**	**37,672**
Inventories	1	1
Accounts receivable and other assets	5,244	4,544
Marketable securities and liquid assets	1,391	703
Short-term assets	**6,635**	**5,248**
Prepaid expenses and deferred charges	**979**	**1,487**
Deferred taxes	**512**	**514**
Surplus arising from offsetting	**1**	**1**
Total assets	**47,320**	**44,922**
Equity and liabilities		
Shareholders' equity	**15,693**	**15,122**
Provisions	**2,233**	**2,046**
Liabilities	**29,372**	**27,740**
Deferred income	**22**	**13**
Total shareholders' equity and liabilities	**47,320**	**44,922**

Intangible assets increased €395 million year over year to €1,792 million (2020: €1,398 million). This increase was mainly caused by the addition of €632 million in goodwill and additions of €71 million in intellectual property and other similar rights in connection with the Signavio merger.

Financial assets increased €1,193 million year over year to €36,050 million (2020: €34,857 million), mainly due to capital contributions to subsidiaries and the acquisition of AppGyver Inc.

The increase of €700 million in accounts receivable and other assets was primarily the result of a €479 million increase in receivables from affiliated companies and a €198 million increase in tax assets.

Marketable securities and liquid assets increased €687 million to €1,391 million (2020: €703 million).

SAP SE shareholders' equity increased 4% to €15,693 million (2020: €15,122 million). Against outflows of €2,182 million associated with the payment of the dividend, there was a €2,692 million increase due to net income for 2021. The equity ratio (that is, the ratio of shareholders' equity to total assets) is 33% (2020: 34%).

Provisions increased €187 million to €2,233 million (2020: €2,046 million). Other provisions increased €235 million to €1,529 million (2020: €1,294 million), primarily as a result of an increase in other obligations toward employees. In contrast, provisions for tax decreased €50 million to €689 million (2020: €739 million).

Liabilities increased €1,632 million to €29,372 million (2020: €27,740 million). This increase mainly resulted from a €1,787 million increase in liabilities to affiliated companies, primarily due to higher cash contributions by subsidiaries through SAP SE's centralized management of finance and liquidity.

Opportunities and Risks

SAP SE is subject to essentially the same opportunities and risks as the SAP Group. For more information, see the *Risk Management and Risks* section and the *Expected Developments and Opportunities* section.

Non-Financial Statement Including Information on Sustainable Activities

With this section and the information referenced to in this section, SAP SE fulfills its duty to produce a non-financial statement (NFS) for the holding company, pursuant to section 289b–e of the German Commercial Code (HGB), and a non-financial group statement, pursuant to section 315b–c in conjunction with section 289c–e of the German Commercial Code (HGB), in the form of a combined non-financial statement. The relevant non-financial matters are referenced in the table below and can be found in the relevant sections of our combined management report.

Additionally, following Article 8 of Regulation 2020/852 of the European Parliament and of the Council of the European Union (EU Taxonomy), we have included information on how and to what extent SAP's activities are associated with economic activities that qualify as environmentally sustainable under this regulation.

For more information, see the *Sustainable Finance: EU Taxonomy Disclosures* subsection.

Reporting Framework

The social and environmental data and information included in the SAP Integrated Report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards: Core Option.

Business Model

SAP's business model is described in the *Strategy* section of the combined management report. Good governance is a prerequisite for continued success and is described throughout the combined management report. Therefore, we do not explicitly list this material topic in our non-financial statement.

Non-Financial Disclosures in SAP's Combined Management Report

SAP determines which non-financial information has to be disclosed based on a materiality analysis we perform using internal and external input. The individual non-financial aspects to be covered by the non-financial statement are addressed in the following sections of our combined management report if material. The aspects human rights and social matters have not been identified as material topics according to section 289c (3) HGB. Nevertheless, these topics are important for SAP and discussed in the *Human Rights and Labor Standards* and *Social Investments* sections in our combined management report. No material risks according to section 289c (3) sentence nos. 3 and 4 HGB have been identified.

	Due Diligence; Policies and Guidelines (Concepts)	Measures and Results, Including Main KPIs	References to Financial Statements and Notes
Employee Matters	*Employees and Social Investments: Vision and Strategy; Due Diligence* *Expected Developments and Opportunities: Opportunities from Our Employees*	**Main KPI: Employee Engagement Index** *Employees and Social Investments: How We Measure and Manage Our Performance* *Strategy: Measuring Our Success* *Expected Developments and Opportunities*	*Notes to the Consolidated Financial Statements, Section B – Employees*
Environmental Matters	*Energy and Emissions: Vision and Strategy; Due Diligence*	**Main KPI: Net carbon emissions** *Energy and Emissions: How We Measure and Manage Our Performance* *Strategy: Measuring Our Success* *Expected Developments and Opportunities*	
Anti-Corruption and Bribery Matters	*Business Conduct: Vision and Strategy; Due Diligence*	*Business Conduct: How We Measure and Manage Our Performance*	*Notes to the Consolidated Financial Statements, Note (G.3)*
Customer Matters	*Customers: Vision and Strategy; Due Diligence*	**Main KPI: Customer Net Promoter Score, Revenues** *Customers: How We Measure and Manage Our Performance* *Strategy: Measuring Our Success* *Financial Performance: Review and Analysis* *Expected Developments and Opportunities*	*Notes to the Consolidated Financial Statements, Section A – Customers* *Consolidated Income Statements – Total Revenue*
Security, Data Protection, and Privacy	*Security, Data Protection, and Privacy: Vision and Strategy; Due Diligence for Security Topics; Due Diligence for Data Protection Topics*	*Security, Data Protection, and Privacy: How We Measure and Manage Our Performance*	

Sustainable Finance: EU Taxonomy Disclosures

€ millions, unless otherwise stated

	2021		
	Revenue	Operational Expenditures	Capital Expenditures
8.1 Data Processing and Hosting (contributing to climate change mitigation)	9,217	–898	–261
Non-eligible activities	18,625	–5,502	–1,472
Total	27,842	–6,400	–1,733
Proportion of eligible activities (in %)	**33%**	**14%**	**15%**

Accounting Policy and Contextual Information

Eligibility Assessment

In 2021, we identified the activity “8.1 Data processing, hosting, and related activities” as our only relevant Taxonomy-eligible economic activity contributing to climate change mitigation. SAP has evaluated the description of the activity 8.1 provided in the Annex 1 to the EU Taxonomy Climate Delegated Act of June 4, 2021, and concluded that the operation of SAP's cloud infrastructure comprising both SAP's own data centers and third parties engaged by SAP match the description of the activity "8.1 Data processing, hosting, and related activities" and is therefore considered as Taxonomy-eligible.

We also evaluated the relevance of the economic activity "8.2 Data-driven solutions for GHG emissions reductions." In light of our strategic commitment to sustainability management solutions that, for example, help our customers minimize carbon footprints and reduce waste through responsible supply chain management, we expect the share of associated revenues, operational expenditures, and capital expenditures to increase over the next years. In 2021, however, SAP has not recognized material revenues, operational expenditures, and capital expenditures associated to this activity that could be classified as Taxonomy-eligible. For more information about our sustainability management portfolio, see the *Environment and Emissions* section.

In addition, we performed an eligibility assessment of the activity "8.2 Computer programming, consultancy and related activities" relating to climate change adaptation. According to the EU Taxonomy regulation, only activities that are classified as "enabling," that is, activities that help other activities substantially contribute to climate change adaptation, can be included in the turnover KPI. Activity 8.2 is not categorized as an "enabling" activity and therefore we cannot attribute any turnover to this activity. Based on our current understanding of the FAQ document published by the European Commission on February 2, 2022, regarding the interpretation of certain legal provisions of the Delegated Act under Article 8 of the EU Taxonomy Regulation of July 6, 2021, we also concluded that operating and capital expenditures relating to activity 8.2 (climate change adaptation) are not Taxonomy-eligible.

Revenue

As outlined above, we have identified only one activity as a relevant Taxonomy-eligible economic activity to which revenues can be attributed. We considered materiality aspects in this process. While SAP may conduct more activities that could be designated as Taxonomy-eligible, currently only "8.1 Data processing, hosting, and related activities" was identified as material in terms of associated revenues. This may change in the future as SAP is aiming to extend our sustainability management product portfolio and increase the corresponding revenue share.

As described in the Notes to the Consolidated Financial Statements, *Note A.1,* in detail, SAP's cloud revenue consists mainly of fees earned from providing the following services:

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (IaaS)

These services conform with the description of activity 8.1. Therefore, we have designated the revenue resulting from these services as eligible for the EU Taxonomy. Other revenues that qualify as cloud revenue but cannot be classified as Taxonomy-eligible have been excluded.

Total revenue was determined according to IFRS, specifically IFRS 15, and matches total revenue presented in SAP's *Consolidated Income Statements.* For more information about how we recognize revenue and the components of revenue, see the Notes to the Consolidated Financial Statements, *Note A.1.*

For a detailed description of the development and key drivers of SAP's revenue, see the *Performance Against Our Outlook for 2021 (Non-IFRS)* and *Operating Results (IFRS)* sections in the combined management report.

Operational Expenditures

We have designated those costs as Taxonomy-eligible that relate to assets and processes associated with the Taxonomy-eligible activity "8.1 Data processing, hosting, and related activities." We considered materiality aspects in the identification process of relevant costs and activities. The costs connected to this activity mainly include expenses for maintenance and repair relating to SAP's own cloud infrastructure as well as leasing expenses for hosting services provided by third parties.

Total operating expenses according to the EU Taxonomy mainly include the following non-capitalized cost elements: research and development, short-term lease, and maintenance and repair relating to property, plant, and equipment. Other major expense components in SAP's *Consolidated Income Statement*, such as, for instance, depreciation, utilities (for example, costs for heating and electricity consumption), as well as most general and administrative cost, restructuring, and sales and marketing cost do not fall in scope of the definition of operating expenses according to the EU Taxonomy and are therefore excluded.

For a detailed description of the development and key drivers of all operating expenses, see the *Performance Against Our Outlook for 2021 (Non-IFRS)* and *Operating Profit and Operating Margin* sections in our combined management report.

Capital Expenditures

In line with the EU Taxonomy regulation, total capital expenditures presented in this section include additions to tangible and intangible assets accounted for based on IAS 16, IAS 38, and IFRS 16, as well as additions to tangible and intangible assets (excluding additions to goodwill) resulting from business combinations.

Taxonomy-eligible capital expenditures relate to assets and processes that are associated with the economic activity "8.1 Data processing, hosting, and related activities." We also considered materiality aspects in the identification process of relevant costs and activities. These expenses comprise mostly investments in SAP's cloud infrastructure.

Audit Scope

The content of the non-financial statement was not subject to the statutory audit of the combined group management report. However, our external auditor carried out an independent limited assurance engagement on the non-financial statement including the EU Taxonomy disclosures. In addition, all non-financial aspects referenced to in the table *Non-Financial Disclosures in SAP's Combined Management Report* are assured by our external auditor, however, on different audit assurance levels (reasonable or limited). The **Audit Scope** box at the end of the respective chapters in the management report explains the audit scope of the disclosures in the respective chapter.

Security, Data Protection, and Privacy

Vision and Strategy

Every day, organizations around the world trust SAP with their data – either on premise at their physical locations, in the cloud, or when using mobile devices while on the move. Our customers need to know that our goal is to keep their data safe, process it in a manner that complies with local legislation, and protect it from malicious use. For this reason, cybersecurity and security, as well as data protection and privacy, are of paramount importance to us.

SAP Global Security

Cloud solutions and services are increasingly important to many companies' daily operations. The COVID-19 pandemic has shown that digital solutions are critical to business resilience. As a result, digital transformation is accelerating and cybersecurity is now even more crucial to IT security professionals and business leaders, particularly in those enterprises that have moved their core processes to the cloud.

The SAP strategy is focused on helping customers transform into intelligent and sustainable enterprises. Our **SAP Global Security** (SGS) organization supports this journey with its goal of reducing risk and promoting regulatory compliance, and by aligning people, procedures, and technology to protect business processes and data. The organization embraces and encourages a security-minded culture that embeds security in our development and deployment processes and helps secure digital transformation.

SGS supports key stakeholders in our lines of business (LoBs), IT, and the presales organization in securing solutions, and drives operational excellence for security across the enterprise. To protect the organization's data and assets and support high-quality risk management and reporting, SGS regularly reviews and adapts our security policies, standards, and frameworks.

Data Protection

With our global product and services portfolio, SAP aims to protect the rights of individuals involved and meet relevant local requirements when processing personal data. In addition, we strive to strengthen SAP's reputation in the long term as a sustainable and trustworthy partner in the market. We have implemented safeguards to help protect the fundamental rights of everyone whose data is processed by SAP, whether they are customers, suppliers, partners, prospects, employees, or applicants.

We develop and pursue our global data protection and privacy strategy in accordance with our business strategy. Our global data protection and privacy strategy is to constantly monitor the global regulatory data protection compliance landscape, identify relevant stakeholders, and enable them to take necessary measures for their adoption. It is also designed to safeguard the processing of personal data. The strategy consists of four pillars to help meet compliance with applicable data protection laws and regulations. These pillars comprise the global data protection and privacy policy; mandatory global data protection and privacy training for employees; our global data protection and privacy coordinator network; and the global data protection management system – and are all aiming to ensure that we comply with applicable data protection laws.

Due Diligence for Security Topics

Governance

SGS is led by a chief security officer who reports directly to the SAP CEO. SGS divisions are responsible for areas such as product and application security, cyberdefense, operational security risk management, security compliance, executive protection, physical security, and a **Trust Office** that supports customers and partners with security-related issues.

The **SAP Security Governance Model** is designed to ensure executive engagement and facilitates shared responsibility in semiannual SAP Security Advisory Board and monthly Security Council meetings, as well as in biweekly updates to the Executive Board.

Our commitment to customers is to be open and transparent about security vulnerabilities. To ensure this, we work with several external stakeholder groups including SAP user groups for the Americas and for German-speaking countries.

Guidelines and Policies

The purpose of the **SAP Global Security Policy** is to provide governance and structure for an appropriate and effective level of information security within SAP and our affiliated businesses. Aligned with the overall SAP corporate strategy and vision, it details the management intent, expectations, and strategic goals and objectives for SAP security.

This policy provides high-level requirements for numerous security domains. These include, but are not limited to, access control, physical security, network security management, incident response, and acceptable use. These requirements apply to all SAP employees, our contractors, consultants, as well as external parties that are granted access to SAP information and information assets. SAP reviews the SAP Global Security Policy annually and enacts modifications as deemed appropriate and necessary to protect SAP and our own and our customers' data and assets where new threats or vulnerabilities are identified.

All SAP employees are required to read and adhere to this internal policy. The **SAP Security Policy Framework** consists of several levels of security documents that support the requirements described in the policy. In addition, the different LoBs at SAP may have supporting policies, standards, procedures, and practices.

Due Diligence for Data Protection Topics

Governance

Within the scope of their responsibilities, our global data protection officer (DPO) monitors the compliance of activities involving the processing of personal data. The DPO reports to the SAP CFO. Within the Executive Board, the SAP CFO is responsible for compliance and enforcement of data protection and privacy. The DPO owns the **SAP Global Data Protection and Privacy Policy** that addresses SAP's data protection governance, and regularly informs the CFO about the status of data protection compliance in the SAP Group.

To meet and ensure consistent security and data protection compliance, SAP has implemented a formal governance model that assigns clear responsibilities across the SAP Group. Upon request, the DPO attends steering committee meetings and reports on matters relevant to data protection to the Audit and Compliance Committee of the SAP Supervisory Board.

SAP has established a global network of data protection and privacy coordinators (DPPCs) across all SAP Group entities that process personal data. This **DPPC network** is aimed to ensure data protection and privacy compliance on a local level. Local DPPCs increase awareness by conducting local training. Where new data protection laws evolve, they also help the **Data Protection and Privacy** (DPP) team acting on behalf of the DPO identify and analyze them. If this requires compliance activities, they align with the affected LoBs and help drive the relevant implementation. Additional regional DPPCs further support and monitor changes to applicable laws. The DPPC network regularly engages with SAP's government relations team to represent SAP's interests in the legislative process. In this regard, SAP is participating in external working groups to help align industry-specific interests with respective governments.

Global data protection and privacy training is conducted globally every two years and mandatory for SAP employees. This training helps our workforce handle personal data with due care and in accordance with the law and to maintain compliance with data protection requirements in their work.

SAP has implemented a data protection management system (DPMS) for our organization. The DPMS is set according to the generally recognized standard for data protection management systems as defined in the British Standard BS 10012, which comprises the data protection requirements of the European Union (EU) General Data Protection Regulation (GDPR) since version 10012:2017. The DPMS covers almost all LoBs (excluding Qualtrics) and is planned to be implemented in all acquired companies as well. It is designed as a framework covering all aspects of data protection compliance of SAP organizations and employees. The DPMS is used as SAP standard methodology to ensure compliance with data protection legislation. The maintenance of the framework is subject to certification from the British Standards Institution that confirms data protection compliance annually.

Guidelines and Policies

The SAP Global Data Protection and Privacy Policy outlines a group-wide minimum standard for data protection-compliant processing of personal data. It defines requirements for business processes that involve personal data, and assigns clear responsibilities. The principles established by this policy take into account the requirements of the EU GDPR. They apply generally and globally to SAP Group affiliates. Additional data protection and privacy requirements, if applicable, are adopted on a local level as necessary. We actively monitor changes to applicable laws and regulations so that we can update our standards on an ongoing basis as necessary to meet data protection compliance. The policy was last updated in 2019.

How We Measure and Manage Our Performance

Security

Compliance processes at SAP adhere to trust-service criteria established by the American Institute of Certified Public Accountants (AICPA). Our security, availability, privacy, confidentiality, and processing integrity controls are designed to achieve the appropriate control objectives. In addition, independent, external auditing partners regularly conduct security compliance audits.

SAP discloses vulnerabilities on the second Tuesday of every month (“Patch Day”). This disclosure mechanism provides customers with authoritative, public information about SAP software vulnerabilities from SAP that can be integrated with their existing risk management processes and tools.

SAP strives to reduce risk by continuously improving our processes for detecting and remediating attacks and vulnerabilities. To that end, we:

- Engage in approximately 130 internal and external audits across SAP globally
- Monitor and support our cloud and IT units with 1,700 controls that are audited and tested for design and operating effectiveness
- Offer service organization control (SOC) reports – such as SOC 1 Type II/ISAE 3402 and SOC 2 Type II/ISAE 3000 – to provide insights into the design and operating effectiveness of internal control systems implemented within cloud delivery units
- Let external, internationally accredited auditors assess and certify our cloud services according to various reporting standards and ISO certifications, such as ISO 9001, ISO 27001, ISO 27017, ISO 27018, and ISO 22301, in addition to BS 10012

Data Protection

To help ensure necessary knowledge about data protection, global data protection and privacy training is mandatory for SAP employees. The latest training was rolled out in 2021 as per the two-year renewable cycle.

We monitor compliance of data protection-relevant procedures across SAP. We maintain a record of processing activities (“procedure enrollment tool”), in which procedures that process personal data must be documented. The record entries contain general information about the procedure according to defined criteria necessary to meet proper documentation. The record entries are reportable and regularly reviewed.

We also track the quality of our data protection compliance level based on the annual recertification of our DPMS by the British Standards Institution (BSI). SAP has been audited by the BSI annually and awarded certifications according to BS 10012 since 2011. The most recent certification is valid until 2022.

SAP’s own quality standards and international regulations require careful selection and monitoring of subprocessors processing personal data on behalf of SAP and SAP customers. With the goal that all subprocessors meet protection and security requirements for the processing of personal data, SAP has implemented a subprocessor verification process. All of SAP's subprocessors (for example, suppliers, vendors, and partners) are subject to this process. The process comprises three main compliance criteria for data protection-relevant subprocessors: (i) contractual compliance; (ii) self-assessments based on a questionnaire including transfer impact assessments on international data transfers to third countries; and (iii) remote and/or on-site audits.

SAP respects the rights of the data subjects to obtain information as to whether or not personal data concerning them is being processed. All necessary information is made available to the data subjects within the framework of the privacy statements on the respective SAP Web sites.

In 2021, SAP experienced two significant incidents in processing personal data – on our own behalf – that were subject to GDPR only and were reported to the supervisory authorities.

Related Risks for SAP

For related risks, see the *Risk Management and Risks* section, specifically the *Cybersecurity and Security* and *Data Protection and Privacy* subsections.

Audit Scope

The content of the section *Security, Data Protection, and Privacy* was not subject to the statutory audit of our combined group management report. However, our external auditor performed an independent limited assurance engagement for the content of this section.

Customers

Vision and Strategy

Focusing on Customer Success

We aim to maximize the value our customers derive from their investment in and relationship with SAP at every touchpoint in their experience with us over the engagement lifecycle. Our focus on value and experience drives our customers' success. Our customer-facing teams – across solutions, sales, services, customer engagement, ecosystem, and others – work together along an operating model that aims to harmonize internal processes with the goal of delivering improved outcomes for our customers.

Company-Wide Experience (XM) Program

To further address and improve on customer feedback through research conducted using Qualtrics solutions, we developed the **Company-Wide Experience (XM)** program. This is an example of a program we have implemented aiming to achieve a consistent end-to-end experience for our customers. This program includes standardizing experience initiatives and methodologies to help identify and improve experience gaps across SAP.

Due Diligence

Governance

The head of Customer Success leads customer-facing engagements across SAP's business. The Chief Marketing & Solutions Officer leads the development of our solution value propositions to provide clarity on SAP's core differentiators. The People & Operations Board area is responsible for conducting the Company-Wide XM program, including conducting the **Customer Net Promoter Score (NPS)** survey.

Guidelines and Policies

Numerous policies govern our relationships with our customers, including the **Employee Code of Conduct**, **SAP Human Rights Commitment** statement, and applicable General Terms and Conditions for our products.

How We Measure and Manage Our Performance

We use the Customer Net Promoter Score (NPS) as a feedback mechanism to measure customer loyalty. This and other results from the customer survey allow us to directly understand what our customers are thinking and identify key pain points for action. Because of the importance of customers to SAP, Customer NPS is one of our main KPIs.

In 2021, our Customer NPS[11] increased 6 points year over year to 10 (2020: 4), achieving the upper end of our target range of 5 to 10.

We aim to continue to increase our Customer NPS to a range of 11 to 15 points in 2022. Further, we want to see continuous improvements and increase the score steadily in the medium term.

Customer NPS is a KPI in Executive Board remuneration as part of the short-term incentive component.

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

Related Risks for SAP

For related risks, see *Sales and Services* in the *Risk Management and Risks* section.

[11] As part of a multi-year harmonization process, the survey question used to measure NPS was adjusted in 2021. Therefore, the results may not be fully comparable. For more information, see the *Performance Management System* section.

Employees and Social Investments

Vision and Strategy

People are at the heart of our organization. Aiming for a highly engaged, diverse, future-fit workforce equipped with the right skills helps SAP attract the best talent.

Interwoven with our product and go-to-market strategies, our **People Strategy** is centered around the employee journey and their experience. Just as we help our customers digitalize and simplify their processes, we strive to do the same for our employees by empowering them to bring value to our customers. We continue to evolve and execute along seven strategic pillars from 2020 that contribute to our business strategy and value generation. We summarize this value generation across **three themes**, powered by operational excellence to showcase Human Experience Management:

- **Building the Skills for the Future** by attracting the best and most diverse talent and continuously up-/reskilling our people
- **Driving SAP's Winning Culture** by fostering a culture enabling and rewarding impact and business outcomes
- **Changing the Way We Lead** by driving for accountability and empowerment, in a healthy, inclusive, and diverse environment

Due Diligence

Governance

Since January 1, 2021, **Sabine Bendiek** has served as Chief People Officer and Labor Relations Director and led our HR organization. On July 1, 2021, she also became Chief Operating Officer and has since been responsible for the Executive Board area People & Operations as Chief People & Operating Officer.

To best support our People Strategy, we reshaped our HR organization in 2021 and it now includes the following functional areas: a newly introduced Future of Work team (including Global Health & Well-Being); Global Diversity & Inclusion; SAP Learning; Talent Attraction; and Total Rewards. In addition, Global People Success Services combines the HR Business Partner organization with Global HR Service Delivery.

Guidelines and Policies

SAP is committed to ensuring a fair and equal treatment of all employees in a sustainable manner. For that reason, we established comprehensive policies that guide us in our daily business. Examples are our **Global Anti-Discrimination Policy** and **Global Health & Safety Policy**.

How We Measure and Manage Our Performance

The impact of our people strategy is measured by seven KPIs.[12] Five out of the seven KPIs are based on the results of our engagement survey program "**#Unfiltered**."

With #Unfiltered, we strengthen our commitment to listen regularly to our employees and act together on their feedback. In 2021, we defined strategy, health and well-being, and equality as areas where we increased our focus. We gauged the sentiment on these topics, as well as employee engagement

[12] In the Employees and Social Investments section, the metrics Employee Retention, External Hires, Female External Hires, Headcount, Women in Management, and Women in Workforce include Qualtrics data. All other metrics are reported excluding Qualtrics.

and leadership trust, twice over the year. The average scores from both data collections were used as the full-year Employee Engagement Index and Leadership Trust Net Promoter Score (NPS).

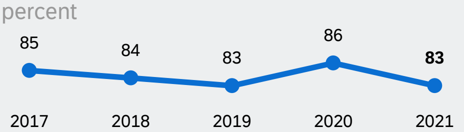
The **Employee Engagement Index**[13] decreased to 83% (–3 pp compared to 2020) and is slightly below our target range. For 2022 through 2025, our ambition remains to keep the Employee Engagement Index score between 84% and 86%. Our **Leadership Trust NPS** reached an all-time high of 67 in 2021 (2020: 62) since its introduction in 2013. For more information about the measurement of leadership trust, see the *Performance Management System* section.

We measure the progress of individual employee and organizational health through the **Business Health Culture Index**[14] (BHCI). In 2021, the BHCI was 81% (2020: 80%) and exceeded the upper end of our target range. For 2022 through 2025, our ambition remains to keep the BHCI between 78% and 80%. We continuously monitor our innovation culture and simplification of processes. We adjusted the composition of both indices to better reflect the dimensions we would like to improve, even though we consider the scores comparable. In 2021, we achieved a very strong **Innovation Culture Index**[15] of 89% (last measured in 2019 based on different survey questions and reported as an Innovation Score of 79%). After a slight dip in 2020 (58%), the **Simplification of Processes Index**[16] rebounded to 66% in 2021, indicating that our investments in this area took effect.

In addition, we measured a **Retention Rate** of 92.8% (2020: 95.3%). We define retention as the ratio of the average number of employees, minus employees who voluntarily departed (excluding restructuring-related terminations), to the average number of employees (in full-time equivalents or FTEs). The rate of **Women in Management**[17] increased to 28.3% compared to 27.5% in 2020. Through 2022, our ambition remains to increase the rate of women in management to 30%.

Our Key People-Related KPIs at a Glance

Employee Engagement Index
percent



83 ↘ –3pp

Leadership Trust
Net Promoter Score

67 ↗ +5pp

Business Health Culture Index
percent

81 ↗ +1pp

Innovation Index
percent

89 ↗ +10pp

Simplification of Processes
percent

66 ↗ +8pp

Employee Retention
percent

92.8 ↘ –2.5pp

Women in Management
percent

28.3 ↗ +0.8pp

Below is an overview of how we put the three themes of our people strategy and overall KPIs into practice.

Building the Skills for the Future

Attracting, hiring, and onboarding the best and most diverse talent is key for the future success of SAP. After a unique 2020 shaped by the global pandemic, in 2021, we saw a significantly increased competition for talent all over the globe. Our refreshed employer value proposition – including a

[13] We define employee engagement as an index score of five items measuring the satisfaction and commitment of our employees, how proud they are of our company, and how strongly they identify with SAP.

[14] The index covers questions concerning how employees rate their personal well-being and the working conditions at SAP, including our leadership culture.

[15] The index consists of four items showing to what extent employees feel encouraged and supported to innovate.

[16] The index consists of seven items showing ease of understanding and use of our processes at SAP.

[17] This includes manager managing teams, manager managing managers, Executive Board members.

stronger focus on "**Early Talents**" (defined as hires with 0–3 years of experience in a professional setting hired into professional roles[18]) and innovation – is key to us attracting people with the right fit.

Despite ongoing challenges due to the pandemic, we were still able to make advancements in building a highly inclusive workforce across various demographic aspects (among others, e.g. generations, gender, nationalities). Overall, we externally hired 13,854 (2020: 8,486) employees, of whom 33.1% (2020: 29.4%) were Early Talents and 38.1% (2020: 35.5%) women.

We strive to position SAP as a talent magnet. SAP has earned 160 (2020: 125) employer recognitions, most notably the **World's Best Workplaces** by Great Place to Work, **World's Most Attractive Employer** by Universum and **LinkedIn Talent Award** – Best Employer Brand by LinkedIn. Additionally, we worked closely with more than 2,700 academic institutions on events, executive lectures, office visits, competitions, student club sponsorships, and workshops to attract students and graduates. Our universal **SAP Internship Experience Program** has continued to expand and now exists in 22 countries with a total of 1,461 (2020: 597) participants around the world. In 2021, more than 1,200 students were enrolled in SAP's vocational training program (in Australia, Brazil, China, Germany, Hungary, India, Ireland, Japan, New Zealand, Singapore, South Korea, Switzerland, and the United States). The conversion rate (number of students who stayed with SAP after completing their dual studies) for vocational training students was 75% in 2021 (2020: 67%).

The average tenure remained at the same high level (2021: 8.0 years; 2020: 7.6 years).

Even when employees leave SAP, it is important that we stay connected. Our **SAP Alumni Network** offers a program to keep our former colleagues connected and foster a trusted network for the benefit of SAP and our ecosystem. In 2021, our alumni community included 14,909 former (2020: 9,096) and 4,379 current (2020: 4,082) SAP employees.

As part of our strategic pillar "building the skills for the future," we focus on our skill transformation. SAP expects a shift in current skills that will cease to exist and new capabilities that will be needed in the future. In some cases, this shift is predictable, while in others it will require an adaptive workforce management approach focusing on continuous skill transformation to ensure our people are equipped to support future work requirements.

At SAP, learning mainly happens on the job, through interactions with colleagues and formal learning activities. Self-paced online programs and live interactive training, including courses for technical, functional, and professional skills, are open to all employees. Our peer-to-peer learning portfolio encompasses coaching, mentoring, job shadowing, and facilitation opportunities. In 2021, 97% of our employees participated in learning and logged more than three million hours of trackable learning. Additionally, 22,574 of our employees went through targeted upskilling programs tied to SAP's cloud journey.

The successful delivery of our strategy also requires a robust succession management process. Therefore, in 2021, we launched a systematic approach focusing on our most critical and highest value-generating roles. It incorporates a clearly defined succession pipeline and targeted development and exposure for incumbents and successors to these roles.

Driving SAP's Winning Culture

With our next-generation performance management approach, we aim to establish a high-performance culture, by linking business goals to the impact of individuals and teams with development opportunities and meaningful reward packages. Smart and transparent goal-setting approaches and continuous review processes, as well as equitable, competitive, and differentiated compensation structures, are a necessary foundation to drive high performance.

It is critical that our employees see the link between their individual contribution and SAP's future success. Early in 2021, SAP's top leadership set goals for their organization and made them visible to

[18] In 2021, we adjusted the definition of Early Talents In the past, the term referred to external hires of graduates with up to two years' professional experience post graduation.

all employees. During a newly established "**People Day**," all employees at SAP were given time to reflect on SAP's strategy and connect their goals and development to our direction. During "**SAP Talk**" dialogues, goals are set and viewed by the employees together with their managers.

To strengthen the link between employees' compensation and SAP's corporate success, we also increased our investment in **Move SAP**, our long-term share-based incentive plan that rewards employees who provide a significant impact to SAP's business success. Another model component of our equity offering is **Own SAP**, a global share purchase plan, where 78% of our employees overall participated with an investment of 5,655,937 shares.

For more information, see the Notes to the Consolidated Financial Statements, *Note (B.3).*

Furthermore, in 2021, we also launched an equity-based **COVID-19 Recognition Plan** for all non-executive employees to recognize their resilience and commitment to business continuity during this difficult period.

Changing the Way We Lead

Strong, future-oriented leadership is key for successfully executing our strategy and becoming more agile, ethical, inclusive, and accountable. To guide our leaders, support their development, and move our organization forward in our journey to the cloud, we began the rollout in 2021 of a refreshed **leadership culture and credo**: "Do what's right. Make SAP better for generations to come." This empowers our leaders to make decisions and holds them accountable while focusing on the future of SAP. Our leadership culture is reinforced by traditional, peer, and experiential learning journeys. These journeys focus on building management, leadership, and cloud skills to promote a shared understanding and reinforce leadership behavior and accountability.

In 2021, we focused on a more consistent enablement of our people managers. We scaled the delivery of our flagship leadership programs, and focused on training on psychological safety across our organization. We report that 29.4% of SAP's people managers have completed these leadership development training sessions.

In addition to our new leadership culture, one further strategic pillar is to pursue an agile, entrepreneurial, healthy, and innovative organization. With the COVID-19 pandemic already into a second year, our environment is changing at an increasing pace and the needs of our customers are shifting quickly. To deliver our business ambitions in this environment, SAP will continue to evolve our organization toward greater agility and innovation. It is our ambition to foster a culture that enables people to run at their best, by providing innovative health and well-being programs and solutions.

Future of Work: In June, the Executive Board announced "**Pledge to Flex**," an SAP-wide commitment that empowers our employees to choose when and where to work best as their roles and tasks allow. Flexibility at work is considered a critical factor to attract and retain talent in the tech industry; Pledge to Flex also strengthens SAP's employer brand. The local implementation of flex work along aligned guidelines and country-specific legal regulations is essential to providing an engaging and collaborative working environment. These activities are complemented by efforts to leverage advanced technologies and new facility concepts in frontrunner locations such as Dublin/Galway, London, Montréal, and Zurich.

Health and Well-Being: When people are healthy, respected, and cared for, it results in greater productivity, engagement, innovation, and customer satisfaction. The global pandemic has enforced changes to societal living that are resulting in increasing trends of mental health challenges and sedentary lifestyles. Listening to employees' feedback in the #Unfiltered survey, we have enhanced health offerings that support a healthy workplace and work culture.

In 2021, SAP's **Global Pandemic Taskforce** continued to coordinate and adjust countermeasures against the pandemic around the globe, utilizing employee feedback based on regular remote pulse checks on how employees experience their individual situation. Another focus was on **COVID-19**

Vaccination Programs in many SAP locations, where we offered vaccinations free of charge to SAP employees, their dependents, and, in some instances, to the general public.

Seeing the need for employees to unplug, April 27, 2021, was dedicated as **Mental Health Day**, a company-sponsored global vacation day for all employees. SAP provided the opportunity for all employees to take the time off for themselves and their families.

In addition, SAP participates in the **Healthy Workplaces Lighten the Load** campaign by the European Agency for Safety and Health at Work, which enables leaders and employees to discover new ways to lighten the load of life's stressors by fostering healthy working and lifestyle habits for good physical and mental health.

Innovation: In support of our entrepreneurial journey, **SAP.iO** accelerates, incubates, and scales startup innovation and explores new business models for SAP. In 2021, the SAP.iO intrapreneurship program continued to help identify high-potential entrepreneurial employees at SAP and was able to jump-start 275 venture ideas, seeking investment by the SAP.iO **Venture Studio**.

Another initiative to foster innovation is the prestigious **Hasso Plattner Founders' Award**. It provides the highest internal employee recognition at SAP, based on the three categories: Go-To-Market, Operational Excellence, and Products and Technology. For 2021, the awards went to "Support Assistant: Delighting Customers by Solving Issues Faster" (Go-To-Market); "Cloud Health Score Based on Machine Learning" (Operational Excellence); and "SAP Information Collaboration Hub for Life Sciences" (Products and Technology). Winners were chosen from 192 nominations, with a total of 1,260 employees participating from 42 countries.

At SAP, we are always striving for inclusion and reflecting the diversity of society. As a global organization with 161 nationalities in our workforce, our aspiration is that SAP's employees mirror the diversity in society that includes the gender parity and demographics of all of the regions where we have employees. With our **Diversity and Inclusion Strategy**, we set our long-term focus to ensure we cover critical areas such as providing inclusive career journeys, creating a culture of inclusive collaboration, and improving our diverse ecosystem through supplier diversity efforts, an inclusive language campaign, and accessibility efforts.

Gender inclusion, advancement, and equality: Currently, SAP's representation of women in the overall workforce is 34.3% (2020: 33.6%), with the representation of women in management roles at 28.3% (2020: 27.5%). We continue to advance workplace equity through promoting inclusive policies on flexible work arrangements, enhanced parental leave benefits, and a focus on fair pay. We are present in the Bloomberg Gender-Equality Index in 2019, 2020, and again in 2021, confirming our commitment to gender equity.

Autism inclusion: The **Autism at Work** program supports a workforce that includes 217 colleagues on the autism spectrum in 16 countries. The **Autism Inclusion Network** is an employee-led network group focused on spreading autism acceptance. The **SAP Autism Inclusion Pledge** extends SAP's autism inclusion endeavors by sharing what we have learned with our customer and partner ecosystem.

Race and ethnicity: Back in 2016, SAP identified challenges with underrepresentation of Black, African American, Latinx, and Native American employees in the workforce. We created reporting to track our progress toward a better representation in accordance with required regulations in different countries and in line with our diversity and inclusion objectives. Among many efforts across the globe, this included the establishment of a new goal kicked off in 2020 to double the share of Black and African American employees in the workforce in the United States within the next three years. Built on the "Equality for All" initiative by the Human Rights Campaign, SAP supported the **Spotlight Black Businesses** program to showcase and promote small Black-owned businesses and introduce them to new audiences.

LGBTQ+ inclusion: SAP was among the first supporters of the United Nations Global LGBTI Standards of Conduct for Business and has been named again the Top #1 employer in Germany's Pride Index. SAP has also been recognized by organizations including the Human Rights Campaign in the United States, the Pride Business Forum in the Czech Republic, and the Swiss LGBTI Label for our inclusion efforts. The employee-driven **Pride@SAP** LGBTQ+ network also celebrated its 20th anniversary in 2021.

In addition, SAP supports numerous global **Employee Network Groups** that offer activities and events from which SAP can help attract and retain people from diverse backgrounds.

Accessibility: SAP is designing a work experience where all employees feel that they belong and can contribute to a culture of equality and inclusion. A major component of this effort is creating accessibility in the workplace that removes barriers for differently abled persons. New technologies, such as eye-tracking are in our focus and will be continuously evaluated and implemented.

Pushing Operational Excellence and Showcasing Human Experience Management to Customers

Delivering engaging experiences for SAP's customers starts with our own workforce. A continued emphasis on operational excellence and experience management is key to delivering our human experience management (HXM) solutions and services efficiently, with both empathy and compliance.

SAP runs **SAP SuccessFactors**-branded solutions as our global software to manage people data. Additionally, the adoption of Qualtrics solutions integrated with SAP SuccessFactors solutions enables us to determine ways to improve the experience of our candidates and employees along the employee journey. Such data insights are the fuel to leverage intelligent technologies such as **SAP Conversational AI** services on our **SAP Careers** site along with **Brilliant Hire by SAP** as a skills and interest-based matching engine for candidates to receive job recommendations from SAP. Our internal HR chatbot provides instant responses to HR-related questions to all SAP employees around the world, 24x7. Machine learning capabilities are leveraged to analyze the skills needed for the future, based on external and internal data sources to provide a decision framework for hiring and learning programs.

Related Risks for SAP

No material risks were identified through our framework which is detailed in the *Risk Management Methodology and Reporting* section.

Headcount and Personnel Expense

As at December 31, 2021, we employed 107,415 full-time equivalent (FTE) employees worldwide (2020: 102,430). This represents an increase in the workforce of 4,985 FTEs (914 thereof from acquisitions) in comparison to 2020. The average number of employees in 2021 was 104,364 (2020: 101,476).

We define headcount in FTE as the number of people on permanent employment contracts, taking into account their staffing percentage. Numbers disclosed in the *Employees and Social Investment* section are based on FTE or headcount. Students, individuals employed by SAP but currently not working for reasons such as maternity leave, and temporary employees on limited contracts of less than six months, are excluded from our figures. The number of temporary employees is not material.

Our average personnel expense for each employee grew to approximately €149,000 in 2021 (2020: approximately €132,000). This increase is primarily due to an increase of share-based payment expenses. The personnel expense for each employee is defined as the overall personnel expense divided by the average number of employees. In 2021, we had 128 restructuring-related terminations (0.1%) compared to 1,037 in 2020 (1%).

For more information about employee compensation and a breakdown of the components of personnel expense, see the Notes to the Consolidated Financial Statements, *Note (B.1)* and *Note (B.2)*.

Social Investments

Vision and Strategy

The pace of innovation and technology progress impacts people, organizations, and communities globally. As a result, the competencies and skills needed for people and businesses to succeed in today's digital world are rapidly changing. Our corporate social responsibility (CSR) strategy puts SAP's purpose to help the world run better and improve people's lives into action. As such, SAP CSR considers issues including the access, adoption, and application of 21st century skills for under-resourced people, communities, and nations, and the acceleration of social enterprises through innovation, adoption of organizational best practices, and market development. SAP CSR has three focus areas that create equitable access to economic opportunity, quality education, and employment:

- Accelerate social business
- Build future skills
- Connect employees with purpose

SAP's CSR strategy is linked to our core business, meaning that we integrate social innovations into our own value chain through, for example, dedicated social procurement initiatives. In addition, we are offering a broad portfolio of corporate volunteering opportunities and pro bono consulting programs to deploy the professional skills of our employees for a good cause..

Governance, Guidelines, and Policies

Our Global Head of CSR leads the global SAP CSR team, which is part of the Marketing & Solutions Board area. SAP has established a **Global CSR Governance Committee** consisting of executive-level representatives from different Board areas at SAP to advise, supervise, and approve the direction of our overall CSR strategy. In addition, Regional CSR Governance Committees advise and approve all major CSR partnerships and efforts with the respective regional SAP CSR lead.

The guidelines in our internal CSR policy aim to ensure lawful, compliant donations and good stewardship of SAP's social investment budget to create a positive, sustainable impact. They articulate our strategic focus areas, set the standards and policies under which we operate, and explain the different roles and responsibilities between global CSR, regional CSR, and line of business activities.

How We Measure and Manage Our Performance

We measure the performance and impact of our CSR engagements and investments regularly and report the following output indicators for all initiatives and regions: number of employees engaged, volunteering projects delivered, lives impacted, engagements with customers and partners, non-profit organizations and social enterprises enabled, and employees on our SAP Together employee engagement and donation platform. In addition, every signature initiative follows a dedicated impact measurement framework and logic model. In 2021, SAP donated €25.5 million.

Focus Area – Accelerate Social Business

SAP provides skills, expertise, products, and financial support to social businesses that, in turn, accelerate their ability to drive sustainable social impact. In 2021, SAP built capacity for over 2,000 innovative non-profit organizations and social enterprises through in-kind contributions of US$1.8 million (€1.58 million)[19].

SAP set out to bring our pro bono consulting to the next level, scaling virtual models that were tested in 2020. For example, SAP and PYXERA Global launched a new program called **Pro Bono for Economic Equity** to support social and racial justice. Through the program, SAP provides expertise via pro bono consulting to help Black-owned businesses and social enterprises address systemic and business challenges. Further, SAP and MovingWorlds launched the **Acceleration Collective**, a support network to help social enterprises grow their organizations and impact, while helping SAP

[19] Exchange rate date: December 31, 2021.

employees develop their leadership and social innovation skills by solving organizational challenges and offering business coaching.

The pandemic accelerated the importance of collaboration and partnerships on a macro level in creating opportunities to build sustainable, resilient value chains. In support of SAP's **5 & 5 by '25** social procurement initiative, SAP continued efforts to build capacity for social enterprises seeking to enter corporate supply chains through MovingWorlds' S-GRID program and engagement with the COVID-19 Response Alliance for Social Entrepreneurs.

Focus Area – Build Future Skills

In 2021, digital skill-building and coding programs trained 119,000 teachers and engaged 3.5 million underserved youth, of which 50% were girls. As part of the multi-stakeholder initiative **Generation Unlimited (GenU)**, SAP and UNICEF have addressed several strategic areas within education since 2019. The partnership continued to equip and empower young people with the 21st century digital and life skills they need to find suitable work. In 2021, SAP became a Founding Member of GenU, with SAP CEO Christian Klein joining the GenU Board. In India, under the umbrella of Code Unnati, SAP announced a partnership with Microsoft called TechSaksham. The program aims to provide 62,000 young graduating women and 1,500 teachers with Industry 4.0 skills for careers in emerging technology by the end of 2022.

Focus Area – Connect Employees with Purpose

In 2021, globally, SAP employees dedicated more than 100,000 volunteer hours, of which 76% were skills-based. SAP Together has 37,741 employees registered and offers 548 virtual volunteering projects. SAP CSR's employee engagement campaign, **Month of Service**, evolved to become **Moments of Service**. The campaign has a renewed focus on learning by offering employees virtual and on-site volunteering opportunities and speaker sessions with inspiring leaders inside and outside SAP. With a focus on year-round volunteering, employees can take action and deepen their understanding of social and environmental issues, what SAP is doing about them, and their capacity to impact as an individual.

Related Risks for SAP

No material risks were identified through our framework which is detailed in the *Risk Management Methodology and Reporting* section.

Audit Scope

The majority of the information in the *Employees and Social Investments* section was not part of the statuatory audit of our combined group management report by our external auditor. Only the quantitative indicators Business Health Culture Index, Employee Engagement Index, Employee Retention, Women in Management, as well as Headcount and Personnel Expense are audited at a reasonable assurance level. For the remaining content of the *Employees and Social Investments* section, our auditor performed a limited assurance engagement.

Energy and Emissions

Vision and Strategy

To bring SAP's purpose of "helping the world run better and improving people's lives" to life, our sustainability activities and programs are aimed at creating positive economic, environmental, and social impact within planetary boundaries. In light of the aggravating climate change impacts and other intensifying global challenges, such as biodiversity loss and population growth, climate action has been put at the top of SAP's corporate sustainability agenda – which was also reconfirmed by the latest conducted materiality analysis.

Our strategy to create positive impact and to address climate action is implemented through a dual approach: (1) **SAP as enabler**: We aim to provide products and services to our customers to reduce their carbon emissions and pave the way towards a low-carbon future together; and (2) **SAP as exemplar**: To live up to our corporate responsibility and to build climate resilience, we strive towards leading by example in SAP's business operations and practices by running our own operations more sustainably.

Due Diligence

Governance

The Executive Board sponsor for sustainability, including climate action, is the SAP CFO. The responsibility for driving SAP's holistic, cross-company sustainability agenda is shared between the core sustainability team and the Sustainability Council, which are both chaired and led by the chief sustainability officer (CSO). The CSO's team coordinates SAP's response to climate change (including assessing and managing climate-related risks through a quarterly risk review, setting reduction targets, measuring and monitoring carbon emissions on a quarterly basis, and embedding sustainability-related initiatives across SAP), while it is the Council members' responsibility to integrate sustainability into the core business of their particular Board area, measure and report on their Board areas' progress, act as an ethical advisory board for the Company, and communicate with internal and external audiences on the business relevance of the topic. This happens in close cooperation with various other departments such as the global procurement organization, which aims to ensure that the Company purchases energy-efficient, sustainable products and services. The global facilities management team designs and operates our facilities based on robust environmental standards such as ISO 14001. Our global cloud services organization considers the optimization of the energy consumption in our data centers, while SAP's IT operations personnel is encouraged to use IT equipment and business software responsibly.

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

Guidelines and Policies

Our global environmental policy provides the core framework for how we manage our environmental impact – in our own operations and with our customers. Updated regularly and approved by the CFO, this policy guides our efforts to reduce our ecological footprint, provide environmental performance transparency, and demonstrate sustainable leadership through transformational strategies. In addition, it helps us to comply with internationally recognized sustainability standards as well as stakeholder expectations, primarily those of customers, investors, and employees.

How We Measure and Manage Our Performance

Our Targets

In 2017, we set our leading environmental target of making our operations carbon neutral by 2025. However, to consider the impact of the COVID-19 pandemic on our carbon emissions, to strive toward a role model position in sustainability, and to maintain our ambition level, we decided to revise and accelerate our carbon neutral target: We now aim to become **carbon neutral in our own operations by 2023** – two years earlier than what we had aimed for thus far.

This target refers to our total net carbon emissions, which are calculated by deducting purchased renewable energy certificates, self-generated renewable energy, and carbon offsets from our gross carbon emissions in the respective reporting period. Our carbon neutral target includes all direct and indirect emissions from running our business (Scope 1 and Scope 2)[20] as well as a selected subset of indirect emissions from our value chain (Scope 3).[21] This objective is key to reducing SAP's own environmental footprint and to combatting climate change – one important step towards contributing to SAP's overarching purpose.

To achieve our carbon neutral target and to track its progress, we have derived annual targets for our internal operational steering. Since the beginning of 2020, these annual targets have been integrated in the Executive Board's short-term performance-based compensation.

Since 2017, we have complied with the requirements of the Science Based Targets initiative (SBTi) and are committed to reducing emissions by 85% by 2050 compared to the base-year level 2016, including our entire Scope 3 value chain emissions such as our products-in-use emissions at our customers. Confirmed by the SBTi in a 2019 reassessment, this target reflects the level of decarbonization required to keep the global temperature increase below 1.5 degrees Celsius compared to preindustrial temperatures. However, to meet a net-zero future, in 2022 we aim to further accelerate our climate ambitions by committing to **achieve net zero across our entire value chain by 2030** in alignment with the SBTi Net-Zero Standard – 20 years earlier than originally planned.

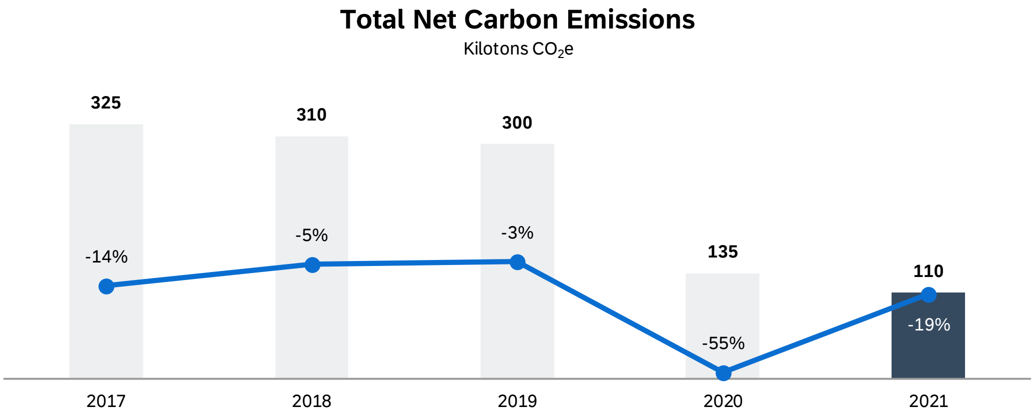
Performance and Measures to Progress

As a result of the ongoing COVID-19 pandemic, as well as the introduction of a more flexible working model at SAP, carbon-intensive business activities, in particular business travel-related activities, increased moderately during the year, but remained at a low level overall. As a result, our carbon emissions have continued to decrease. Even though our employee headcount increased by 4.9%, our net carbon emissions dropped to 110 kilotons[22] (kt), representing a year-over-year decrease of 18.5% (2020: 135 kt). In July 2021, we had already reduced our carbon emissions outlook for 2021 from 145 kt to a range of 90 kt to 110 kt to reflect the expected impact of the COVID-19 pandemic on SAP's business results.

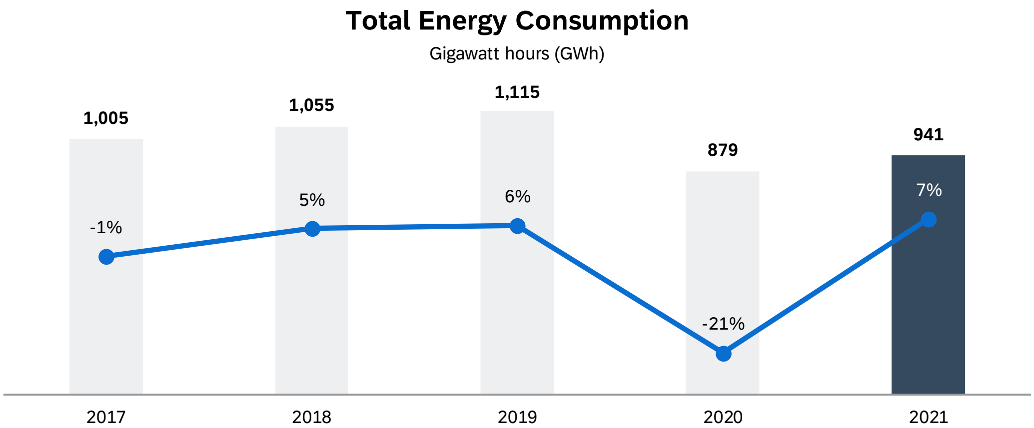
[20] Scope 1 includes: Stationary Combustion and Refrigerants in Facilities, Mobile Combustion and Refrigerants in Corporate Cars, Mobile Combustion in Corporate Jets. Scope 2 includes: Electricity in Offices, Electricity in Data Centers, Purchases of Chilled and Hot Water, Steam.

[21] Scope 3 includes: Rental Cars, Business Flights, Train Travel, Business Trips with Private Cars, Employee Commuting, Electricity External Data Centers, Electricity Used by Hyperscale Services, and Logistics.

[22] We report all our carbon emissions in CO_2 equivalents (CO_2e).



Due to the COVID-19 pandemic and SAP's pledge to flexible, trust-based working styles, electricity consumption in our offices continued to be low as the majority of employees remained in a remote working model. Our total energy consumption[23] remains lower than before the COVID-19 pandemic. However, in light of an increasing external data center electricity consumption (including hyperscale services), the total amount of energy consumption has slightly increased year over year.



Our focus on climate action has contributed to a cumulative cost avoidance of €743.5 million in the past three years. We achieved 55% of this cost avoidance in 2021. Cost avoidance is a financial key figure that indicates the financial benefits of SAP's engagement in sustainability measures compared to a business-as-usual scenario where no sustainability measures have been implemented (base year: 2016).

To become carbon neutral even in times of ongoing growth in our business, we continue to drive our three-pillar strategy of "avoid – reduce – compensate." In 2021, key initiatives following this approach included:

[23] Before 2021, our total energy consumption graph covered direct energy consumption (Scope 1) and selected indirect energy consumption (Scope 2). In 2021, we added indirect energy consumption of our value chain (Scope 3) to all years shown.

Facilities, Data Centers, and Renewable Electricity

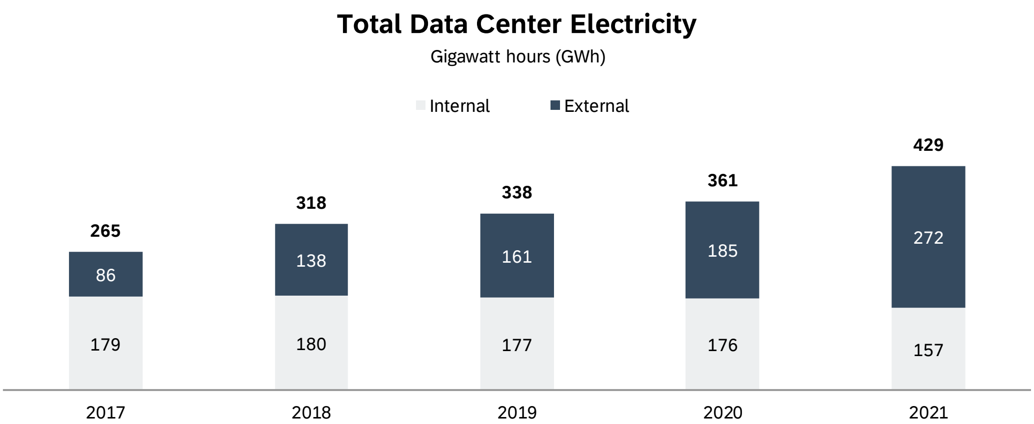
To lead by example and continually improve the environmental footprint of its own operations, SAP has thus far implemented an environmental management system (EMS) at more than 50 sites in around 30 countries worldwide. The EMS is certified by the renowned ISO 14001:2015 standard and successfully maintained its certification in 2021. Its scope will be gradually increased from currently 77% to 100% of SAP's major company-owned sites by 2025. To further increase our energy efficiency, selected sites such as SAP's headquarters in Germany also operate an ISO 50001:2018-certified energy management system.

As more business moves to the cloud, data centers play an increasing key role in SAP providing solutions to our customers. Running solutions on SAP data centers and completing thousands of cloud solution transactions per day requires central processing units (CPUs), memory, storage, and cooling, and therefore electricity – which ultimately results in carbon emissions. This is why our internal data centers have become a primary focus of our carbon reduction efforts.

We have introduced initiatives to drive efficiency and innovation with respect to our buildings, data center operations, and infrastructure (such as the installment of new co-generation units and the replacement of old back-up batteries with more efficient lithium-ion batteries in the data centers in St. Leon-Rot, Germany). At our SAP headquarters in Germany and North America, we operate our own data centers with an efficient power usage effectiveness (PUE) of 1.38. The PUE is a ratio that describes the efficiency of a data center, with 1.0 being the ideal.

In 2014, SAP strengthened the integration of our environmental strategy into our business strategy by creating a "**green cloud**" – running all data centers with 100% renewable electricity.[24] This is one major step towards achieving carbon neutrality and upholding our commitment towards the RE100 initiative. The term "data center" refers to both SAP-owned and external data centers (co-location data centers and hyperscalers).

We realize our green cloud by using two strategic levers: On the one hand, by investing in very high-quality, EKOenergy-certified energy attribute certificates (EACs)[25] to foster renewable energy generation; and on the other hand, by producing renewable electricity in selective SAP locations worldwide through solar panels (such as Palo Alto, CA, in the United States, and Bangalore, India). Operating all our facilities and data centers with 100% renewable electricity allows us to compensate our entire electricity consumption-related emissions (2021: 219.5 kt). This is why customers can reduce their carbon emissions (Scope 3) by using our green cloud solutions and services.



[24] We also run all our SAP office facilities with 100% renewable electricity.

[25] We formerly used the term „Renewable Energy Certificates" (RECs) to refer to Energy Attribute Certificates.

Sustainable Solutions and Products in Use

The vast majority of our overall carbon emissions result from the use of our software. 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, our **SAP Cloud for Sustainable Enterprises** offering bundles a broad portfolio of sustainability-related solutions, such as **SAP Sustainability Control Tower**, **SAP Environment, Health, and Safety Management**, and **SAP Product Footprint Management**, which enable our customers to collect, organize, and report financial and non-financial metrics or to manage their greenhouse gas footprint and resources, such as electricity, more efficiently.

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. In 2021, we started to develop a carbon footprint sizing approach with the aim of enabling our customers to gain transparency on the carbon impact of their SAP applications that run in SAP's internal and external data centers, answering the question of how much our customers can reduce their environmental footprint by running SAP solutions on SAP's green cloud compared to a cloud that is not powered by 100% renewable electricity.

Corporate Cars and Commuting

Consumption of fuel for our company cars remains the single greatest contributor to our direct emissions (Scope 1). To counteract this emission source, SAP released a new commitment in Q4/2021. We aim to enhance our climate protection measures by transitioning our global car fleet to electric or zero-emission[26] vehicles. From 2025 onwards, employees will no longer be able to order vehicles with internal combustion engines (ICEV) or plug-in hybrid electric vehicles (PHEV) as company cars. To ensure a carbon-neutral car fleet reflecting this new commitment, we continue to power all charging stations at SAP locations with 100% renewable electricity. We also continue and strengthen our incentive offers for our employees, for example:

- In selected locations, we offer employees a subsidy to install a charging point at home which deploys the new **SAP E-Mobility** solution to ease billing of the consumed electricity for both car fleet managers and employees.
- In Germany, we offer employees a battery subsidy that partially offsets the higher costs of an electric vehicle, and introduced "Charge at Home," a program to reimburse the employee's electricity costs for charging at home.
- We continuously expand SAP's global charging infrastructure (2021: >970 charging stations; 2020: >900 charging stations).

To generate a shift in alternative commuting habits, we continue to offer a company bike program in Germany, where employees can lease bicycles with the option of purchasing them after three years. In 2021, we expanded the mobility budget pilot to the whole of Germany to foster inter-/multimodal mobility. A pilot group of employees receives a monthly fixed mobility budget at their free disposal to use any mode of transport to commute to work or in their leisure time (bike, e-scooter, rental car, train, bus, and so on).

[26] Zero emission vehicles refer to a vehicle that does not emit exhaust gas or other pollutants from the onboard source of power.

Carbon Offsets

To offset a share of our Scope 1 and Scope 3 emissions that cannot yet be avoided, we invest in different offset schemes with a strategic focus on nature-based solutions to compensate for these emissions (2021: 17.5 kt):

– A key part of SAP's carbon offsetting strategy is the long-term investment in the Livelihoods Carbon Funds (LCF). The funds finance much-needed climate action and sustainable development in developing countries through ecosystem restoration, agroforestry, biodiversity preservation, and clean energy projects. This has generated high-quality carbon offsets certified by internationally recognized and demanding standards (such as the Gold Standard) and improved people's lives. In 2020, SAP committed to invest €3 million in the third LCF and an additional €0.6 million in the first LCF. Due to the strong impact of the COVID-19 pandemic on our carbon emissions, we did not require our financial contribution to the LCF to offset our emissions in 2021. Instead, we used an investment in a nature-based forest project to compensate our emissions, the majority of which was were caused by business flights.

– In 2021, SAP made a US$2 million (€1.76 million)[27] commitment to the LEAF (Lowering Emissions by Accelerating Forest finance) Coalition, a public-private initiative seeking to mobilize US$1 billion to protect tropical forests in joint effort with national and subnational governments and local communities. LEAF issues emission reduction credits (ERCs) to its corporate partners that are verified and validated under the ART's (Architecture for REDD+ Transactions) TREES standard (The REDD+ Environmental Excellence Standard) to ensure high-quality offsets. Due to the ongoing funding process, LEAF does not yet offer carbon offsets.

– In addition to avoiding business flights by investing in virtual collaboration and communication technologies, we charge an internal carbon price for business flights in the majority of countries we travel from, to counterbalance the carbon emissions caused. Since 2016, we invest the collected internal air travel fees in high-quality carbon offsets (such as the Gold Standard) to support climate projects worldwide and compensate the adverse impact of necessary business flights. As a result, this measure has tangibly impacted our progress towards achieving our emission goals.

Investments in sustainable projects and the corresponding carbon offsets represent a unit of reduced, avoided, or removed greenhouse gas emissions.

Furthermore, SAP joined the 1t.org Corporate Alliance in 2021, which mobilizes business leaders to responsibly conserve, restore, and grow trees worldwide while pursuing 1.5 degrees Celsius science-based target. Restored and protected in the right places, trees and forests are invaluable in maintaining planetary stability, slowing climate change, safeguarding biodiversity, and providing critical ecosystem services to people around the world. Thus, SAP added the goal of **planting 21 million trees by the end of 2025** to its comprehensive portfolio of climate measures and carbon-reducing innovations. This will help foster the much-needed transition to a nature-positive and net-zero future. Since 2012, SAP has helped to plant more than 12.2 million trees and is on track to reach its 2025 goal.

[27] Exchange rate date: December 31, 2021.

Related Risks for SAP

We have analyzed climate change risks and their potential impact on our largest office buildings, major data centers, and SAP's workforce. Risk drivers were chosen based on the Intergovernmental Panel on Climate Change (IPCC) reports AR5 and SR15 (that is, rising sea levels, temperature extremes, and tropical storms). The risk assessment was performed in accordance with the SAP Global Risk Management Policy as outlined in the *Risk Management and Risks* section. As part of our last analysis in 2019, no material risks have been identified potentially impacting our business operations, revenue, or expenditure.

Audit Scope

The content of the *Energy and Emissions* section was not subject to the statutory audit of our combined group management report. However, our auditor has performed an independent assurance engagement on the contents of this section. Under this engagement, the quantitative indicators Carbon Emissions (Scope 1 and 2 as well as selected Scope 3 emissions including business flights and employee commuting), Renewable Electricity, and Total Energy Consumed were audited at a reasonable assurance level. For the remaining content of this section, our auditor performed a limited assurance engagement.

Corporate Governance Fundamentals

Corporate Governance Statement

The German Commercial Code, section 315d in connection with section 289f, requires that, as a listed company, SAP SE publishes a corporate governance statement either as part of our management report or on our Web site. The Executive Board and the Supervisory Board of SAP SE issued the Corporate Governance Statement on February 22, 2022, and published it on our Web site at *www.sap.com/corporate-en/investors/governance.*

Changes in Management

Since January 1, 2021, Sabine Bendiek has served as chief people officer and labor relations director and has led the Human Resources organization. In mid-2021, she assumed additional responsibility and became SAP's chief people and operating officer.

In January 2021, SAP announced that Julia White and Scott Russell had been appointed to the Executive Board. On February 1, 2021, Scott Russell took over the Customer Success organization from Adaire Fox-Martin, who departed the Executive Board at the end of January 2021 and left the Company at the end of June 2021. Julia White joined the Executive Board effective March 1, 2021, and took up the newly created Board role of chief marketing and solutions officer.

Information Concerning Takeovers

Information required under the German Commercial Code, sections 289a (1) and 315a (1), with an explanatory report:

Composition of share capital: For information about the composition of SAP SE's share capital as at December 31, 2021, see the Notes to the Consolidated Financial Statements, *Note (E.2).* Each share entitles the bearer to one vote. American depositary receipts (ADRs) representing our shares are listed on the New York Stock Exchange (NYSE) in the United States. ADRs are certificates representing non-U.S. shares and are traded on U.S. stock exchanges instead of the underlying shares. One SAP ADR corresponds to one SAP share.

Restrictions applying to share voting rights or transfers: SAP shares are not subject to transfer restrictions. SAP held [48,924,892] treasury shares as at December 31, 2021 (see the Notes to the Consolidated Financial Statements, *Note (E.2)).* Treasury shares do not carry voting rights or dividend rights or other rights. We are not aware of any other restrictions applying to share voting rights or to share transfers.

Shareholdings that exceed 10% of the voting rights: We are not aware of any direct or indirect SAP SE shareholdings that exceed 10% of the voting rights.

Shares with special rights conferring powers of control: No SAP shareholder has special rights conferring powers of control.

Type of control over voting rights applying to employee shareholders who do not directly exercise their control rights: As with other shareholders, employee holders of SAP shares exercise their control rights in accordance with the law and the Articles of Incorporation. In votes on the formal approval of their acts at the Annual General Meeting of Shareholders, employee representatives on the Supervisory Board, as all other members of the Supervisory Board, are prohibited from exercising the voting rights associated with their shares.

Requirements concerning appointments and dismissals of members of the Executive Board and amendments to the Articles of Incorporation: Conditions for the appointment and dismissal of members of the Executive Board and amendments to the Articles of Incorporation reflect the relevant provisions of applicable European and German law, including Council Regulation (EC) No. 2157/2001 on the Statute for a European Company ("SE Regulation") and the German Stock Corporation Act. Under the Articles of Incorporation, the Executive Board consists of at least two members, who are appointed for a period of not more than five years by the Supervisory Board in accordance with the SE Regulation, articles 39 and 46. The number of members of the Executive Board is decided by the Supervisory Board. Executive Board members may be reappointed for, or their term of office extended by, a maximum of five years. A simple majority of the Supervisory Board members is required for Executive Board appointments. In the event of a tie, the chairperson of the Supervisory Board has the deciding vote. The Supervisory Board can appoint a chairperson of the Executive Board and one or more deputy chairpersons from among the members of the Executive Board. The Supervisory Board can revoke appointments to the Executive Board in accordance with the SE Regulation, article 9, and the German Stock Corporation Act, section 84, if compelling reasons exist, such as gross negligence on the part of the Executive Board member. If the Executive Board is short of a required member, one may be appointed in urgent cases by a court in accordance with the SE Regulation, article 9, and the German Stock Corporation Act, section 85. In accordance with the SE Regulation, article 59, and the German Stock Corporation Act, section 179, an amendment of the Articles of Incorporation requires a resolution of the General Meeting of Shareholders with a majority of at least three-quarters of the valid votes cast. For any amendments of the Articles of Incorporation that require a simple majority for stock corporations established under German law, however, the simple majority of the valid votes cast is sufficient if at least half of the subscribed capital is represented or, in the absence of such quorum, the majority prescribed by law (that is, two-thirds of the votes cast, pursuant to article 59 of the SE Regulation) is sufficient. Section 11 (2) of the Articles of Incorporation authorizes the Supervisory Board to amend the Articles of Incorporation where such amendments only concern the wording.

Power to issue and repurchase shares: The Annual General Meeting of Shareholders on May 12, 2021, granted powers to the Executive Board, subject to the consent of the Supervisory Board, to issue convertible and/or warrant-linked bonds, profit-sharing rights and/or income bonds (or combinations of these instruments), and to grant conversion or option rights in respect of SAP SE shares representing a total attributable portion of the share capital of not more than €100 million secured by a corresponding amount of contingent capital. These powers will expire on May 11, 2026. The Executive Board is also authorized until May 19, 2025, to increase the share capital by not more than €250 million by issuing new shares against contributions in cash and to increase the share capital by not more than €250 million by issuing new shares against contributions in cash or in kind. For more information about the different tranches of authorized capital and the aforementioned contingent capital, see the Articles of Incorporation, section 4.

The Annual General Meeting of Shareholders on May 17, 2018, granted a power to the Executive Board in accordance with the German Stock Corporation Act, section 71 (1)(8), to buy back for treasury on or before May 16, 2023, SAP SE shares attributable in total to not more than €120 million of the share capital. This power is subject to the proviso that the shares repurchased, together with any shares that were previously acquired and are still held by SAP in treasury and any other shares controlled by SAP, must not in total exceed 10% of SAP's share capital. Executive Board powers, such as those described to issue and repurchase stock and to grant rights of conversion and subscription to shares of SAP, are widely followed common practice among German companies such as SAP. These powers give the Executive Board the flexibility it needs, in particular, the option to use SAP shares as consideration in equity investments, raise funds on the financial markets at short notice on favorable terms, or return value to shareholders during the course of the year.

Material agreements with change-of control-provisions: SAP SE has concluded the following material agreements with provisions that take effect in the event of a change of control, whether following a takeover bid or otherwise:

The terms of SAP's syndicated €2.5 billion revolving credit facility include a change-of-control clause. For more information about this syndicated credit facility, see the Notes to the Consolidated Financial Statements, *Note (F.1).* This clause obliges SAP SE to notify the banks in case of a change of control. If, on receiving the notification, banks that represent at least two-thirds of the credit volume so require, the banks have the right to cancel the credit facility and demand complete repayment of the outstanding debt. If no continuation agreement is reached, the credit facility would end and the obligation to repay would become effective at an ascertainable time.

SAP had bonds totaling €9.6 billion and US$0.3 billion outstanding as at December 31, 2021. For more information about SAP's bonds, see the Notes to the Consolidated Financial Statements, *Note (E.3).* Under the terms agreed with the buyers, we are required to notify the buyers, without delay, of any change of control. If there is a change of control and SAP is consequently assigned a lower credit rating within a defined period, buyers are entitled to demand repayment.

Under the terms of our U.S. private placements totaling approximately US$0.87 billion as at December 31, 2021, we are required to offer lenders repayment of outstanding debt if there is a change of control and SAP is consequently assigned a lower credit rating within a defined period. For more information about these private placements, see the Notes to the Consolidated Financial Statements, *Note (E.3).* Lenders would have up to 30 days to accept the offer.

To finance the acquisition of Signavio GmbH and create additional financial flexibility during the COVID-19 pandemic, SAP took out two bilateral bank loans amounting to €0.95 billion and €0.5 billion at the beginning of 2021, both of which were fully outstanding as at December 31, 2021. Both loan agreements contain a change-of-control clause which obliges SAP SE to notify the bank in case of a change of control. On receiving the notification, the bank has the right to cancel the loan agreement and demand complete repayment of the outstanding debt. If no continuation agreement is reached, the loan agreement would end and the obligation to repay would become effective at an ascertainable time.

We have entered into relationships with other companies to jointly develop and market new software products. These relationships are governed by development and marketing agreements with the respective companies. Some of the agreements include provisions that, in the event of a change of control over one of the parties, give the other party a right to consent to the assignment of the agreement or to terminate it.

Change-of-control provisions in Executive Board compensation agreements: Agreements have been concluded with the members of the Executive Board of SAP SE concerning compensation in the event of a change of control. These agreements, which are customary internationally, are described in the Compensation Report. We have no analogous compensation agreements with our other employees.

Business Conduct

Vision and Strategy

In an increasingly complex business environment, making the right decisions and abiding by ethical choices has never been more important. As a company operating in numerous countries across the globe, SAP is required to adhere to strict international legislation that defines acceptable business conduct and practices.

At SAP, we also expect our business practices to not only meet international rules and legal requirements, but to adhere to our internal high standards of ethics and integrity. We understand that our customers expect this as well. SAP's reputation for doing business the right way is one of our most important assets. By striving to make ethical choices and to stay within high bounds of compliance, we aim to continue to grow SAP in a way that encourages and is conducive to compliant and ethical behavior.

Due Diligence

Governance

The **Office of Ethics and Compliance** (OEC) contributes to SAP's success by providing trusted advice to SAP managers, leaders, and employees across the entire business. The OEC strives to advance SAP's business goals by promoting a strong culture of integrity and helping SAP to "Win the Right Way" by providing guidance and training that enables employees to make ethical and compliant choices.

In 2021, our aim to maintain a robust compliance program, based on our corporate values and voluntary commitments, as well as international standards, continued. The OEC team grew for the fourth consecutive year, from 123 employees in 2020 to 142 employees in 2021. The group chief compliance officer (GCCO) continues to report directly to the group CEO.

At SAP, ethical behavior is an integral part of our cultural values that influence our daily decision-making at every level of the business. To help nurture this environment, the OEC's various teams continually address compliance challenges and improve policies, guidelines, systems, and measures related to their implementation.

The OEC has field compliance officers based all around the world, in high-risk and low-risk jurisdictions, and in markets where there are local language needs. Field compliance officers are often the first point of contact for the business regarding compliance matters. In those high-risk countries in which the OEC is not physically represented, the OEC operates a network of compliance stewards drawn largely from either our legal, finance, or human resources (HR) departments. They are equipped to offer advice on specific and straightforward compliance questions, and they work alongside our global network of compliance ambassadors (drawn from all areas of the Company) to amplify compliance messages and provide a further link for local employees to the relevant field compliance officer.

Compliance matters are discussed with senior leadership at quarterly Audit and Compliance Committee meetings as well as during regular touchpoints with Executive Board and Supervisory Board members. Compliance matters are also discussed by the GCCO in quarterly Global Compliance Governance Committee meetings.

Where appropriate, and in response to identified compliance concerns, the OEC engages external counsel and forensic consulting resources to perform corruption risk assessments of high-risk market units. This process also includes a comprehensive root cause analysis for identified risks.

Outside SAP, the OEC regularly exchanges ideas and best practices for compliance processes with relevant peers in the software industry and beyond. In Germany, the OEC participates in the annual

DAX Chief Compliance Officer Round Table. SAP is also a Corporate Member of the Association of Certified Fraud Examiners (ACFE).

Guidelines and Policies

Our **Code of Business Conduct** (CoBC) provides the primary ethical and legal framework within which we conduct business and remain on course for success. It is adapted locally and translated into over 20 languages.

We also expect our partners and suppliers to commit to meeting our high standards of integrity and sustainability. For this reason, we have the SAP Partner Code of Conduct and the SAP Supplier Code of Conduct in place so that partners and suppliers understand what is expected of them.

How We Measure and Manage Our Performance

Enforcing Policies and Guidelines

The CoBC is communicated to employees globally and contains a fundamental set of rules that define how we conduct our business. It sets SAP's standard for our dealings with each other and with customers, partners, competitors, and vendors. All of our employees are bound by it. In 2021, the policy was reviewed and revised. It is now called the Code of Ethics and Business Conduct and was rolled out globally in January 2022.

Communication

The OEC's dedicated communications team promotes a consistent distribution of integrity-related communications, at all levels of the Company – including senior leaders, managers, and front-line employees. Executive Board members and senior leaders regularly host all-hands meetings as well as leadership team meetings and smaller gatherings, which include integrity-focused topics, demonstrating their dedication to ethical business.

All Board areas have re-committed their support for OEC's Compliance Ambassador Program and have nominated employees to participate in it. In 2021, a fourth cohort was introduced, bringing the number of participants from 177 in 2020 to over 500 in 2021. The program is designed to give employees a further point of contact in the business when compliance matters arise. Ambassadors participate in an extensive curriculum of monthly on-boarding sessions over a two-year period and are expected to cascade and transfer information on the importance of compliance and ethics throughout their teams and lines of business.

Quarterly OEC newsletters provide all employees with information on a range of compliance-related topics. We also include at least one business ethics and compliance-related question in our annual employee engagement survey and in company-wide polls throughout the year. Employees can use the SAP One employee portal at any time to access all global policies, guidelines, and additional information. The SAP Compliance mobile app also provides convenient, ongoing access to compliance-related information.

Training Offerings

Our training programs cover topics such as anticorruption and antibribery, competition law, governance for customer commitments, intellectual property, and information security.

Our "Five Pillars of Compliance" online training is mandatory for all employees wherever legally permissible.

Monitoring employee certification of the CoBC for employees worldwide continued. During the 2021 monitoring cycle, a 99.9% certification rate was recorded for permanent SAP employees (excluding newly acquired companies).

Despite restrictions caused by the COVID-19 pandemic, field compliance officers continued to hold training sessions – albeit virtually – for employees across the organization, from customer-facing staff to individuals in supporting roles, such as corporate affairs and marketing.

Compliance Processes

The OEC also evaluates SAP's third-party service providers to check that SAP's compliance standards are met. New suppliers and third parties seeking a partnership with SAP are scrutinized according to a risk-based compliance due diligence process, which is repeated every two years thereafter. Supplier and partner relationships are formally defined in contracts that outline their obligation to abide by SAP's compliance requirements and a "right to audit" clause. The OEC also has a team dedicated to conducting compliance audits of partners and suppliers to assess adherence to SAP's requirements and to identify and address compliance risks.

The OEC's Compliance Monitoring & Analysis (CMA) team monitors the effectiveness of SAP's compliance processes and controls through regular testing of high-risk transactions, identified using a recently introduced data analytics tool developed with PricewaterhouseCoopers GmbH (PwC) and through manual sampling. The CMA team also analyzes findings from investigations and partner audit reports to identify potential enterprise-wide process deficiencies and patterns of misconduct that indicate a compliance risk. The team then conducts root cause analyses on the highest-risk topics and recommends remediation actions to mitigate the risks.

Whistleblower Reporting Tool

In 2021, SAP replaced its existing **whistleblower reporting tool** with one that is independently managed, so that any matters or concerns can continue to be reported easily and anonymously. The new tool – Speak Out at SAP – is available both internally to SAP employees and externally to concerned parties.

Reports may be submitted either directly by the reporter through the tool, or through the multilingual call center by an agent acting on the reporter's behalf. In all cases, SAP continues to operate a strict non-retaliation policy.

Investigating Misconduct

Where appropriate, the OEC engages the assistance of an external law firm when investigating conduct that may violate antibribery and anticorruption laws.

For more information about the material allegations currently being investigated by the OEC, see the Notes to the Consolidated Financial Statements, *Note (G.3)*.

Related Risks for SAP

The actions and processes to address risks in business conduct are described above. For related risks, see also *Ethical Behavior* in the *Risk Management and Risks* section.

Audit Scope

The content of the *Business Conduct* section was not subject to the statutory audit of the combined group management report. However, our external auditor performed an independent limited assurance engagement for the content of this section.

Human Rights and Labor Standards

Vision and Strategy

SAP is committed to respecting and promoting human rights across our operations, extended supply chain, and product lifecycle, and we are guided by the United Nations (UN) Guiding Principles on Business and Human Rights in doing so. We also expect all of our business partners to respect human rights and avoid complicity in any abuse.

Due Diligence

Governance

Our cross-company agenda on human rights is driven by SAP's Sustainability team. In 2021, we established a new project organization to respond to increasing legal requirements such as the German Supply Chain Due Diligence Act. The project organization comprises executives and employees from various Executive Board areas who embed human rights due diligence in their areas of responsibility. We regularly consult experts from academia, civil society, and industry in our external **Sustainability Panel** on how SAP can generate the greatest positive social impact.

The **Artificial Intelligence (AI) Ethics Steering Committee** guides our internal efforts to implement and enforce AI ethics in our operations and policies. It comprises SAP executives from all Executive Board areas with supervision of topics relevant to guiding and implementing AI ethics. Also made up of experts from academia, industry, and public policy, our external **AI Ethics Advisory Panel** advises us on how to further develop and operationalize our guiding principles for AI.

Guidelines

We support the Universal Declaration of Human Rights; the Organization for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises; and the International Labor Organization Declaration on Fundamental Principles and Rights at Work. The **SAP Global Human Rights Commitment Statement** is our public commitment to respecting and promoting human rights across our value chain. Overseen by our chief sustainability officer and approved by our Executive Board, the current version of the Human Rights Commitment Statement is available at *www.sap.com/corporate-sustainability.*

How We Measure and Manage Our Performance

Assessing Human Rights Measures

To assess our human rights measures, we consider legal requirements, performance ratings, audit results, and stakeholder feedback. For example, since 2012, we have conducted regular internal audits to help us verify that subsidiaries adhere to human rights standards, and check whether employees feel empowered to raise concerns.

At the end of 2021, we started a labor audit at SAP China, whereby we reviewed labor conditions, wages and hours, health and safety, environmental management system, and business practices. The audit has been subject to finalization in the first quarter of 2022. We plan to adapt our global internal audit program based on recent legal requirements.

Employees

Our employees receive training on human rights issues most relevant to SAP. For example, they are trained on our policies on discrimination, health and safety management, and data protection and privacy.

We encourage all employees, including groups at heightened risk of becoming disadvantaged or marginalized (also called “vulnerable groups”) such as temporary external staff, to report conduct that violates our policies. Employees can reach out to their managers, HR officers, compliance officers, or colleagues who are trained to be part of our internal mediation pool. Our **global ombudsperson** also receives employee complaints and mediates fair settlements as well as helps our Executive Board analyze HR-related complaints and issues. Our complaints mechanisms (for example, our **Speak Out at SAP** tool) are also accessible to external groups.

Suppliers and Partners

We expect suppliers and partners to respect human rights, and our codes of conduct require them to uphold labor rights and provide a safe and healthy work environment for all employees.

For more information, see the *Sustainable Procurement* section.

Product Development

We seek to respect human rights throughout the product lifecycle – from design through development to use. Protection of personal information and accessibility are key areas of focus.

For more information, see the *Security, Data Protection, and Privacy* section.

Our innovative solutions help customers embed human rights standards into their own business. For example, they can use the **SAP Ariba Supplier Risk** solution to gain the intelligence and transparency to understand human rights risks within their supply chains.

AI Ethics

To steer the ethical development, deployment, and sale of our AI solutions, we created SAP’s **Guiding Principles for Artificial Intelligence** that we continue to evaluate and update in conjunction with an external advisory panel. Our guiding principles are an evolving reflection on the challenges of AI in an everchanging technological landscape. In January 2022, we rolled out a **Global AI Ethics Policy** to help ensure that our AI systems are developed, deployed, and sold in line with the ethical standards laid out in our guiding principles.

Related Risks

No material risks were identified through our framework which is detailed in the *Risk Management Methodology and Reporting* section.

Audit Scope

The content of the section *Human Rights and Labor Standards* was not subject to the statutory audit of the combined group management report. However, our external auditor performed an independent limited assurance engagement for the content of this section.

Risk Management and Risks

Our Risk Management

Internal Control and Risk Management Systems

As a global company, SAP is exposed to a broad range of risks across our business operations. Consequently, our Executive Board has established comprehensive internal control and risk management structures that enable us to identify and analyze risks early and take appropriate action. Our internal control and risk management systems are designed to identify potential events that could negatively impact the Company and to provide reasonable assurance regarding the operating effectiveness of our internal controls over our financial reporting.

These systems comprise numerous control mechanisms and are an essential element of our corporate decision-making process; they are therefore implemented across the entire Group as an integral part of SAP's business processes. We have adopted an integrated internal control and risk management approach to help maintain effective global risk management while also enabling us to aggregate risks and report on them transparently.

In addition, we have a governance model in place across the internal control and risk management systems to ensure both are effective, as well as a central software solution to store, maintain, and report all risk-relevant information.

Legal and Regulatory Requirements

Due to our public listings in both Germany and the United States, we are subject to both German and U.S. regulatory requirements that relate to internal controls and risk management over financial reporting, such as provisions in the German Stock Corporation Act, section 91 (2), and the U.S. Sarbanes-Oxley Act (SOX) of 2002, specifically sections 302 and 404. Hence, our Executive Board has established an early warning system (risk management system) to enable compliance with applicable regulations.

Risk Management Policy and Framework

The risk management policy issued by our Executive Board governs how we manage risk in line with the Company's risk appetite and defines a methodology that is applied uniformly across all parts of the Group.

Risk Management Pillars

Our risk management system is based on the framework published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) entitled "Enterprise Risk Management – Integrating with Strategy and Performance." Updated in 2017, this framework is built on four pillars, which include a global risk management governance framework, a dedicated risk management policy, a global risk management organization, and a standardized risk management methodology.

In accordance with the COSO framework, SAP's enterprise risk management covers risks in the areas of strategy, operations, finance, and compliance which also covers ethical behavior, corporate governance, and sustainability.

Our Global Risk Management Governance Framework

The risk management governance framework at SAP represents a comprehensive system of approaches and processes to ensure control through a clearly structured risk management system and a supporting risk culture. The risk culture is considered the basis of SAP's risk management system. Risk culture at SAP comprises a system of values, beliefs, knowledge, attitudes, and understanding concerning risks and risk management as part of our corporate culture. To support and continuously foster SAP's risk culture, we conduct risk activities for the entire SAP organization such as mandatory training in ethical behavior, code of conduct, and risk management.

Our Executive Board is responsible for ensuring the effectiveness of the internal control system and the risk management system. The effectiveness of both systems and their implementation in the different Board areas is monitored by each Executive Board member. The Audit and Compliance Committee of the Supervisory Board regularly monitors the effectiveness of SAP's internal control and risk management systems. Our Global Risk & Assurance Services (GR&AS) organization regularly provides a status update on the internal control and the risk management systems to the Audit and Compliance Committee of the Supervisory Board. Every year, SAP's external auditors assess as to whether the SAP Group early-warning system for risk detection is adequate to identify risks that might endanger our ability to continue as a going concern. Additional assurance is obtained through the external audit of the effectiveness of our system of internal controls over financial reporting.

Our Global Risk Management Policy

The risk management policy, updated in June 2021, stipulates responsibilities for conducting risk management activities and defines reporting and monitoring structures. Our global SAP risk management policy clearly states that each employee is responsible for active engagement in the risk management process as well as for the continuous identification of risks, based upon clear rules of engagement in adherence to the policy. The risk management system primarily analyzes risks. Opportunities are assessed or analyzed where it is deemed appropriate.

Our Global Risk Management Organization

Our global risk management organization is responsible for the implementation of a Group-wide effective risk management system. Furthermore, GR&AS is responsible for the regular maintenance and implementation of our risk management policy, as well as the standardized internal and external risk reporting.

All GR&AS risk managers, working with assigned risk contacts in the relevant business units, identify and assess risks associated with material business operations using a uniform approach and monitor the implementation and effectiveness of the measures chosen to mitigate risks.

Further financial risk management activities are performed for example by our Global Treasury and Global Tax departments. General legal risks are managed by the Global Legal department. Sanction and embargo-related risks are managed by the Export Control department, harassment and other HR-related issues by our Global Labor & Employee Relations Office, security-related risks by our SAP Global Security Office, and IP risks by our Global IP Office. All risks are tracked, maintained, and reported within SAP's risk management system.

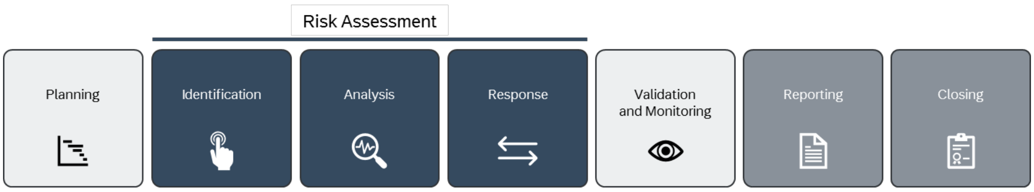
During the merger and acquisition and post-merger integration phase, newly acquired companies are subject to risk management performed by our Corporate Development M&A function. Furthermore, for as long as the newly acquired companies are not integrated, existing risk management structures are maintained or enhanced within the acquired companies for the purposes of compliance with legal requirements.

The exposure of SAP business units to potential compliance risks is reviewed on a regular basis. Quantitative and qualitative internal data as well as external information, such as the Transparency International Corruption Perceptions Index, are considered in our wider compliance risk analysis. Based on this information, we performed a detailed assessment for all SAP-relevant high-risk countries and derived local as well as global mitigations.

The GR&AS unit, led by the Chief Risk Officer, also acting as chief audit executive, combines internal audit, SOX, internal controls and global governance, risk, and compliance. The Chief Risk Officer reports to our Group CFO and is responsible for SAP's internal control and risk management programs.

Risk Management Methodology and Reporting

The illustration below describes the key elements of the risk management process under SAP's risk management policy.



Risk Planning

Based on SAP's risk management policy and framework, the risk planning phase serves to align on the definition and assignment of roles and responsibilities, the definition of risk-relevant business activities (such as processes, projects or other aspects affecting Company assets), the determination of objectives and value drivers, the planning of risk assessments, and the determination of adequate information flow.

Risk planning and risk identification for internal and external risks are conducted jointly by GR&AS risk managers and the relevant business units or SAP entities.

Risk Assessment

A risk assessment covers the identification and analysis of a risk, as well as the determination of a response to that risk. We use various approaches to identify risks. For example, we have identified risk indicators and have developed a comprehensive risk catalog that includes risk mitigation strategies. Risk identification takes place at various levels of our organization to ensure that common risk trends are identified and end-to-end risk management across organizational borders is enabled. We apply both qualitative and quantitative risk analyses and other risk analysis methods such as sensitivity analyses and simulation techniques.

To determine which risks pose the greatest threat to the viability of the SAP Group, we classify them as high, medium, or low based on the likelihood that a risk will occur within the assessment horizon and the impact the risk would have on SAP's business objectives if it were to occur.

The scales for measuring these two indicators are given in the following tables.

Probability/Likelihood of Occurrence	Description
1% to 19%	Remote
20% to 39%	Unlikely
40% to 59%	Likely
60% to 79%	Highly Likely
80% to 99%	Near Certainty

The period for analyzing our risks correlates with that of the respective associated business activities, considering a relevant forecast horizon. The period for analyzing risks that could be possible threats to the Group's ability to continue as a going concern is eight rolling quarters.

Impact Level	Impact Definition	Impact
Insignificant	Negligible negative impact on business, financial position, profit, and/or cash flows	From €0 to €25 million
Minor	Limited negative impact on business, financial position, profit, and/or cash flows	From €25 million to €50 million
Moderate	Some potential negative impact on business, financial position, profit, and/or cash flows	From €50 million to €100 million
Major	Considerable negative impact on business, financial position, profit, and/or cash flows	From €100 million to €500 million
Business-Critical	Detrimental negative impact on business, financial position, profit, and/or cash flows	From €500 million

The combination of the likelihood that a risk will occur and its impact on SAP's reputation, business, financial position, profit, and/or cash flows leads to a subsequent classification of the risk as either "high," "medium," or "low."

Probability	Insignificant (€0 to €25 million)	Minor (€25 million to €50 million)	Moderate (€50 million to €100 million)	Major (€100 million to €500 million)	Business-Critical (From €500 million)
80% to 99%	L	M	H	H	H
60% to 79%	L	M	M	H	H
40% to 59%	L	L	M	M	H
20% to 39%	L	L	L	M	M
1% to 19%	L	L	L	L	M

Impact

L = Low Risk　M = Medium Risk　H = High Risk

In the final stage of the risk assessment, after identifying and analyzing the risk, we determine a response for each identified risk. We have different response categories such as mitigating, retaining for research, transferring, delegating, accepting, or avoiding, for example, by deciding not to start or not to continue the activity that may lead to a risk.

Risk Validation and Monitoring

Risk assessment is followed by risk validation and risk monitoring. The risk exposure and the risk description, as well as the appropriateness of agreed responses, are validated by the accountable management. Our GR&AS risk managers work in close cooperation with the relevant business owners, ensuring that strategies are implemented to address identified risks. Business owners are responsible for continuously monitoring the risks and associated mitigation strategies, with support from the respective GR&AS risk managers. To ensure greater risk transparency and enable appropriate decision-making for business owners, we have established a risk delegation of authority (RDOA) for relevant parts of the organization as deemed appropriate. RDOA is a risk management decision-making hierarchy that helps business owners gain timely insight into business transactions that pose the greatest risk, so that they are better able to review the relevant information, understand the risk profile and associated mitigation strategies, and determine whether their approval is warranted. Depending on the exposure, approval is required at various levels of the Company, up to and including the Executive Board.

Risk Reporting

All identified and relevant risks are reported at local, regional, and global levels in accordance with our risk management policy and the global risk reporting standard. At these levels, we have established executive risk councils that regularly discuss risks and responses and that monitor the success of risk mitigation. In addition, the Executive Board is informed regularly about individual risks based on clearly defined qualitative reporting criteria. Newly identified or existing risks that are above a defined threshold, meet a qualitative criterion, or have a potential significant impact are also reported to the Audit and Compliance Committee and the chairperson of the Supervisory Board on a quarterly basis. This includes risks along our strategic portfolio for services and solutions as well as any risks to our ability to continue as a going concern, the latter supported by a process that analyzes those risks with respect to potential effects on liquidity, excessive indebtedness, and insolvency.

Risk Closure

Risks are closed once a reassessment concludes that a risk is no longer existent or does not require continued monitoring. Risk closure criteria include the risk event occurring, the risk no longer being considered a risk, or the risk having been successfully mitigated.

Internal Control and Risk Management System for Financial Reporting

The purpose of our system of internal control over financial reporting is to provide reasonable assurance that our financial reporting is reliable and compliant with generally accepted accounting principles. Because of the inherent limitations of internal control over financial reporting, it might not prevent or bring to light all potential misstatements in our financial statements.

Our internal control system consists of the internal control and risk management system for financial reporting (ICRMSFR), which also covers the broader business environment and is part of the overall risk management system of SAP. Using the current COSO Internal Control – Integrated Framework of 2013, we have defined and implemented internal controls along the value chain on a process and subprocess level to ensure that sound business objectives are set in line with the organization's strategic, operational, financial, and compliance goals.

SAP's ICRMSFR is based on our Group-wide risk management methodology. It includes organizational, control, and monitoring structures designed to ensure that data and information concerning our business is collected, compiled, and analyzed in accordance with applicable laws and properly reflected in our IFRS Consolidated Financial Statements.

Our ICRMSFR also includes policies, procedures, and measures designed to ensure compliance of SAP's financial reports with applicable laws and standards. We analyze new statutes, standards, and other pronouncements concerning IFRS accounting and its impact on our financial statements and the ICRMSFR. Failure to adhere to these would present a substantial risk to the compliance of our financial reporting. Finally, the ICRMSFR has both preventive and detective controls, including, for example, automated and non-automated reconciliations, segregated duties with two-person responsibility, authorization concepts in our software systems, and corresponding monitoring measures.

Our Corporate Financial Reporting (CFR) department codifies all accounting policies in our Group accounting and global revenue recognition guidelines. These policies and the corporate closing schedule, together with our process descriptions, define the closing process. Under this closing process, we prepare, predominately through centralized or external services, the financial statements of all SAP entities for consolidation by CFR. CFR and other corporate departments are responsible for ensuring compliance with Group accounting policies and monitor the accounting work. CFR also conducts reviews of our accounting processes and books. The employees who work on SAP's financial reporting receive training in the respective policies and processes.

We have outsourced some tasks, such as valuing projected benefit obligations and share-based payouts, quarterly tax calculations for most entities, and purchase price allocations in the context of asset acquisitions and business combinations, and the local statutory financial statements for a few of our subsidiaries. These outsourced tasks are subject to the same stringent requirements that are mandated for all of our internally generated financially relevant information.

Based on an analysis of the design and operating effectiveness of our respective internal controls over financial reporting, a committee presents the results of the assessment on the ICRMSFR effectiveness with respect to our IFRS consolidated financial statements as at December 31 each year to our Group

CFO. The committee meets regularly to set the annual scope for the test of effectiveness, to assess and evaluate any weaknesses in the controls, and to determine measures to address them timely and adequately. The Audit and Compliance Committee of the Supervisory Board regularly scrutinizes the resulting assessments of the effectiveness of the internal controls over financial reporting with respect to the IFRS consolidated financial statements.

The assessment, conducted by SAP and external audit, of the effectiveness of the ICRMSFR related to our IFRS consolidated financial statements concluded that, on December 31, 2021, the Group had an effective internal control system over financial reporting in place.

Additionally, and in compliance with German commercial law requirements, SAP maintains an internal control system beyond financial reporting. This is supported through automated controls (continuous control monitoring) as part of our business processes.

Supporting Software Solution

We use our own risk management software, namely SAP Governance, Risk, and Compliance (GRC) solutions powered by SAP HANA, to support the governance process. GR&AS risk managers record and track identified risks using our risk management software online and in real time to help create transparency across all known risks that exist in the Group, as well as to facilitate risk management and the associated risk reporting. This GRC solution also supports the risk-based approach of the ICRMSFR. Our continuous control monitoring activities are performed utilizing our GRC software as well. This information is available to managers through direct access to our SAP Fiori application for enterprise risk reporting, and in regularly issued reports, and is consolidated and aggregated for the quarterly risk report to the Executive Board.

Risk Factors

The following sections outline our risk categories and risk factors that we have identified and continuously track. To further streamline our integrated report, we disclose material and relevant risks and focus on “major” and “business-critical” risk factors as per our assessment. Thus, the following risk factors are not included in the Integrated Report 2021 as they do not currently fall into either the “major” or “business-critical” category: Corporate Governance; Sustainability; Taxation; Sales and Revenue Conditions; Liquidity; Use of Accounting Policies and Judgment; Currency, Interest Rate, and Share Price Fluctuation; Insurance and Venture Capital; Unauthorized Disclosure of Information; Investor Relations; Corporate Affairs; Marketing; Corporate Development; Portfolio; SAP Strategy; Cloud Operations; Human Workforce; and Government Security & Secrecy.

Despite the ongoing COVID-19 pandemic, SAP has been able to take effective measures to mitigate the risks arising from it. There has been no significant disruption to business operations or adverse effects on revenues, with some savings in operating expenses. While monitoring continues, we expect the remaining impact of the pandemic to be insignificant, and estimate the probability of occurrence of material risks of this risk factor to be remote.

The table below provides an overview of major and business critical risk categories (together with the respective risk factors). Therein, risk factors are categorized with their net value (after the implementation of mitigations) according to our framework that is detailed in the *Risk Management Methodology and Reporting* section.

Overview of Risk Factors (Aggregated Statement for 2021)

	Probability	Impact	Risk Level
Economic, Political, Social, and Regulatory Risks			
Global Economic and Political Environment	Likely	Major	Medium
International Laws and Regulations	Unlikely	Business-Critical	Medium
Legal and IP	Likely	Major	Medium
Data Protection and Privacy	Likely	Major	Medium
Corporate Governance and Compliance Risks			
Ethical Behavior	Likely	Major	Medium
Operational Business Risks			
Sales and Services	Unlikely	Major	Medium
Partner Ecosystem	Likely	Major	Medium
Cybersecurity and Security	Likely	Business-Critical	High
Technology and Products	Likely	Major	Medium
Strategic Risks			
Market Share and Profit	Unlikely	Business-Critical	Medium
Mergers and Acquisitions	Unlikely	Major	Medium
Innovation	Unlikely	Major	Medium

Economic, Political, Social, and Regulatory Risks

Global Economic and Political Environment: Uncertainty in the global economy, financial markets, and social and political instability caused by state-based conflicts, terrorist attacks, civil unrest, war, or international hostilities could lead to disruptions in our business.

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 global economy as well as on our business.

We are subject to risks and associated consequences in the following areas, among others:

- General economic, political, social, environmental, public health, and market developments, and general unrest
- Prolonged deterioration of global economic conditions (impact on accurate forecast) or budgetary constraints of national governments
- Diplomatic confrontations, frictions, trade or tariff conflicts with potential global implications as indicated by a prolonged and widespread economic slowdown
- Financial market volatility episodes, global economic crises, 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 foreclosures and bankruptcies among customers, business partners, and key suppliers
- Terrorist attacks or other acts of violence, civil unrest, pandemics, or natural disasters, impacting our business
- Regional conflicts, which may affect data centers as critical infrastructure assets

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– Ongoing shift to a higher share of cloud subscriptions and software support revenue streams, which will lead to more predictable revenue streams over time, providing increased stability against financial volatility
– Internal cost discipline and a conservative financial planning
– Reshaping of our organizational structure and processes to increase flexibility and efficiency
– Monitoring and evaluation of global and political developments, supported by our global government affairs unit, to share insights and provide guidance to allow for proactive preparation and timely mitigation

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. Such occurrence could exacerbate the other risks we describe in this report or cause a negative deviation from our revenue and operating profit target. We classify this risk factor as medium.

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.

The SAP Group has a global presence and operates in most countries of the world. 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 of countries we operate in.

Our business is subject to numerous risks inherent to international business operations. We are subject to risks and associated consequences in the following areas, among others:

– Changes in tax laws and changes in the interpretation of the complex tax rules in certain countries, impacting our business situation, financial condition, and results of operations
– Changes in external reporting standards and tax laws including, but not limited to, conflict and overlap among tax regimes as well as the introduction of new tax concepts that harm digitalized business models
– Discriminatory, protectionist, or conflicting fiscal policies and tax laws
– Workforce restrictions and travel bans resulting from changing laws and regulations, from political decisions, 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, counter or even conflicting sanctions, and embargoes including, but not limited to, country-specific software certification requirements
– Violations of country-specific sanctions
– Compliance with and stringent enforcement of laws and regulations (including interpretations), implications of government elections, lack of reforms, data protection and privacy rules, regulatory requirements and standards (such as the Payment Card Industry Data Security Standard [PCI DSS]), other compliance requirements (such as Service Organization Controls [SOC]), or sometimes even country-specific certifications or requirements in particular for cloud service provider or data center operations

- Expenses associated with the localization of our products and compliance with varying and potentially conflicting local regulatory requirements

As we expand into new countries and markets 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 continue 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.

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

- We continuously monitor new and increased regulatory requirements, updated or new enforcement trends, and publicly available information on compliance issues in the computer software industry, in the emerging markets where we invest our resources, and in the business environment in general to cope with an increase in regulation enforcement efforts of certain countries or state-driven protectionism.
- We continuously invest and strive to improve, harmonize, and standardize our global processes, procedures, and solutions to increase our efficiency and effectivity in meeting the various legal requirements to ensure compliance, while also utilizing scenario impact analyses.
- We have established a dedicated unit within our Global Legal organization that proactively assesses newly emerging regulatory initiatives, advises internal departments on these initiatives, and supports their swift adherence thereto.
- We receive guidance from external economic consultants, law firms, tax advisors, and authorities in the concerned countries, and take legal actions when necessary.
- We engage with authorities on public policy issues, including the creation of reasonable framework conditions for new technologies such as cloud computing, Big Data, artificial intelligence, the Internet of Things (IoT), and for international trade.
- We conduct audits based on various audit standards on a regular basis to identify and remediate issues early on.
- We have a legal and compliance office presence in various countries, with compliance safeguards supported and monitored by our Office of Ethics & Compliance (OEC), a team of dedicated resources who are tasked with managing our policy-related compliance measures.
- We maintain a data protection and privacy office and associated policy.
- We continue efforts to strengthen the Export Control team and continue with our cross-Board project to overhaul SAP's export control and trade sanctions policies, operations, and controls, to safeguard compliance with applicable EU and U.S. laws in all delivery channels both on premise and in the cloud.
- We regularly update and enhance our compliance programs to improve our effectiveness and to ensure that our employees understand and comply with the SAP Code of Business Conduct (CoBC). This process is coordinated by the OEC.

– OEC coordinates and provides guidance on implementation, training; and enforcement efforts with respect to compliance-related policies throughout SAP, including but not limited to the Third-Party Sales Commission Policy and accompanying training.

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be business-critical. We estimate the probability of occurrence to be unlikely. We classify this risk factor as medium.

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, or if we are unable to protect or enforce our own intellectual property, may result in adverse outcomes.

We have in the past and believe that we will continue to be subject to claims and lawsuits, including intellectual property infringement claims, as our solution portfolio grows; as we acquire companies with increased use of third-party code including open source code; as we expand into new industries with our offerings, resulting in greater overlap in the functional scope of offerings; and as non-practicing entities that do not design, manufacture, or distribute products assert intellectual property infringement claims.

Moreover, protecting and defending our intellectual property is crucial to our success. The outcome of litigation and other claims or lawsuits is intrinsically uncertain.

We are subject to risks and associated consequences in the following areas, among others:

– Claims and lawsuits might be brought against us.
– We might become 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 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.

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 a material adverse effect on our reputation, brand, business, competitive or financial position, financial performance, 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 party’s products.

The outcome of litigation and other claims or lawsuits is intrinsically uncertain. Management’s view of the litigation might also change in the future. Actual outcomes of litigation and other claims or lawsuits could differ from the assessments made by management in prior periods, which are the basis for our accounting for these litigations and claims under IFRS.

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– Our OEC sets and manages internal policies related to our CoBC.
– Our GR&AS organization works closely with the OEC and Global Legal and is jointly responsible for the management and reporting of potential risks associated with third-party intellectual property.
– We have established various internal programs, such as internal policies, processes, and monitoring, to assess and manage the risks associated with open source, and third-party intellectual property.
– We endeavor to protect ourselves in the respective third-party software agreements by obtaining certain rights in case such agreements are terminated.
– We are party to certain patent cross-license agreements with third parties, which removes the risk of litigation with respect to the involved patents.
– We rely on a combination of the protections provided by applicable statutory and common law rights, including trade secret, copyright, patent, and trademark laws, license and non-disclosure agreements, and technical measures to establish and protect our proprietary rights in our products and customer projects.

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. We classify this risk factor as medium.

We are named as a defendant in various legal proceedings for alleged intellectual property infringements. For more information and a more detailed report relating to certain of these legal proceedings, see the Notes to the Consolidated Financial Statements, *Notes (A.4)*, *(C.5)*, and *(G.3)*.

Data Protection and Privacy: Non-compliance with increasingly complex and stringent, sometimes even conflicting, applicable data protection and privacy laws or failure to 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.

As a global software and service provider, SAP is required to comply with local laws wherever it does business. One of the relevant European data protection laws is GDPR. International data transfers to third countries that do not provide for an adequate level of data protection require additional safeguards to justify a transfer from the EU to a third country based on the standard contractual clauses. In 2021, SAP experienced two significant incidents in processing personal data – on our own behalf – that were subject to GDPR only and were reported to the supervisory authorities.

Furthermore, evolving regulations and laws globally (such as the California Consumer Privacy Act, the Brazilian General Data Protection Law, and the EU's proposed e-Privacy Regulation including data localization requirements) regarding data protection and privacy or other standards increasingly aimed at the use of personal data, 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 refers to a compliant use of new technology, such as machine learning (ML) and AI for product development and deployment of intelligent applications.

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

Non-compliance with applicable data protection and privacy laws by SAP or any of the subprocessors engaged by SAP within the processing of personal data could lead to risks. We are subject to risks and associated consequences in the following areas, among others:

– 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 subprocessors

– Damage claims by customers and individuals or contract terminations and potential fines

– Harm to SAP's reputation

– Increased complexity in times of digitalization with regard to legal requirements in the context of cross-border data transfer and data localization requirements

In addition, the German Federal Office for the Protection of the Constitution and security industry experts continue to warn of risks related to a globally growing number of cybersecurity attacks aimed at obtaining or violating company data including personal data. We anticipate cyberattack techniques to continue to evolve and increase in sophistication, which could make it difficult to anticipate, prevent, detect, and mitigate attacks and intrusions, thus leading to, for example, risks described in the *Cybersecurity and Security* section.

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– We have implemented internal processes and measures to enable SAP to comply successfully and sufficiently with applicable data protection requirements.

– We have anchored data protection requirements in the mandatory product standards of SAP's product development lifecycle.

– We continuously review SAP's existing standards and policies to address changes to applicable laws and regulations.

– We continuously enhance our data center operations worldwide, also considering local and sector-specific market and legal requirements. For compliance with local legal requirements, we have established a network of local and regional data protection and privacy coordinators.

– We have a data protection management system in place in all our Board areas. Furthermore, this data protection management system will be continuously enhanced and extended to apply to newly acquired companies within the SAP Group. SAP has been awarded the British Standards Institution (BSI) certification for the implementation and operation of SAP's data protection management system, which underlines SAP's compliance with data protection laws, including GDPR.

– We actively monitor legal developments and engage with political stakeholders and government authorities, directly or through industry associations, to clarify questions relevant to SAP and SAP's business.

– We strive to provide clear governance and guidance on data handling, processing standards, and external communication as part of our data management framework, specifically incorporating aspects of new technologies such as those represented in embedded intelligence applications.

– We increase the automation of security processes and secure product development to reduce human error and ensure consistency and dependability of security outcomes.

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. We classify this risk factor as medium.

Corporate Governance and Compliance

Ethical Behavior: Our global business exposes us to risks related to unethical behavior and non-compliance with policies by employees, other individuals, partners, or entities associated with SAP.

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, regulators, and authorities, and adherence to recognized standards of business integrity. This commitment to recognized standards of business integrity is formalized in SAP's CoBC and supporting guidelines.

We are subject to risks and associated consequences in the following areas, among others:

– Non-compliance with our policies and violation of compliance related rules, regulations, and legal requirements including, but not limited to, anti-corruption and anti-bribery legislation in Germany, the U.S. Foreign Corrupt Practices Act, the UK Bribery Act, and other local laws prohibiting corrupt conduct

– Unethical and fraudulent behavior by individual employees, other individuals, partners, or entities associated with SAP leading to criminal charges, fines, and claims by affected parties

– Collusion with external third parties, for example, by aiding in securing business

– Fraud and corruption, especially in countries with a low Transparency International Corruption Perceptions Index score and particularly in emerging markets

– Public sector transactions in territories exposed to a high risk of corruption

– Increased exposure and impact on business activities in highly regulated industries such as public sector, healthcare, banking, or insurance

Any of these events could have a material adverse effect on our business, reputation, brand, competitive or financial position, share price, profit, and cash flows.

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– Continuous development of our comprehensive compliance program based on the three pillars of prevention, detection, and response

– Expansion of the OEC's bandwidth through additional staffing

– Root cause analysis related to corrupt or fraudulent behavior, to improve associated business processes and prevent further and future violations

– Refraining from engaging sales agents and paying third-party sales commissions on public sector deals in high-risk countries

– Review of partner business models, to mitigate risks of corruption while meeting agility requirements

– Internal audit of our compliance program as it relates to bribery, corruption, and substantial fraud

– Several educational, counseling, control, and investigative measures

– Requirement for mandatory CoBC training applicable to every SAP employee, providing practical guidance on how to avoid corrupt behavior and approach dilemma situations

– Annual reconfirmation of commitment to the CoBC by SAP's workforce (except where disallowed by local legal regulations)
– Implementation of compliance policies and processes aimed at managing third parties and preventing misuse of third-party payments for illegal purposes, including the performance of compliance due diligence activities prior to the engagement of third parties
– Guidance in our travel, entertainment, gift, and expense policies
– Termination of partners that do not pass our partner compliance audit process, or remediation of their deficiencies
– Establishment of a Partner Integrity Initiative aiming to examine the compliance programs of partners in SAP's ecosystem and to review the SAP-related deals closed by them

Despite our comprehensive and continuously evolving compliance program and established internal controls, intentional efforts of individuals to circumvent controls or engage in corruption, especially by way of collusion with other involved parties, cannot always be prevented.

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. We classify this risk factor as medium.

Operational Business Risks

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

A core element of our business is the successful implementation of software and service solutions. The implementation of SAP software and cloud-based service deliveries is led by SAP, by partners, by customers, or by a combination thereof.

We are subject to risks and associated consequences 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, high pace of engineering innovation, individual integration and migration needs or functional requirement changes, or insufficient milestone management and tracking leading to delays in timeline, maybe even exceeding maintenance cycles of solutions in scope
– Insufficient or incorrect information provided by customers, subsequently leading to mismatches in contractual commitments, requirements, solution definition, architectures, or technologies
– Insufficient customer expectation management, including scope, integration capabilities and aspects, as well as lack of purposeful selection, implementation, and utilization of SAP solutions
– Lack of customer commitments and respective engagements, including insufficient commitment of resources or lack of solution migrations to latest offerings, leading to delays or deviations from recommended best practices
– Challenges to effectively implement acquired technologies
– Challenges to achieve a seamlessly integrated, sufficiently automated and aligned service delivery in complex deliveries or implementations, for example due to lack of insights especially in the event of limited project involvement of SAP
– Protracted installation or significant third-party consulting costs
– Improper calculations or estimates leading to costs exceeding the fees agreed in fixed-price contracts
– Unrenderable services committed during the sales stage
– Inadequate contracting and consumption models based on subscription models for services, support, and application management

- Deviations from standard terms and conditions, which may lead to an increased risk exposure
- Statements on solution developments might be misperceived by customers as commitments on future software functionalities
- Joint innovations with partners or customers

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

- Risk management processes that are integrated into SAP's project management methods intended to safeguard implementations through coordinated risk and quality management programs
- Scope reviews and monitoring that are adapted as required as part of a clearly defined change request process to support successful implementations together with respective project governance and steering
- Recommended project approaches, guidance, and best practices for customers to optimize their IT solutions in a non-disruptive manner
- Adequate financial planning provisions for the remaining risks
- Continuous project monitoring and controlling activities
- An escalation management process
- Adjustment of delivery models to support customers
- Ongoing development of new commercial models to address customer flexibility needs
- Simplification, review, alignment, approval, and enforcement of contractual standard terms and conditions while conducting legal and operational assessments in case deviations are required
- A policy that clearly outlines communication rules on future functionalities as well as legal requirements for commitments to customers
- Early warning through executive risk committees on regional and global level
- Exposure approval through an RDOA

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be unlikely. We classify this risk factor as medium.

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 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 or implementing our software.

We are subject to risks and associated consequences in the following areas, among others:

- Failure to establish and enable a network of qualified and fully committed partners supporting our scalability needs and speed and impact in market reach
- Products or services model being less strategic or attractive compared to our competition
- Failure of partners to develop sufficient innovative solutions and content on our platforms or to provide high-quality products or services to meet customer expectations

- Failure of partners to embed our solutions sufficiently enough to profitably drive product adoption, especially with innovations in SAP S/4HANA, the SAP Customer Experience portfolio, business process intelligence from SAP, and SAP Business Technology Platform (SAP BTP)
- Failure of partners to adhere to applicable legal and compliance regulations
- Failure of partners and their products to meet quality requirements expected by our customers or us
- Failure of partners to transform their business model in accordance with the transformation of SAP's business model in a timely manner
- Failure of partners to comply with contract terms in embargoed or high-risk countries

If any 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.

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

- We invest in long-term, mutually beneficial relationships and agreements with partners.
- We continue to develop and enhance a wide range of partner programs to retain existing and attract new partners of all types.
- We enable and encourage partners to leverage SAP technology, by providing guidance about business opportunities, architecture, and technology, such as through demo solutions, to enable partners to lead business value discussions on cloud and on-premise solutions with customers.
- We offer training opportunities on a wide range of resources for our partners and provide safeguarding services to customers and partners.
- We introduced a partner delivery quality framework to monitor and safeguard the success of partner-led projects while ensuring that SAP quality criteria are met.
- We included selected services in the free tier model as part of our Pay-as-You-Go for SAP BTP agreement.
- We maintain a certification process for third-party solutions to ensure consistent high-quality and seamless integration.
- We provide customer guidance and support as required during partner dissolutions.

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. We classify this risk factor as medium.

Cybersecurity and Security: A cybersecurity attack or breach, or cybersecurity vulnerabilities in our products, infrastructure, or services, or economic espionage could result in significant legal and financial exposure.

SAP continues to grow organically and through acquisitions, delivers a full portfolio of solutions via the cloud, hosts or manages elements of our customers' businesses in the cloud, processes large amounts of data, and offers more mobile solutions to users. While SAP executes each of these areas either directly or through partners and other third parties, we face a progressively more complex and threatening cybersecurity environment. The severity of the challenges posed by this cybersecurity environment is amplified due to the increasingly sophisticated and malicious global cybersecurity threat landscape in which we operate. This includes third-party data, products, and services that we incorporate into SAP products and services, and the continually evolving and increasingly advanced techniques employed by threat actors targeting IT products and businesses in general. Such threat actors include, but are not limited to, highly sophisticated parties such as nation-states and organized criminal syndicates.

As a leading cloud company and service provider to some of the largest and best-known customers in the world, we are naturally a prominent target for cybersecurity attacks. We have observed increased threat activity to our products and systems, and we experience cybersecurity attacks of varying types and degrees on a regular basis. Should we become aware of unauthorized access to our systems, we have action plans in place intended to identify and remediate the source and impact of the incursions, and steps to comply with related necessary notification and disclosure obligations. To date, we have not experienced any incursions resulting in a material adverse effect on our business. However, we may be subject to incursions which we are not aware.

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

– A globally increasing number of threat actor attacks aimed at obtaining or violating Company data including personal data, as observed in recent prominent cases of cyberattacks where the use of ransomware was the preferred method of threat actors
– Identified or undetected cybersecurity defects and vulnerabilities
– Increased complexity, risk of exploitation, and potential vulnerabilities due to utilization of open source software components, such as Log4j vulnerabilities
– Exposure of our business operations and service delivery due to threats, including virtual attack, disruption, damage, unauthorized access, theft, destruction, industrial or economic espionage, serious or organized crime, and other illegal activities, as well as violent extremism and terrorism
– 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, whether managed by us or our customers, partners, or other third parties
– Disruptions to back-up, disaster recovery or business continuity management processes
– Disruptions due to exposure of our network systems to cybersecurity attacks via defects and vulnerabilities in the IT systems of our customers, or in the systems of third parties that facilitate our business activities such as cloud service providers, including those that are beyond SAP's cybersecurity infrastructure and protocols
– Failure of any cloud service provider to deliver cloud services securely and successfully, which could have a negative impact on customer trust in cloud solutions
– Cybersecurity threats for SAP and customers due to delayed or insufficient responses to identified cybersecurity issues attributable to complexity, interdependencies, or other factors
– Challenges in effectively synchronizing cybersecurity processes across our various lines of business in a heterogeneous environment
– Insufficient or ineffective asset management potentially endangering secure operations
– Customer systems or systems operated by SAP being compromised by vulnerabilities due to threat actor exploitation
– Operational disruptions due to an increasing number of destructive malwares, ransomware, or other cybersecurity attacks
– Breach of cybersecurity measures due to, for example, but not limited to, error or wrongdoing by employees or affiliated persons, system vulnerabilities, code defects, malfunctions, or attempts of third parties to fraudulently induce employees, users, partners, or customers to gain access to our systems, data, or customers' data

– Expansion of cybersecurity attack surface due to increased connectivity of operational data
– Material costs to attempt to detect, prevent, and mitigate any successful attacks, including, but not limited to the costs of third-party legal and cybersecurity experts and consultants, insurance costs, additional personnel and technologies, organizational changes, and incentives to customers and partners to compensate for any losses or retain their business
– Inability to anticipate attacks or implement sufficient mitigating measures
– Insufficient investment, coordination, or resources to achieve our objective of ensuring over time that our cybersecurity infrastructure meets or exceeds evolving industry standards, and defending against the ever-evolving and emerging threat landscape
– Material costs and time associated with enhancing our cybersecurity infrastructure, which may impact the ongoing pace of development and delivery of our products and services and our financial performance
– Failure to integrate SAP's cybersecurity infrastructure and protocols with other network systems obtained through acquisition, including addressing, identifying, and remediating cybersecurity defects and vulnerabilities and related breaches in acquired systems
– Failure to maintain SAP's cybersecurity infrastructure and protocols in connection with the divestiture of businesses and network systems from SAP, or failure to achieve a holistic level of required transparency reflecting current states
– Inaccurate or incomplete third-party or SAP audit results, certifications, or representations concerning the adequacy of our cybersecurity infrastructure and protocols

Any of these events could have a material adverse effect on our customers, partners, financial performance, profit, cash flows, operations, brand, reputation, competitive position, the perception of our products and services by current and prospective customers, and our business in general.

In response to the increasing number of cybersecurity attacks, and because we anticipate threat actor techniques to continue to evolve in our cybersecurity landscape, SAP has expended significant resources to enhance its cybersecurity program, has increased the Executive Board and Supervisory Board's governance of and involvement in cybersecurity matters, and continues to investigate and remediate vulnerabilities.

SAP has established measures intended to address the described risks and adverse effects, such as:

– Software security development lifecycle as a mandatory, integral part of our software development process, including checks on open source component coverage and enhanced development tools with integrated security features and functionalities
– Alignment of our software security development lifecycle to the recommendations of ISO/IEC 27034, applying methods to develop secure software
– Provision of security certifications (such as ISO/IEC 27001), security white papers, product documentation, and reports from independent auditors and certification bodies to our customers
– Review/audit of our certifications and representations to customers concerning our cybersecurity infrastructure and protocols in alignment with contractual agreements
– An SAP Global Security Policy that is mandatory for all employees and supported by documented security standards, procedures, and good practices including specific security training curricula for our developers
– Product standard requirements such as mandatory non-erroneous modeling that takes software dependencies into account
– Disaster recovery and business continuity plans to protect our key IT infrastructure (especially our data centers), including implementation of data redundancies and daily data backup strategies

- Certification of relevant IT-related organizations to the internationally recognized Business Continuity Management standard
- A responsible disclosure process to detect vulnerabilities, as well as security patch days to rapidly respond to customer security needs and provide fixes
- Increased investments, coordination, and resources, including various internal initiatives, to achieve SAP's objective of ensuring over time that our cybersecurity infrastructure meets or exceeds evolving industry standards
- Improved monitoring with respect to implementing enhancements to our cybersecurity infrastructure
- Improved roll-out procedures for security-relevant notes, patches, and service packs to ensure easy and fast consumption on the customer side
- Continuous vigilance, adaptation, standardization, and modification of our security procedures, such as security risk identification, threat modeling, advanced threat defense, a comprehensive security testing strategy, container security enhancements, mandatory security training for all developers, and security validation of our critical components, products, patches, and services before shipment
- Focus on development and implementation of heightened cybersecurity measures designed to further safeguard SAP's most strategic assets
- Monitoring of cybersecurity posture to gain visibility on exposed vulnerabilities of third-party vendors
- Measures such as technical IT security measures, identity and access management, and mandatory security and compliance training
- Investment in data and asset governance of SAP's global asset repository
- Physical security measures such as access control systems and employee identification
- Focus on increased coordination across our various lines of business with respect to our ability to detect, identify, and respond to unauthorized incursions in our systems in a timely manner
- Focus on increased training, development, and retention of skilled personnel in SAP's cybersecurity and product security workforce
- Increased employee, contractor, third-party, and partner awareness through campaigns and cybersecurity awareness training courses and projects, including execution of security reviews, as required
- Local and regional crisis management teams to respond and minimize losses in case of crisis situations
- Engagement of experts to advise on appropriate cybersecurity protocols and to further increase attention and awareness of cybersecurity protocols and protection options
- Integrated enhanced security capabilities in our hosting environment, cloud platforms, and cloud deployment tools

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be business-critical. We estimate the probability of occurrence to be likely. We classify this risk factor as high. For more information, see the *Security, Data Protection, and Privacy* section.

Technology and Products: Our technology and products may experience undetected defects, coding, or configuration errors, may not integrate as expected, or may not meet customer expectations.

We are subject to risks and associated consequences in the following areas, among others:

– Failure of software products and services to fully meet market needs or customer expectations

– Failure of software products and services from acquired companies to fully comply with SAP quality standards

– We might not be as fast as expected in integrating our platforms and solutions, enabling the complete product and cloud service portfolio, harmonizing our user interface design and technology, integrating acquired technologies and products, or bringing packages, services, or new solutions based on SAP BTP to the market.

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

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

– Inability of algorithms to correctly adapt to evolving circumstances, which may lead to adverse decision-making processes in the context of AI-related technologies

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

– Lack of customer references for new products and solutions

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

SAP has established measures to address and mitigate the described risks and adverse effects, such as:

– Increased focus on localization needs to further meet customer demands

– A broad range of techniques, including project management, project monitoring, product standards and governance, and rigid and regular quality assurance measures certified to ISO 9001:2015, applicable to SAP's reportable segments

– Threat modelling at the beginning of every development project to identify potential risks including, but not limited to using centrally provided tools, also as part of information security measures certified to ISO 27001:2013

– A holistic testing strategy to validate the state of quality and security for every product before market introduction

– Regular, direct customer feedback is considered in the market release decision process

– Ongoing maintenance of the high quality-level of our products, which is made transparent in the defined KPIs for quality transparency and confirmed by our satisfaction ratings as measured by our customer survey

– Integration and convergence of our offerings such as SAP S/4HANA, the SAP Customer Experience portfolio, SAP BTP, and acquired technologies

– Enablement of our current product portfolio for SAP HANA, development of innovative solutions based on SAP HANA, and offering of comprehensive cloud-based services, supported by SAP BTP and intelligent technologies

– A comprehensive certification program designed to ensure that relevant third-party solutions are of consistently high quality

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be likely. We classify this risk factor as medium.

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 increasingly competitive and is exhibiting 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 we not only attract new customers but also that our existing customers renew their agreements with us when the initial contract term expires and purchase additional modules or additional capacity. Additionally, we need to bring innovations to the market in line with demands of our ecosystem and ahead of our competitors, such as solutions to support new data-driven applications and the extension of the intelligent suite based on SAP BTP. Innovative applications supporting the Intelligent Enterprise strategy include, among others, SAP Customer Experience solutions, SAP S/4HANA, and SAP BTP, as well as technologies such as IoT, ML, intelligent robotic process automation (which automates rule-based, repetitive tasks), digital assistants including voice recognition and interaction, and blockchain.

We are subject to risks and associated consequences in the following areas, among others:

– Inability to deliver fully suitable solution and transformation services to our customers on the cloud transformation journey, both in cloud-only and hybrid scenarios

– Inability to successfully execute on our hyperscaler strategy

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

– Insufficient solution and service adoption together with increased complexity, as well as failures during the execution of our Intelligent Enterprise strategy in the context of our portfolio for solutions and services, which could lead to a loss of SAP's position as a leading cloud company and subsequently to reduced customer adoption

– Customers and partners reluctant or unwilling to migrate and adapt to the cloud, or customers considering cloud offerings from our competitors

– Existing customers deciding to cancel or not renew their contracts (such as maintenance or cloud subscriptions) or not buy additional products and services

– Strategic alliances among competitors or their growth-related efficiency gains in the cloud business, which could lead to significantly increased competition in the market with regard to pricing and the ability to integrate solutions

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

– Inability to achieve the planned margin increase in time as planned

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– Share our overall long-term cloud strategy and our integration road map with our customers, and continuously implement improvements to enhance our cloud solutions through our Intelligent Enterprise strategy, also covering the integration of experiential and operational data

- Demonstrate the benefits of our solution and services portfolio through end-to-end integration scenarios, consistent and compelling user interfaces, intelligent technologies, customer references, and success stories
- Enable and support our customers in their transition path from on-premise to cloud, for example through the cloud extension policy, our SAP S/4HANA Movement program (a cross-departmental initiative to promote the migration of our existing ERP customers to an intelligent enterprise), our scalable SAP S/4HANA Cloud, private edition, or the SAP HANA Enterprise Cloud advanced edition offerings
- Balance the allocation of our strategic investments by evolving and protecting our core businesses and simultaneously developing new solutions, technologies, and business models for markets, such as those in analytics, applications, and database and technology
- Engage with our customers and offer a broader range of services to support and drive the digital transformation for our customers, for example with our RISE with SAP package and our premium service offerings
- Place strong focus on providing our cloud services efficiently and to customer expectations, including service provisioning, quality, security, and data protection and privacy
- Continue to drive the solution integration and harmonization of data models to support integrated business processes, applications, and technology while focusing on resilience, profitability, and sustainability
- Enable our portfolio for hyperscalers to extend customer reach and further meet customer expectations
- Deliver standard software and product packages that are fast, easy to install, and highly automated, as well as financially attractive financing and subscription models
- Enable and encourage partners to leverage SAP technology by providing guidance about business opportunities, architecture, and technology, as well as a comprehensive certification program designed to ensure that relevant third-party solutions are of consistent high quality
- Continue to move SAP HANA Enterprise Cloud towards a full-stack offering and increase the share of high-value cloud application services to further improve the margin

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be business-critical. We estimate the probability of occurrence to be unlikely. We classify this risk factor as medium.

Mergers and Acquisitions: We might not acquire and integrate companies effectively or successfully.

To expand our business, we acquire businesses, products, and technologies, and we expect to continue doing so in the future. Over time, some 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 the workforce, and exposes us to unpredictable operational difficulties.

We are subject to risks and associated consequences in 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 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

– Failure in implementing, restoring, or maintaining internal controls, disclosure controls and procedures, and policies within acquired companies
– Incompatible practices or policies regarding compliance requirements
– Debt incurrence or significant unexpected cash expenditures
– 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, data privacy, and trade sanctions, for which SAP, through the acquisition, assumes responsibility and liability, including potential fines and the obligation to remedy the non-compliance

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

SAP has established measures intended to address and mitigate risks and adverse effects, such as:

– Technical, operational, financial, and legal due diligence on the company or assets to be acquired
– A holistic evaluation of material transaction and integration risks
– Identification, implementation, and tracking of risk mitigation measures for material transactions or integration risks
– A standardized methodology for detailed integration planning, which is conducted by a dedicated integration team
– Process, risk, and control analyses accompanied by subsequent integration into SAP's processes and control framework, and supported by mitigations as required by any specific circumstances to subsequently increase adherence to SAP's standards and policies

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be unlikely. We classify this risk factor as medium.

Innovation: We might not be able to compete effectively if we strategize our solution portfolio ineffectively or if we are unable to keep up with rapid technological and product innovations, enhancements, new business models, and changing market expectations.

Our future success depends on our ability to keep pace with technological and process innovations and new business models, as well as on our ability to develop new products and services, enhance and expand our existing products and services portfolio, and integrate products and services we obtain through acquisitions. To be successful, we are required to adapt our products and our go-to-market approach to a cloud-based delivery and consumption model to satisfy increasing customer demand and to ensure an appropriate level of adoption, customer satisfaction, and retention.

We are subject to risks and associated consequences in the following areas, among others:

– Inability to bring new business models, solutions, solution enhancements, intelligent technologies, integrations and interfaces or services to market before our competitors or at equally favorable terms
– Inability to develop and sell new cloud products spanning various organizations on time and in line with market demands due to complexity in heterogeneous technical environments
– Inability to anticipate and develop technological improvements or succeed in adapting SAP products, services, processes, and business models to technological change, changing regulatory requirements, emerging industry standards, and changing requirements of our customers and partners (especially with innovations such as industry cloud, SAP Business Network, and business process intelligence offerings supported by SAP BTP) to strengthen the Intelligent Enterprise strategy

– Uncertainties regarding new SAP solutions, technologies, and business models as well as delivery and consumption models, which might lead customers to wait for proofs of concepts or holistic integration scenarios through reference customers or more mature versions
– Lower level of adoption of our new solutions, technologies, business models, and flexible consumption models, or no adoption at all
– Our product and technology strategy might not be successful, or our customers and partners might not adopt our technology platforms, applications, or cloud services quickly enough or they might consider other competing solutions in the market, or our strategy might not match customers' expectations and needs, 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 of charge or at terms and conditions unfavorable for SAP
– Inability to drive growth of references through customer use cases and demo systems

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

SAP has established measures intended to address and mitigate the described risks and adverse effects, such as:

– Align our organization, processes, products, delivery, commercial and consumption models, and services to changing markets and customer and partner demands
– Continuously benchmark, match, and challenge the entire portfolio at a corporate, portfolio category, and individual business case level
– Focus all investment decisions related to innovative technologies and solutions on portfolio compatibility and readiness as well as high customer value
– Develop innovative technologies and solutions, such as industry cloud solutions, SAP Business Network, and business process intelligence offerings supported by SAP BTP
– Explore future trends as well as the latest technologies, for example through our network of innovation centers as part of the Technology & Innovation Board area, and adapt these to the market if there is a clear business opportunity for SAP and value to our customers
– Conduct wide-ranging market and technology analyses and research or co-innovation projects, also in close cooperation with our customers and partners, to remain competitive
– Make strategic acquisitions in white spots of our portfolio

We cannot exclude the possibility that if risks of this risk factor were to occur, the impact could be major. We estimate the probability of occurrence to be unlikely. We classify this risk factor as medium.

Consolidated Risk Profile

In our view, considering their impact level and likelihood of occurrence, the risks described in our aggregated risk report do not individually or cumulatively threaten our ability to continue as a going concern. While individual risks and assessments may have changed during fiscal 2021, the overall situation did not change materially compared to the prior year. Management remains confident that the Group's earnings strength forms a solid basis for our future business development and provides the necessary resources to pursue the opportunities available to the Group. Based on our structured processes for early risk identification, we are confident that we can continue to counter the challenges arising from the risks in our current risk profile in 2022.

Expected Developments and Opportunities

Future Trends in the Global Economy

Supply bottlenecks, which caused disruption in 2021, will start easing from the second quarter of 2022 and unwind fully by 2023, predicts the European Central Bank (ECB) in its current Economic Bulletin.[(D)] The ECB therefore maintains its previous optimistic projections for the full year 2022 and has even raised them for 2023. Persisting shortages, high commodity prices, and the emergence of the Omicron variant of the coronavirus might initially weigh on near-term growth prospects, though. According to the ECB, the future course of the pandemic remains the key uncertainty when it comes to projections for the global economy.

Concerning the EMEA region, economic activity in the euro area could exceed its pre-pandemic level already in the first quarter of 2022 and pick up further in the course of the year, driven by a robust domestic demand, an improving labor market, and ongoing policy support. Thereafter, the ECB expects an increasingly self-sustaining growth, as it believes the basis for an ongoing recovery in the euro area is intact. In central and eastern Europe, rising energy prices might put additional pressure on inflation over the coming months, peaking in the course of 2022 and declining gradually afterwards. Correspondingly, global demand for oil and gas and the associated positive terms of trade should support economic activity in Russia, but at the cost of high inflation.

In the Americas region, the subdued economic growth seen in the United States in the latter half of the previous year might extend into the first quarter of 2022. The ECB suggests that once the current supply bottlenecks dissipate, the United States should return to growth, supported by a fiscal package. However, inflationary pressures will probably remain high at the beginning of 2022. In Brazil, double-digit inflation is likely to continue, but decline in the course of 2022 and 2023.

As for the APJ region, the ECB expects economic activity in Japan to rebound solidly in early 2022. In China, the government introduced policy actions in 2021 that should manage the slowdown and avoid a sharper contraction in 2022, ensuring energy security and supporting the property sector. A stronger slowdown in the Chinese real estate sector than currently expected by the ECB would dampen the economic outlook not only for China, but also worldwide.

Economic Trends – GDP Growth Year Over Year

%	2020	2021p	2022p
World	–3.1	5.9	4.4
Advanced Economies	–4.5	5.0	3.9
Emerging Markets and Developing Economies	–2.0	6.5	4.8
Regions (according to IMF taxonomy)			
Euro Area	–6.4	5.2	3.9
Germany	–4.6	2.7	3.8
Emerging and Developing Europe	–1.8	6.5	3.5
Middle East and Central Asia	–2.8	4.2	4.3
Sub-Saharan Africa	–1.7	4.0	3.7
United States	–3.4	5.6	4.0
Canada	–5.2	4.7	4.1
Latin America and the Caribbean	–6.9	6.8	2.4
Japan	–4.5	1.6	3.3
Emerging and Developing Asia	–0.9	7.2	5.9
China	2.3	8.1	4.8

p = projection

Source: International Monetary Fund (IMF), World Economic Outlook Update January 2022, Rising Caseloads, a Disrupted Recovery, and Higher Inflation (https://www.imf.org/-/media/Files/Publications/WEO/2022/Update/January/English/text.ashx), p. 6.

The IT Market: Outlook for 2022 and Beyond

“2022 might be the year the global economy becomes more digital than physical,” says International Data Corporation (IDC), a U.S.-based market research firm.(E) “Cloud in all its permutations will continue to play ever greater, and even dominant, roles across the IT industry as enterprises pivot to a digital-first economy. Entire industries want to intelligently leverage data to their advantage and can do so because they have faster access to digital technologies built on a cloud foundation. Cloud is now firmly established as an essential element of a digital-first strategy, as organizations look to automate operations, deliver rich customer experiences, and launch new products and services, cloud has become the primary accelerator of innovation,” says IDC.(F)

Sustainability has become a top priority for corporations, and IDC highlights that “decarbonization initiatives will be a key goal of digital transformations; fewer than 10% of organizations say they are not applicable or not implementing objectives to reduce carbon by the end of 2023.” Therefore, “carbon accounting systems will rise up the priority list for systems implementation. The adage ‘you can’t manage what you can’t measure’ applies to carbon emissions as well,” says IDC.(E) As a guidance, IDC proposes: “Establish the IT organization as the provider of the data management foundation that collects all sustainability data company-wide with the purpose of measuring progress against IT and general business sustainability contribution and efficacy across each factor.”(G)

Additionally, IDC observes a shift in vendor to customer relationships and predicts that “by 2023, traditional distribution models will crumble as 20% of businesses in some sectors use technology to go direct to customers, seeking to improve customer satisfaction and product development.”(H) Furthermore, IDC predicts that “by 2022, organizations that allocate 50%+ of their software development projects to customer-facing initiatives will see revenue grow 15% faster compared with those that focus more on internal projects.” In addition, company sales portfolios will be impacted as “by 2026, 30% of software development teams will be focused on turning traditional products into outcomes as a service,” states IDC.(G)

With regard to macroeconomic factors, IDC states that “organizations continue to navigate the disruptions, accelerations, and crosscurrents spurred by the COVID-19 pandemic and the changing economic conditions. By 2022, more than half the global economy will be based on or influenced by digital. By 2023, 90% of worldwide organizations will be prioritizing investments in digital tools to augment physical spaces and assets, and by 2024, 55% of all ICT investment will be linked to digital transformation," predicts IDC.[F] The software sector in particular will be impacted as "by 2024, the majority of legacy applications will receive some modernization investment, with cloud services used by 65% of the applications to extend functionality or replace inefficient code." IDC's rationale for the investments is "modernizing applications brings value to the business by increased competitiveness and the ability to outflank competitors." As a result, IDC guides companies to "move proactively to modernize more critical applications where you can. Your competitors will be doing the same, and failure to invest can leave an organization in a disadvantaged competitive position."[H]

Sources:

[D] European Central Bank, Economic Bulletin, Issue 8/2021, Publication Date: January 13, 2022 (*https://www.ecb.europa.eu/pub/pdf/ecbu/eb202108.en.pdf*)

[E] IDC FutureScape: Worldwide Digital Transformation 2022 Predictions, Doc #US47115521, Oct. 2021

[F] IDC FutureScape: Worldwide Cloud 2022 Predictions, Doc #US47241821, Oct. 2021

[G] IDC FutureScape: Worldwide IT Industry 2022 Predictions, Doc #US48312921, Oct. 2021

[H] IDC FutureScape: Worldwide Future of Digital Innovation 2022 Predictions, Doc #US47148621, Oct. 2021

Impact on SAP

Despite ongoing uncertainties in the global economy and supply chain disruptions as well as the ongoing pandemic situation, the resurgence of the global demand is noticeable. SAP expects more companies will choose SAP to help them transform their businesses, build resilient supply chains, and become sustainable enterprises. For SAP, moving to the cloud is not an option anymore but a required step in business transformation for our customers. We saw this momentum reflected in the success of our RISE with SAP offering and are confident about further growth and even greater potential going forward across our complete portfolio. This is manifested in our accelerated cloud guidance for 2022. SAP is confident that its positive momentum will continue throughout 2022.

Financial Targets and Prospects

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

Outlook 2022

For 2022, SAP expects its cloud growth to continue to accelerate. The pace and scale of SAP's cloud momentum places the Company well on track towards its mid-term ambition.

For the full year 2022, SAP expects:

– €11.55 billion to €11.85 billion cloud revenue at constant currencies (2021: €9.42 billion), up 23% to 26% at constant currencies.

– €25.0 billion to €25.5 billion cloud and software revenue at constant currencies (2021: €24.08 billion), up 4% to 6% at constant currencies.

– €7.8 billion to €8.25 billion non-IFRS operating profit at constant currencies (2021: €8.23 billion), flat to down 5% at constant currencies.

– The share of more predictable revenue (defined as the total of cloud revenue and software support revenue) is expected to reach approximately 78% (2021: 75%).

– Free cash flow above €4.5 billion (2021: €5.01 billion).

– A full-year effective tax rate (IFRS) of 25.0% to 28.0% (2021: 21.5%) and an effective tax rate (non-IFRS) of 22.0% to 25.0% (2021: 20.0%), strongly depending on the development of Sapphire Ventures' investments.

– To achieve a year-end current cloud backlog growth rate similar to 2021.

While SAP's full year 2022 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 2022 expected currency impacts. These currency expectations for the full year 2022 are based on the December 2021 level.

In percentage points (pp)	FY 2022
Cloud revenue growth	+2pp to +4pp
Cloud and software revenue growth	+1pp to +3pp
Operating profit growth (non-IFRS)	+1pp to +3pp

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

€ millions	Estimated Amounts for 2022	Actual Amounts for 2021
Acquisition-related charges	570–670	623
Share-based payment expenses	3,000–3,300	2,794
Restructuring	20–40	157

Proposed Dividend

In 2022, we intend to pay a dividend of €2.45 per share (subject to shareholder approval at the **Annual General Shareholders Meeting** in May 2022). This dividend includes a special payment of €0.50 to celebrate SAP's 50th anniversary. For more information, see the *Financial Performance: Review and Analysis* section.

Medium-Term Prospects

In this section, all numbers (except cloud revenue and total revenue) are based exclusively on non-IFRS measures.

SAP expects to steadily grow its more predictable revenue while increasing operating profit. We expect to achieve double-digit growth of non-IFRS operating profit from 2023 onwards followed by double-digit growth of total revenue as we approach 2025. Our strategic objectives are focused primarily on our main financial and non-financial objectives: growth, profitability, customer loyalty, and employee engagement.

SAP confidently reiterates its mid-term ambition published on October 25, 2020. By 2025, SAP continues to expect:

– More than €22 billion cloud revenue
– More than €36 billion total revenue
– More than €11.5 billion non-IFRS operating profit
– A non-IFRS cloud gross margin of approximately 80%
– A significant expansion of the Company's more predictable revenue share to approximately 85%, reaching more than €30 billion
– Free cash flow of approximately €8 billion

Investment Goals

Our planned investment expenditures for 2022 and 2023, other than for business combinations, consist primarily of the purchase of IT infrastructure and the construction activities described in the *Assets (IFRS)* section. We expect investments in IT infrastructure of approximately €500 million and in construction activities of approximately €300 million in 2022. In 2022, we expect total capital expenditures of approximately €850 million. In 2023, capital expenditures are expected to stay at a similar level as in 2022.

Goals for Liquidity and Finance

As at December 31, 2021, we had net debt of €1.6 billion. We believe that our liquid assets combined with our undrawn credit facilities are sufficient to meet our operating financing needs in 2022 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 2022, we expect a free cash flow of above €4.5 billion (compared to €5.0 billion in 2021), predominantly due to our expectation of flat to slightly declining operating profit. Since payouts for capital expenditures and leasing are expected on a level similar to the last three years, a separate outlook on operating cash flow is not provided. For 2025, we continue to expect around €8.0 billion in free cash flow.

In 2022, we intend to repay €900 million in Eurobonds, US$445 million in U.S. Private Placements, and €1.45 billion in bank loans. At the date of this report, debt repayments of around €4.3 billion until the end of 2023 are scheduled. The ratio of net debt as at December 31, 2021, divided by the total of operating profit (IFRS) plus depreciation and amortization was 0.24x, therefore, already below our 2023 target of 0.5x.

Non-Financial Goals 2022 and Ambitions for 2025

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

For 2022 through 2025, we aim to maintain employee engagement, measured by the Employee Engagement Index, at a high level between 84% and 86% (2021: 83%).

We measure customer loyalty using the Customer Net Promoter Score (Customer NPS). We are targeting to increase the Customer NPS to a score of 11 to 15 in 2022 and to steadily increase the Customer NPS through 2025 (2021: 10).

We aim to reach net greenhouse gas emissions in our operations of 70 kilotons (kt) in 2022 (2021: 110 kt) with a steady decrease further on, reaching 0 kt by 2023 and maintaining net carbon emissions in our own operations of 0 kt from that point onward. Further, SAP has also committed to achieve net-zero along our value chain in line with a 1.5 degrees Celsius future in 2030.

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.

Outlook for SAP SE

The primary source of revenue for SAP SE is the license fees it charges subsidiaries for the right to market and maintain SAP software solutions. Consequently, the performance of SAP SE in operating terms is closely tied to the cloud and the software revenue of the SAP Group.

Based on the outlook for cloud and software revenue for the SAP Group at constant currency in non-IFRS in 2022, we expect product revenue for SAP SE in 2022 to increase slightly compared to 2021.

Assuming there are no significant effects from acquisitions or other unforeseeable occurrences in 2022, we also expect the operating profit of SAP SE to decrease moderately compared to 2021.

The financial ambitions of the SAP Group for the years 2023 to 2025 provide for future growth of revenue and profit. We expect that such growth will also result in revenue and profit growth for SAP SE to the same degree.

We expect that SAP SE will continue to receive investment income in the form of profit transfers and dividends from its subsidiaries. The growth we expect for the SAP Group should have a positive effect on this investment income.

The outlook for the SAP Group in respect to liquidity, finance, investment, and dividend are equally applicable to SAP SE.

Among the assumptions underlying this outlook are those presented above concerning the economy and our expectations for the performance of the SAP Group.

Opportunities

Our customers choose SAP as a trusted partner for their digital business transformation. We have established a framework for opportunity management by evaluating and analyzing key areas such as current markets, external scenarios, economic conditions, and technological trends. We have also researched customer and product segmentation, growth drivers, and industry-specific factors for success. These combined insights play a key role for the Executive Board in the development of our market strategies. Our shareholder value relies heavily upon a fine balance of risk mitigation and value-driven opportunities. Therefore, our governance model helps ensure that decisions are based on return, investment required, and risk mitigation.

As far as opportunities are likely to occur, we have incorporated them into our business plans, our outlook for 2022, and our medium-term prospects outlined in this report. Therefore, the following section focuses on future trends or events that might result in an uplift of our outlook and medium-term prospects should they develop more positively than anticipated in our forecasts.

SAP SE is the parent company of the SAP Group and earns most of its revenue from subscription fees, software license fees, and dividends paid by affiliates. Consequently, the opportunities described below also apply – directly or indirectly – to SAP SE.

Opportunities from Economic Conditions

Economic conditions clearly influence our business, financial position, profit, and cash flows. Should the global economy recover faster than is reflected in our plans today, our revenue and profit may exceed our current outlook and medium-term prospects. Our medium-term planning considers changes in market conditions as a result of the ongoing COVID-19 pandemic. Although we continue to be mindful of the negative aspects of this global situation, we do see a trend developing to prioritize investments in digital transformation. This could result in an acceleration of the digitalization of business processes that exceeds what we had originally planned.

For more information about future trends in the global economy and the IT market outlook, as well as their potential influence on SAP, see the beginning of the *Expected Developments and Opportunities* section.

Opportunities Through Innovation

Our continued growth through innovation is based on our ability to leverage research and development (R&D) resources effectively. We continue to improve our products through design thinking and lean methodologies. We are accelerating innovation cycles, especially in our cloud solutions, and engaging even more closely with our customers to enable success.

In addition, we continue to expand innovation initiatives to support long-term projects in strategic opportunity areas, supporting talented entrepreneurs within SAP, as well as, for example, external startups.

Based on our innovation capability, we see opportunities in growing product and market areas, such as in the further enhancement of business processes with intelligent technologies. In addition to the increased focus on innovation, we also focus on ease of adoption and consumption, so our customers can receive the benefits from our software applications, technologies, and platforms at reduced time to value. For example, the accelerated adoption of technology that helps companies transform into more sustainable businesses could result in additional upsell opportunities for customers migrating to **SAP S/4HANA Cloud**.

In particular, we see **three innovation areas** that have the potential to grow beyond our expectations.

First, with its open APIs and value services, **SAP Business Technology Platform (SAP BTP)** may be adopted faster than internally planned. Second, **business process intelligence** (BPI) may see increased demand for intelligent automation realized through services such as application lifecycle management (ALM) and robotic process automation (RPA), for example. Third, we see high growth potential in the area of **sustainability management**. Our vision to enable customers to transform into intelligent, sustainable enterprises is based on our commitment to "chasing zero" – zero emissions, zero waste, zero inequality. If this conviction is shared by increasing numbers of customers, this may lead to an increased demand for our business process logics.

For more information about future opportunities in research and development for SAP, see the *Products, Research & Development, and Services* section.

Opportunities from Our Strategy for Profitable Growth

SAP strives to generate profitable growth across our portfolio of products, solutions, and services to keep or improve our market position. Our aim is to continue to expand our addressable market through the adjustment of our portfolio and our new technologies and innovations. The COVID-19 pandemic has strengthened the readiness in the market to consume software in the cloud, including core business process platforms. This could result in an even faster adoption of our core ERP offering in the cloud than anticipated, translating into higher cloud and total revenue growth from 2023 onwards than currently provided for in our midterm ambition. Greater efficiency in our cloud operations may also positively affect the profitability of our cloud business.

SAP seeks to establish new business models and leverage our expanding ecosystem of partners to achieve scale and maximize opportunities. We see additional opportunities in potential future strategic partnerships, such as those for the migration of critical business systems to the cloud linked to the **RISE with SAP** offering. In addition, a promising joint venture in the financial services industry called **SAP Fioneer** was founded in 2021, enabling a better coverage of the rapidly changing banking and insurance industry.

Our extensive experience in applications and analytics, as well as database and technology, continue to offer solid multiyear growth opportunities as we bring innovative technologies with simplified consumption to our installed base and continue to acquire new customers.

The stronger focus on customer success enabled through our shift to a new operating model that aligns sales, services, and customer engagement activities may positively impact our revenue, profit, and cash flows. This potential may result in our stated medium-term prospects being exceeded.

Opportunities from Our Partner Ecosystem

SAP's partner ecosystem is defined by the interdependent relationships of our customers, our employees, our suppliers, our partners, and our competition. Our ecosystem, which includes more than 22,500 partners with different areas of expertise, carries the SAP brand into global markets and expands our portfolio with their expertise, services, and products. Our ecosystem includes partners in four different tracks: partners in the "**Build**" track develop solutions on top of, or integrate with, SAP technology and platforms; partners in the "**Sell**" track resell, implement, and support customers in the cloud and on premise; partners in the "**Service**" track (systems integrators) provide strategic business consulting, system design, solution integration, and project implementation of SAP solutions; partners in the "**Run**" track are outsourcing or hosting companies that offer SAP solutions to customers through a private or public cloud.

SAP and our partner ecosystem offer solutions to help customers grow their businesses and accelerate their move to the cloud. SAP partners build innovative extensions for SAP applications based on SAP BTP, and in doing so, enhance the customer value with SAP. By providing innovations that extend SAP applications, partners can influence the adoption of SAP technologies to support customers' unique business needs. Thus, customers maximize their SAP investment through partner offerings such as solution extensions, industry-specific solutions, line-of-business (LoB) solutions, and mobile solutions.

Partners constantly respond to the market needs while raising awareness around strategic offerings, such as RISE with SAP, SAP BTP, and our **industry cloud solutions**, which drive the cloud transformation of our customers. Partners offer customers a vast array of SAP technologies and services specific to their LoB or industry, making it easy for customers to purchase the right combination of products and services (such as consulting, implementation, and development) to meet their business needs.

Partners contribute to SAP's growth by expanding our market reach in sales and services, specifically by retaining and increasing sales to existing customers, attracting new customers, and satisfying our joint customers' requirements through (co-)innovation. Together with all of the aforementioned measures, this may positively impact our revenue, profit, and cash flows, and enable SAP to exceed our stated medium-term prospects.

Opportunities from Our Employees

Our employees drive innovation, provide value to our customers, and consistently enable our growth and profitability. We continuously invest in our people with the aim of retaining their high level of engagement, further strengthening their skills, fostering an agile and innovative organization, and ensuring a healthy, diverse, and inclusive workforce. By doing so, we anticipate improvements in our employee productivity and innovation capabilities.

Our outlook and medium-term prospects are based on certain assumptions regarding employee retention and our **Business Health Culture Index**. Should these develop at a rate that is better than expected, employee productivity and engagement may increase. A stronger-than-expected increase in the **Employee Engagement Index** can therefore be an opportunity that could positively impact our revenue, profit, and cash flows, enabling SAP to exceed our stated medium-term prospects.

For more information about future opportunities relating to our employees, see the *Employees and Social Investments* section.

Further Information about Economic, Environmental, and Social Performance

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About This Further Information on Economic, Environmental, and Social Performance

The social and environmental data and information included in the SAP Integrated Report has been prepared in accordance with the GRI Standards: Core option. This option indicates that a report contains the minimum information needed to understand the nature of the organization, its material topics and related impacts, and how these are managed.

The Further Information on Economic, Environmental, and Social Performance includes information that is required to comply with the GRI Standards. In addition, we present our Connectivity model that shows the interrelations between social, environmental, and financial performance. We also report on our contribution towards the United Nations Sustainable Development Goals (SDGs) and respond to the recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD).

Starting in 2021, we map our reporting to two additional frameworks:

– The Software & IT Services Sustainability Accounting Standards prepared by the Sustainability Accounting Standards Board (SASB), now part of the Value Reporting Foundation.

– The core “Stakeholder Capitalism Metrics” as proposed by the World Economic Forum’s International Business Council (WEF IBC).

Connectivity of Financial and Non-Financial Indicators

Where We Come From: Putting a Value on Non-Financial Performance Indicators

At SAP, we have put a monetary value on how selected non-financial indicators impact our operating profit. For example, how well we engage with our employees and inspire them to commit to our purpose and strategy, support a healthy business culture, and succeed in reducing our carbon emissions.

Figure 1: Connectivity Between Social, Environmental, and Economic Performance. SAP's main KPIs are marked in orange.

To achieve this, we created cause-and-effect chains that show how specific actions we take at SAP lead to shifts in behavior. This behavior impacts our business and has a financial consequence.

By doing so, we established more than just a correlation between non-financial and financial indicators. The cause-and-effect chains also reveal why and how something such as employee engagement ultimately leads to gains or losses in business performance. We believe that such insights are a prerequisite for fully modeling the financial impact of non-financial performance.

Magnitude of Financial Impact

From 2014 to 2018, SAP used techniques such as linear regression analysis to document the financial impact of four non-financial indicators: the Business Health Culture Index, the Employee Engagement Index, employee retention, and carbon emissions. In the past, we assessed each indicator to see what a change of one percentage point (pp) (or 1% for carbon emissions) would mean for our operating profit. The results for 2018, for example, showed that a 1pp change in the Business Health Culture Index affected our operating profit by €90 million to €100 million (non-IFRS).

Having illustrated this impact with concrete numbers, we are now turning our focus to a broader perspective of impact (for example, see *Our Contribution to the UN Sustainable Development Goals* and *A New and Broader Focus*). We still strongly believe in the fundamental conclusions of the analysis, but do not see a need to continuously update specific monetary values on the well-established connections. This is because the values have not been subject to any large fluctuations over the years. Instead, they have increased steadily, as expected.

Promoting Sustainability Measures to Boost Financial Performance

Documenting the financial impact of non-financial indicators has helped us move closer to achieving our sustainability goals. Rather than simply stating the business case for social or environmental change, we also have the numbers to back it up.

Our findings have helped us shift the conversation for managers, investors, employees, and other key stakeholders, and firmly establish non-financial indicators as playing a crucial role in our financial success. As a result, engaging employees or reducing our emissions is no longer seen as a nice-to-have, but rather as essential to carrying out a successful business strategy.

By embedding this approach into our decision-making and quarterly business reviews, our sustainability performance steers our business alongside factors such as revenue and profit. Our goal is for all senior managers and experts at SAP to recognize – and be held accountable for – the fact that improving such measures as employee engagement also boosts financial performance.

Embedding Non-Financial Performance Indicators into Our Solutions

We will continue to share our approach and methodology with our customers to help them win in the marketplace. We believe that companies achieve higher profits – resulting from both greater cost efficiency as well as revenue growth – by addressing economic, social, and environmental considerations in a holistic and integrated manner. More importantly, these companies are better equipped to lead in the future, as they navigate the world's most pressing challenges and help bring about long-term sustainable change.

Using the connectivity model as outlined above, we have been able to embed non-financial KPIs into our software solutions. This integrated approach to financial and non-financial performance is reflected in the solutions developed for climate action, circular economy, social responsibility and holistic steering and reporting.

A New and Broader Focus

In line with our purpose to help the world run better and improve people's lives, we have moved beyond financial measures to evaluate the consequences of our actions on society and the environment as well as the wider economy. As well as exploring cause-and-effect chains within SAP's own operations, we also measure positive and negative societal impacts across our complete value chain.

Building on our many years of experience in connecting financial and non-financial measures, we cofounded the Value Balancing Alliance (VBA) in 2019. This alliance looks at ways in which businesses can better understand their societal and environmental impacts and formulate corporate strategies to address these areas.

The VBA was founded by eight companies: BASF SE, Robert Bosch GmbH, Deutsche Bank AG, LafargeHolcim Ltd, Novartis International AG, Philip Morris International Inc, SAP SE, and SK Group. The organization is supported by the world's four largest accounting companies: Deloitte Touche Tohmatsu Limited, Ernst and Young Global Ltd, KPMG International Ltd, and PricewaterhouseCoopers International Limited. It is also supported by leading universities such as Harvard Business School, together with stakeholders from governments, civil societies, and standard-setting organizations. As at the end of 2021, the alliance consisted of 19 companies. By participating in the VBA's methodology development and piloting phases, SAP is playing an active part in shaping the future of impact measurement and valuation.

Meeting the Challenges of Non-Financial Value Measurement

Environmental degradation, rising societal inequalities, and the COVID-19 pandemic have highlighted the need for corporate accountability and value creation beyond financial markets. However, most corporations are failing to tackle climate change, biodiversity loss, and inequality, because – as one of multiple reasons – decisions are based on insufficient information.

Accounting systems often ignore the value of environmental and societal impacts, leading to misallocation of resources. However, as is increasingly recognized by institutions such as Harvard Business School, monetary evaluation of these impacts has the potential to change accounting systems and transform capital markets. The development of impact-weighted accounting metrics is a necessary precondition for this.

Increasing regulatory pressure has also resulted in an urgent requirement for a reporting standard for environmental, social, and governance criteria. In response, organizations such as the Sustainability Accounting Standards Board (now part of the Value Reporting Foundation) and the Global Reporting Initiative are adapting and aligning their efforts to develop reporting systems that help investors make more sustainable decisions.

We co-founded the VBA to support the development of a standardized methodology that helps companies, investors, and other stakeholders compare non-financial performance. These insights enable companies to create business value beyond revenue or profit growth while taking into consideration the long-term impacts of their business operations on the environment and society as a whole.

To help the European Union (EU) achieve its commitment to making Europe the first climate-neutral continent by 2050 as part of the European Green Deal, the VBA is acting as an advisor on EU regulatory activities. Furthermore, the VBA is working to help drive the establishment of a globally accepted system of standards for non-financial disclosure.

Piloting the Measurement of Non-Financial Impacts

Ending in November 2021, our second VBA pilot analyzed categories including GDP contribution, health and safety, training, consumptive water use, water pollution, greenhouse gas (GHG), air emissions, land use and biodiversity, and waste. We used data from our Integrated Report 2020, from our internal controlling and HR systems, and from our environmental management system. The analysis focused on our complete operations and our supply chain. An analysis of the “downstream” impacts resulting from customers’ use of our software solutions and services will be piloted in the next phase.

Wherever possible, we used primary data for the calculations. Where primary data was not available, we used proxies, modeling techniques, and assumptions that were well-defined and documented in the VBA method papers. Key stakeholders across all relevant lines of business were engaged in the pilot, which was sponsored by our CFO.

Analysis took place across multiple impact categories, and resulted, for example, in the following findings from the GHG and training categories:

– **GHG**: Our analysis enabled us to identify the GHG impact of each subsidiary and location, and we now have insights into which SAP locations have the highest CO_2 footprints and which locations have the lowest. Negative impacts of GHG were monetized at €136 million and this has helped inform decision-making regarding our CO_2-reduction strategy. It has also helped us quantify the investment required for offsetting emissions by funding alternative energy resources to achieve carbon neutrality in our operations by 2023.
– **Training**: Money spent on offering training to employees positively impacts their employability, earnings, skills, and knowledge. However, it also results in “softer” impacts such as enhanced

confidence, self-awareness, and active listening. This can result in improved mental well-being, with benefits for our employees' immediate social environment, as well as social and civic engagement. The analysis identified that our global employee training programs have a material positive impact and thus valuation of training is being prioritized in our future journey in shaping impact measurement and valuation.

We aim to add further indicators and share best practices and lessons learned with external stakeholders and other VBA member companies to help improve the methodology and input process. In addition, we will make results available to the public.

Shaping the Environment of Impact Measurement

Since the outbreak of COVID-19, impact measurement and valuation as a science is evolving globally. The connection between economic, social, and environmental impacts will become a guiding principle for the way businesses are evaluated and steered.

We are using insights gained during our impact valuation journey in the development of our sustainability management initiative. We strive to embed impact measurement into our corporate and relevant business unit decision-making and target-setting. Holistic steering and reporting are being developed across the value chain, incorporating our response to legal requirements and using capabilities embedded in our software solutions.

Our impact measurement experiences form a foundation for software innovations in the fields of climate action, circular economy, social responsibility, and holistic steering and reporting, helping customers on their environmental, social, and governance journey. We see the monetary evaluation of environmental and societal impacts as crucial in achieving a sustainable economy, and by simplifying, aligning, and optimizing enterprise sustainability reporting, we help customers address global sustainability challenges.

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.

Materiality

Defining Key Priorities for Our Non-Financial Reporting

To select the topics to be included in our integrated reporting, we conducted a comprehensive materiality assessment in 2020 using an artificial intelligence (AI) and Big Data solution from Datamaran Limited that helped us build an evidence-based materiality matrix. We assessed economic, social, and environmental topics according to three criteria:

1) Importance of topic for stakeholders (Y-axis)

2) Relevance to SAP's business success (X-axis: Impact of topic on SAP)

3) Magnitude of SAP's impact on the topic (differently colored circles)

Below, we have detailed the key stages of the process.

Identification

We compiled a list of approximately 100 potentially relevant topics based on guidance from standards of the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), as well as our existing materiality topics. We also considered a materiality assessment for the information and communications technology industry by the Global Enabling Sustainability Initiative (GeSI) as well as the United Nations' Sustainable Development Goals (SDGs). When identifying key topics and their boundaries, we looked at areas related to our operations and supply chain as well as at topics related to our solutions. Since we oriented ourselves on the topics provided in the Datamaran matrix, the selected topics are more detailed than in our last materiality assessment.

Prioritization

We ranked topics by their importance to stakeholders by analyzing six external sources. These sources included corporate peer reports; mandatory and voluntary regulations for the software sector; online news related to the technology equipment and services industry; tweets; and questionnaires gathering non-financial information from socially responsible investors and clients.

Next, we evaluated the financial, operational, and strategic relevance of each topic to SAP's business success and resilience, drawing on an analysis by SAP sustainability experts from various units and regions.

Finally, based on survey responses gathered from SAP sustainability experts, we considered the potential impacts on society, the environment, and the economy, ranking topics as either low, medium, or high. We have estimated our impact on today's society, environment, and economy and we expect the impact level to change as we continue to design solutions to manage areas such as climate change.

Validation

In 2020, the results of the materiality analysis were reviewed and confirmed by our steering committee for integrated reporting, our sustainability council, and our sustainability advisory panel. Our chief financial officer, who is also our Board sponsor for sustainability and integrated reporting, was also informed about the results. In 2021, our materiality assessment was reviewed, updated, and confirmed by our Integrated Report Steering Committee.

The changes in 2021 compared to 2020 include:

– To achieve greater consistency with definitions in reporting standards, we deleted the topics “Business resilience” and “Innovation and digitalization” from the matrix. “Business resilience” is redundant to the y-axis of our matrix; “Innovation and digitalization” is at the heart of our business model and described as such.

– We have extended the thresholds for defining topics as material, to better align our reporting with our strategic priorities.

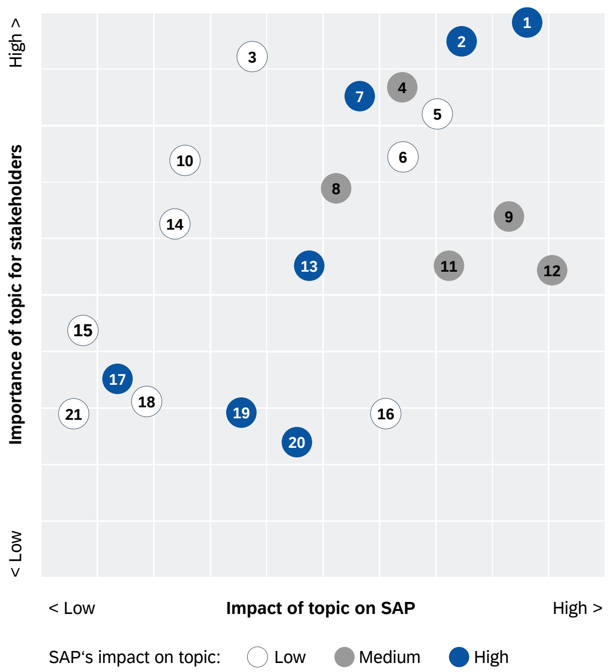
– We have applied the definition of materiality according to the GRI Standards more strictly. We now identify material topics by considering their importance for stakeholders or SAP’s impact on the topic. Previously, we combined both dimensions.

Review

Feedback on and analysis of our integrated report will be taken into account during future materiality assessments.

Results

Our materiality matrix for prioritizing our reporting topics is shown in the following graphic. We have categorized topics according to whether they are sustainability challenges or sustainability management practices. The former affect SAP and are also impacted by us, whereas the latter offer guidance on how to deal with these challenges.



Materiality Matrix for Prioritizing Our Reporting Topics (numbers in the matrix are explained in the table below)

Sustainability challenges* and management practices** included in our materiality assessment are as follows:

Index	Topics	Definitions	Related Non-Financial Matters
1*	Security, privacy, and data protection	Protection of private, confidential, or sensitive information and data, as well as the vulnerability of critical information systems	
2*	Ethics and compliance	Responsible business conduct, including anti-corruption, anti-bribery, fair competition, respect for intellectual property, and responsible tax principles	Anti-corruption and bribery matters
3*	Employee rights	Labor rights, including unionization, as well as compensation and benefits offered to employees by their employer	Employee matters
4*	Fair and inclusive workplace	Active integration, equal opportunity, as well as fair treatment and remuneration of all employees	Employee matters
5*	Human rights	Fundamental rights of all individuals to live in dignity	Respect for human rights
6*	Well-being, health, and safety	Social, economic, psychological, and physical conditions of employees in their workplace, as well as employees' occupational health and safety	Employee matters
7*	Climate change and air quality	(Non-)greenhouse gas emissions from operations and products, as well as present or potential disruptive impacts of climate change	Environmental matters
8**	Governance	Procedures and rules concerning a company's control and decision-making system, as well as relationship management with investors and stakeholders	
9*	Talent and development	Talent attraction, retention, and development	Employee matters
10*	Energy	Energy consumption by operations and products, and the transition to renewable energy	Environmental matters
11*	Customer responsibility	Responsibility to help ensure customer satisfaction and customer rights, including responsible marketing and selling practices	Customer matters
12*	Employee engagement	Corporate culture, employee engagement and motivation, and strategic decisions involving workforce changes	Employee matters
13**	Transparency	Transparency through non-financial reporting on public policy practices and executive compensation	
14*	Resource efficiency and waste	(Non-)hazardous waste as well as resource usage, reduction, reuse, or recycling	Environmental matters
15*	Water	Use, management, conservation, reduction, and contamination of water	Environmental matters
16*	Geopolitical events	Political conditions, demographic changes, and catastrophic or other events with an influence on business	
17**	Responsible supply chain	Procurement practices to help ensure respect of the environment and human rights throughout the entire supply chain	
18**	Local community support	Programs and projects to help ensure the well-being and positive development of communities with which a company interacts, including employee volunteering	
19**	Solutions for an inclusive and circular economy	Products and services that create positive environmental and social impact during their whole lifecycle	
20*	Product responsibility	Product and service quality, as well as the information shared with customers so that they can make informed decisions	Customer matters
21*	Biodiversity	Variety of flora and fauna on earth, and the foundation for ecosystem services that are essential for nature and human well-being	Environmental matters

* Sustainability challenges affect SAP and are also impacted by us.
** Sustainability management practices offer guidance on how to deal with these challenges.

In our reporting, we seek to meet the materiality requirements of both the GRI Standards and section 289c (3) of the German Commercial Code (Handelsgesetzbuch, HGB). Because of the diverging definitions of materiality, we see the following difference in material topics:

According to the GRI Standards, the following topics are material:

Index	Topic
1*	Security, privacy, and data protection
2*	Ethics and compliance
3*	Employee rights
4*	Fair and inclusive workplace
5*	Human rights
6*	Well-being, health, and safety
7*	Climate change and air quality
8**	Governance
9*	Talent and development
10*	Energy
11*	Customer responsibility
12*	Employee engagement
13**	Transparency
14*	Resource efficiency and waste
17**	Responsible supply chain
19**	Solutions for an inclusive and circular economy
20*	Product responsibility

According to the HGB, the following topics are material:

Index	Topic
1*	Security, privacy, and data protection
2*	Ethics and compliance
4*	Fair and inclusive workplace
7*	Climate change and air quality
8**	Governance
9*	Talent and development
11*	Customer responsibility
12*	Employee engagement

Stakeholder Engagement

For SAP, stakeholder engagement and collaboration are deeply embedded into our process of innovation and the development of our products and services. Before we can design a new solution, we must first understand the issue we are addressing. This is why we regularly liaise with the stakeholder groups described below, including our sustainability and AI ethics advisory panels.

Customers

For more information about our customer engagement programs, see the *Customers* section.

Employees

We survey our employees regularly throughout the year. For the results of our latest employee survey and action items resulting from it, see the *Employees and Social Investments* section.

We strive for constructive labor relations across the world, working within each country's requirements. We currently have social partners in 37 countries in Europe, Asia, and the Americas. These employee representative bodies consist of elected union members and/or non-union members, and are consulted by SAP management mainly on topics that define the work environment and work processes. Collective bargaining agreements with unions are only made in countries where legally required. Overall, about 49% of our employees are represented by works councils or an independent trade union, or are covered by collective bargaining agreements.

In addition, the Executive Board answers employees' questions in quarterly all-hands meetings. In regular coffee corner sessions, senior executives explain our strategy to employees and answer their questions directly.

Financial Analysts and Investors

For more information about our dialog with the financial community (that is, financial analysts, institutional investors, and retail shareholders), see the *Investor Relations* section.

Governments

For more information about our dialog with governments, see the *Public Policy* section.

Industry Analysts

Our Analyst Relations team, the Executive Board, and executives have strong relations with IT analysts and engage with them on strategic SAP solutions and services on a frequent basis.

Partners

With more than 22,500 partners around the world, the SAP ecosystem is vital to our success. We take a multifaceted approach to engagement that begins with the dedicated, interactive SAP Partner Portal. Partners receive regular communications including customized newsletters, training offers, and Web seminars, with the latest announcements and thought leadership relevant to their specific partnership type. Additionally, virtual events are held throughout the year, around the globe, to further gauge partners' feedback on how SAP can continuously improve. For more information about our ecosystem, see the section *Products, Research & Development, and Services.*

Non-Profit Organizations (NPOs) and Academia

Our dialog with NPOs and academic institutions helps us understand how we can address today's most pressing issues with our solutions and what is expected from us as a corporation. For example, SAP University Alliances introduces students and faculty to SAP software by providing networking and educational activities and partnering to build technology skills. For more information about how we engage with NPOs, see the *Employees and Social Investments* and *Our Contribution to the UN SDGs* sections.

Sustainability Advisory Panel

Our sustainability advisory panel consists of expert representatives from our customers, investors, partners, NPOs, and academia. In 2021, the panel discussed key initiatives related to corporate social responsibility, environmental performance, and our sustainability management solutions.

AI Ethics Advisory Panel

Our AI ethics advisory panel consists of academic, policy, and industry experts who advise us on the development and operationalization of the guiding principles for artificial intelligence. In 2021, the panel discussed, for example, the importance of harmonizing AI ethics with SAP's overall human rights agenda and operationalizing these topics.

Sustainability Management

Putting Sustainability at the Heart of Our Strategy

With SAP's purpose to help the world run better and improve people's lives, sustainability is firmly anchored in our business strategy, governance, and executive compensation system. For more information about our renewed corporate strategy, see the *Strategy* section.

We aim to create positive economic, environmental, and social impact within the planetary boundaries using two key levers:

1) Providing products and services that meet the sustainability challenges and opportunities of our customers (enabler)
2) Leading by example in our own sustainable business operations and practices (exemplar)

Our chief sustainability officer (CSO) reports directly to the chief financial officer (CFO), who is the sponsor for sustainability on the Executive Board. The CSO chairs the Sustainability Council which consists of dedicated senior executives in charge of sustainability in each Board area. Together with the CSO's team, the Council is accountable for driving SAP's holistic, cross-company sustainability agenda and setting annual objectives and priorities.

In addition to the Sustainability Council, we have governance and project structures in place to address specific topics such as solution development, environmental management, and human rights.

Changing Our Behavior and Culture

Employee engagement is essential for driving change throughout SAP. We set up a number of programs to help employees understand how sustainability is engrained in our purpose and strategy, and how they can contribute. For example, SAP continues to include sustainability in its onboarding training for new hires and various line-of-business-specific learning offerings. Furthermore, employees can take openSAP online courses on sustainability, which are also available to the general public for free. Due to the COVID-19 pandemic, onsite offerings have been on hold, but in many cases have shifted to new virtual alternatives.

To help drive progress in our sustainability initiatives, we need the support of employees in every part of SAP. We have a global internal network of more than 300 sustainability champions who represent different regions and areas of the business at SAP. Not only do they act as role models and multipliers, these champions also tailor sustainability engagement activities to local and lines-of-business needs and interests and share best practices.

We measure the success of our initiatives through our employee engagement surveys. The latest results from 2021 showed that 79% of our employees stated "I actively contribute to SAP's sustainability goals." This is down from 87% in 2019 but up from 47% in 2009 when we introduced the question.

Our Contribution to the UN Sustainable Development Goals

The 17 United Nations Sustainable Development Goals (SDGs) provide a globally accepted framework anchored in human rights, which we use for communicating our purpose to "help the world run better and improve people's lives." We strive to execute on this purpose by being a role model for sustainable, purpose-led operations and by enabling our customers to operate in a sustainable way.

Following the adoption of the SDGs by world leaders in September 2015, we identified and aligned existing initiatives with all 17 SDGs. For example, we looked at the environmental and social impacts of customers using SAP technology and applications, linking these impacts to the SDGs. The resulting Web book (*www.sap.com/unglobalgoals*) was published in early 2016 and has been updated regularly.

In discussions with our Sustainability Council and external sustainability advisory panel, we defined the SDGs for which there is a tangible and material link between our own operational activities or the use of our software by customers.

The following table describes the potential positive (+) and negative (–) direct or indirect impacts of our company and of our products and services related to the selected SDGs. We use "direct" when we refer to impacts through our own operations; "indirect" describes impacts through the use of our solutions and technology or in our ecosystem.

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.

SDG 3 Good Health and Well-Being

Our Potential Direct and Indirect Impact	**Direct:** + Provide access to a healthy lifestyle and a safe and healthy working environment for our employees	**Indirect:** + Enhance safe and healthy working conditions, healthcare, and personalized medicine on a global scale – Increase transparency of physical, medical, and health conditions of individuals, which might be abused
Our KPIs and Targets	Business Health Culture Index	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** Global Health and Safety Management Policy; Employee Assistance Program; Corporate Oncology Program for Employees; Mental Health Initiative	**Indirect:** SAP solutions for healthcare; SAP Environment, Health, and Safety Management; SAP SuccessFactors Well-Being Management by Virgin Pulse; Corona-Warn-App
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Employees and Social Investments* *SAP and SDG 3, Healthcare, SAP Environment, Health, and Safety Management, SAP Mental Health Initiative, SAP's COVID-19 Response, Corona-Warn-App, SAP Vaccine Collaboration Hub*	

SDG 4 Quality Education

Our Potential Direct and Indirect Impact	**Direct:** + Train and educate SAP employees	**Indirect:** + Build capability in our ecosystem and among our customers
Our KPIs and Targets	Engaging two million children, youth, and young adults in digital skills and coding programs by 2022	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** Cloud-based learning management system for employees	**Indirect:** openSAP; CSR digital literacy programs; SAP digital learning initiative
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Employees and Social Investments* *SAP and SDG 4, SAP Learning for Life, Powering Opportunity Through Digital Inclusion, SAP Digital Learning Initiative*	

SDG 8 Decent Work and Economic Growth

Our Potential Direct and Indirect Impact	**Direct:** + Create decent jobs at SAP through our growth plans, specifically in developing markets	**Indirect:** + Create three million jobs in our ecosystem (based on a 2017 study by SAP and PwC) + Enable an inclusive economy + Respect human rights across value chains + Combat forced and child labor throughout supply chains – Fuel negative effects on employment through digitalization and automation; potentially increase precarious jobs
Our KPIs and Targets	Number of employees	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** SAP recruiting programs	**Indirect:** SAP Rural Sourcing Management; SAP Ariba Supplier Risk; Partnership with Social Enterprise UK
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Employees and Social Investments* *SAP and SDG 8, Skilled and Inclusive Workforce, Pledge to Flex, Supporting Social Entrepreneurship, Powering Opportunity Through Digital Inclusion, SAP Solutions for Social Responsibility, SAP Rural Sourcing Management*	

SDG 9 Industry, Innovation, and Infrastructure

Our Potential Direct and Indirect Impact	**Direct:** + Increase inclusive and sustainable industrialization through SAP's investments in research and development (including in developing countries)	**Indirect:** + Support providers of infrastructure, financial services and clean technologies + Provide "Best Practice" business processes through standard software solutions + Integrate small and medium-sized enterprises into global value chains and markets
Our KPIs and Targets	NA	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** SAP Labs Network; One Billion Lives initiative fostering purpose-driven innovation	**Indirect:** SAP support for startups through various programs

Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Products, Research & Development, and Services, Employees and Social Investments* *SAP and SDG 9, SAP Innovation, One Billion Lives Initiative, SAP.io*

SDG 10 Reduced Inequalities

Our Potential Direct and Indirect Impact	**Direct** + Ensure equal opportunity and inclusion of all employees, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or other status	**Indirect** + Enable an inclusive economy by providing tools and systems to foster inclusion of all in workforce and supply chains − Decouple societal groups from entire areas of employment through an accelerated digital divide and lack of digital skills
Our KPIs and Targets	▪ 30% women in management by year end 2022 ▪ Double the representation of African-American talent in the U.S. over the next three years ▪ Reach 5% of annual addressable procurement spend with social enterprises and with diverse businesses by 2025	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** Human Rights Commitment Statement; Diversity & Inclusion programs including EDGE certification; SAP Global Anti-Discrimination Policy; 5 & 5 by ’25 initiative	**Indirect:** SAP solutions for social responsibility; SAP Ariba Supplier Risk Management
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*SAP and SDG 10, Human Rights Commitment Statement, Equality for All, Diversity and Inclusion, Social Justice, Spotlight Black Businesses, Equal Pay for Equal Work, Fostering Corporate Spend with Diverse Suppliers, Powering Opportunity Through Digital Inclusion, SAP Product Accessibility, SAP Solutions for Social Responsibility, SAP Rural Sourcing Management*	

SDG 12 Responsible Consumption and Production

Our Potential Direct and Indirect Impact	**Direct:** + Drive sustainable business practices and integrated reporting − Use energy, water, and resources; produce waste	**Indirect:** + Decouple economic prosperity from resource consumption by enabling transparency and optimizing resource productivity in linear or circular economies − Increase absolute resource and energy consumption because efficiency gains through automation may be counteracted (rebound effect)
Our KPIs and Targets	We drive resource productivity with an aspiration to a world with zero waste.	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** Beyond Single-Use Plastics initiative; Supplier Code of Conduct; Sustainable Procurement; e-waste recycling	**Indirect:** SAP Responsible Design and Production; 5 & 5 by ’25 initiative; SAP Ariba Supplier Risk Management; SAP Digital Supply Chain; SAP Rural Sourcing Management; SAP Logistics Business Network and Material Traceability
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Energy and Emissions, Waste and Water, Sustainable Procurement* *Environmental Policy, SAP and SDG 12, Circular Economy, SAP Solutions for Circular Economy, Circular Design Project, SAP and Topolytics Launch COP26 Waste Insights Project, Phase out single-use plastics, Buy social: 5 & 5 by ’25, SHIFT: Digital tools to fight ocean plastics, Material traceability, GreenToken by SAP*	

SDG 13 Climate Action

Our Potential Direct and Indirect Impact	**Direct:** + Assume responsibility for products in use-related emissions by running customer applications in the SAP green cloud − Emit greenhouse gases	**Indirect:** + Contribute to climate change mitigation and strengthen resilience and adaptive capacity to climate-related hazards and natural disasters of our customers + Enable holistic operational steering by integrating climate-change relevant parameters and help understand and minimize the climate footprint of a company's products, operations, and services − Increase customers' energy consumption through use of software
Our KPIs and Targets	Become carbon neutral by 2023	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	**Direct:** Global Environmental Policy; Report and reduce CO_2 emissions and energy consumption; Procure 100% renewable electricity; Carbon impact relevance for Executive Board compensation	**Indirect:** Green Cloud; Business ambition for 1.5°C; Climate 21 program; SAP Product Carbon Footprint Management; SAP Landscape Management Cloud; SAP Transportation Management; Concur Travel, and TripIT
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Energy and Emissions, Compensation Report* *Environmental Policy, SAP and SDG 13, Climate Action, Climate Change: What SAP Is Doing, SAP sets 1.5°C science-based emissions reduction targets aligned with a net-zero future, SAP's investment in Livelihoods Carbon Funds, SAP joins 1t.org with a pledge to plant 21 million trees, Climate 21, SAP Product Carbon Footprint Management, SAP Concur Sustainable Travel*	

SDG 17 Partnerships for the Goals

Our Potential Direct and Indirect Impact	Direct: + Build capacity throughout our broader ecosystem	
Our KPIs and Targets	NA	
Our Policies and Selected Activities and Programs to Enhance Positive Impacts and Mitigate Negative Impacts	For more information, see the section *Memberships, Partnerships, and Commitments*	
Where You Can Find More Information in the SAP Integrated Report and Other Sources	*Employees and Social Investment, Memberships, Partnerships, and Commitments* *SAP and SDG 17, SAP and UNICEF, SAP Founding Member of Value Balancing Alliance, SDG Ambition, SAP joins the Ellen MacArthur Foundation, WEF Global Plastic Action Partnership, SAP Is Innovation Partner in WBSCD's Value Chain Carbon Transparency Pathfinder, SAP joins the Global Alliance for YOUth*	

Sustainable Procurement

Making Our Supply Chain More Sustainable

A significant part of our social and environmental impact is delivered through our supply chain. Eliminating single-use plastics, decreasing carbon emissions, reducing oversized packages, and close collaboration with our supplier network are factors that contribute to a sustainable supply chain.

Our Global Procurement Organization (GPO) aims to transform into an even more purpose-driven organization consistent with diversity and social enterprises. That is why we established the overarching Procurement with Purpose strategy, which promotes purpose-driven programs such as diversity and social inclusion and responsible resource usage.

Governance

SAP's GPO is led by our chief procurement officer (CPO). Reporting to our CPO are the heads of our procurement categories (1) Car Fleet, (2) IT Infrastructure, (3) Marketing & Travel, (4) Professional Services, and (5) Workplace Infrastructure and their teams.[28]

Also reporting to the CPO, the chief operating officer (COO) is responsible for enabling processes and governance within the GPO.

Our CPO and chief sustainability officer meet each quarter to discuss the progress and challenges related to embedding sustainability in our procurement practices.

Upholding High Standards Across Our Supply Chain

SAP's supplier code of conduct (SCoC) is included in our standard supplier contracts and is an essential part of our supplier registration. This supplier registration ensures that potential suppliers of SAP are aware of SAP's SCoC. We review and update our SCoC regularly to maintain high standards within our supplier network. This strengthens the code's enforceability and sends a clear message about its importance for SAP.

In addition to requirements for sustainable packaging (such as plastic-free, appropriately sized boxes), our SCoC contains provisions on the Modern Slavery Act and diversity and inclusion, as well as a labor standards chapter that expressly refers to human rights. Furthermore, we recommend to SAP suppliers that they deliver goods and services that are accessible to everyone, including people with disabilities.

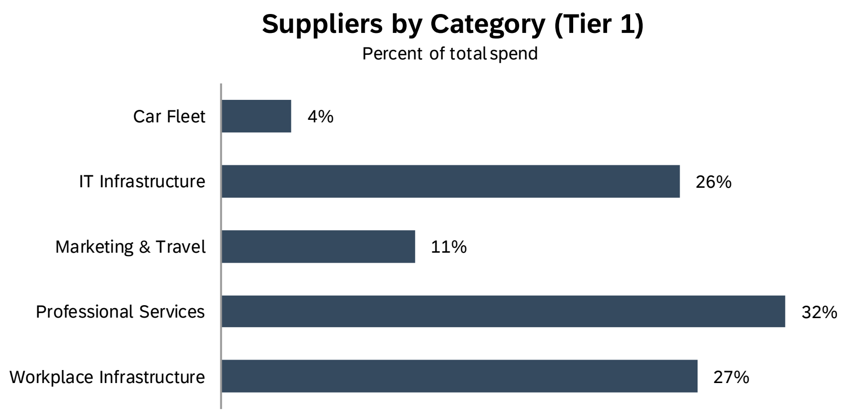
In early 2022, the GPO will implement the Procurement with Purpose supplier qualification process. This process will capture information pertaining to the performance of our suppliers in three focus areas: Social & Inclusive Supply Chain, Environmental Supply Chain, and Human Rights in Value Chain. This data will enable the GPO to make an informed supplier selection based on environmental and social performance.

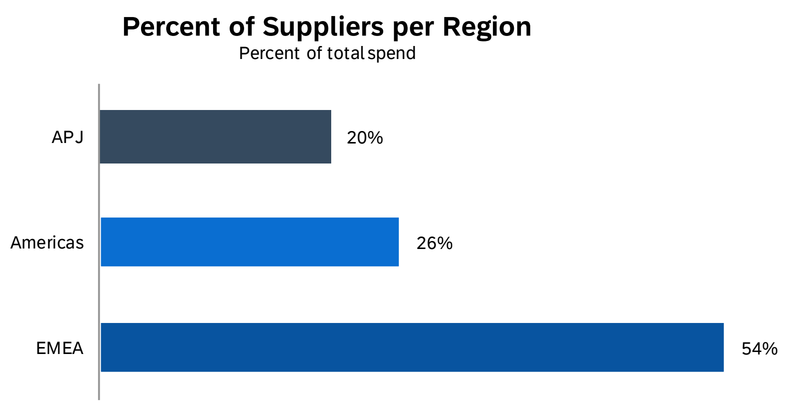
What We Buy and Where We Buy It From

We consider our suppliers to be key partners in our business success. In 2021, we spent approximately €5.3 billion in purchases from more than 15,000 suppliers worldwide (2020: approximately €5.1 billion from more than 14,700 suppliers worldwide). Within our five categories and our Sourcing Excellence Champions unit, we approach sustainability from different

[28] Car Fleet includes procurement relating to the global Company car fleet. IT Infrastructure procures products and services for SAP's cloud business such as network services and data center and co-location goods and services. Marketing & Travel supports topics related to SAP's marketing, events, merchandise, and business travel areas. Professional Services includes application and development services as well as financial and legal services. Workplace Infrastructure includes procurement for areas such as facility services, client services, and equipment, communication, and collaboration services. Sourcing Excellence Champions are responsible for the seamless execution of procurement and sourcing activities and are drivers for customer satisfaction and end user success.

angles: Workplace Infrastructure (example: reduce single-use plastics packaging and packaging material), Professional Services (example: CO_2-reduced mobility concepts, electronic contracts), Marketing & Travel (example: sustainable merchandise and events), IT Infrastructure (example: sustainable cooling of data centers), and Car Fleet (example: sustainable mobility concepts).





Social Procurement

We believe that diverse and sustainable businesses bring significant added value to SAP.

Establishing an inclusive supplier network – that is, minority enterprises defined by gender, ethnicity, disability, sexual orientation, and other characteristics, as well as certified social enterprises that focus their company's mission on making social impact – have become a key priority for SAP. We believe that our commitment to an inclusive, bias-free culture in our workplace must be mirrored in our approach to our supplier base.

Driven by our GPO, SAP's supplier diversity and social enterprise programs are an integral part of our transformation into a purpose-driven organization. These programs aim to build the capacity of diverse and social businesses to provide a fair chance at competing for contracts and are treated equally with other SAP suppliers. Utilizing the procurement skills and expertise within the organization, our GPO engages in skills-based volunteering to build the capacity of social enterprises in the Sustainable Growth of Revenues for International Development (S-GRID) program by the social purpose organization MovingWorlds.

To support these programs, the GPO established the Procurement with Purpose Ambassador Network. This network consists of volunteers within the GPO across the various procurement spend categories and regions; its functions include identifying new opportunities to engage with certified diverse suppliers and social enterprises, engaging with their regional procurement teams on current and upcoming activities, supporting Environmental Management System (EMS) audits for ISO 14001 certification, and acting as a multiplier for passing on Procurement with Purpose knowledge, learning, and training opportunities to the GPO.

As part of its Procurement with Purpose program, SAP was a corporate member of the following supplier and social enterprise certification organizations in 2021:

Supplier Diversity:

- National Minority Supplier Development Council (NMSDC)
- WEConnect International
- Disability:IN

Social Enterprise:

- Social Enterprise UK
- Buy Social Canada
- Social Traders (Australia)
- Social Enterprise NL
- Ākina Foundation
- Social Entrepreneurship Network Germany

These organizations enable the GPO to identify opportunities to engage with diverse suppliers and social enterprises, to support the 5 & 5 by '25 social procurement spend targets. This target is defined as 5% addressable spend with diverse suppliers and 5% addressable spend with Social Enterprises by year end 2025. As at the end of 2021, we had achieved €200.9 million (3.9%) diverse spend with 958 diverse suppliers in the United States.

To ensure that all diverse and social spend is captured, our GPO evaluates its supplier network to identify and register all existing certified diverse suppliers and social enterprises. Activities such as this and expanding our efforts with the Buy Social Corporate Challenge aim to enable SAP to fulfill our pledge and shift our addressable spend to diverse suppliers and social enterprises. With Ariba Network, we invite existing suppliers, as well as potential suppliers, to engage more in the area of diversity and social enterprises.

Improving Sustainability Through Practice

As part of our Third Party Risk Management (TPRM) program, we have created a Responsible Sourcing questionnaire to identify, manage, mitigate, and avoid sustainability risks within our supply chain. The risk domains evaluated include: Environmental, Human Rights, Diversity, Equity & Inclusion, Social Enterprise, and Health & Safety.

As outlined in the *Waste and Water* section, the GPO is one of the focus areas of the interdisciplinary Beyond Single-Use Plastics initiative. From addressing plastic packaging materials, to the items in our SAP Ariba catalog, our GPO is engaging with all relevant suppliers to remove single-use plastics from their packaging material and their offered product portfolio.

Waste and Water

Aspiring to a World of Zero Waste

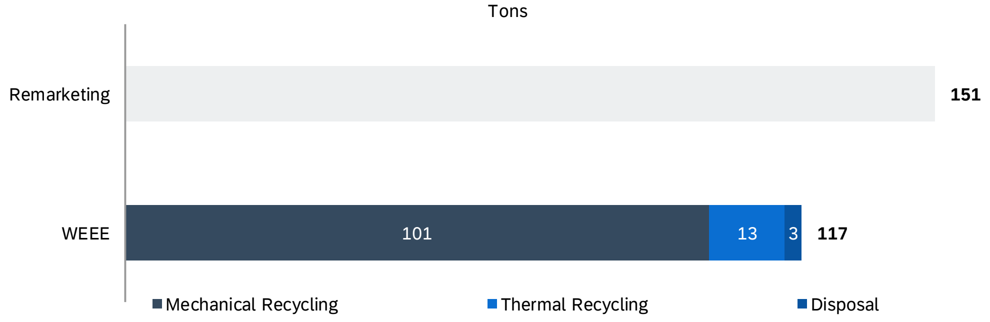
We believe in SAP's capabilities to help transform the economy into a low-carbon, circular system to reach a restorative and regenerative world of zero waste and significantly cleaner oceans by 2030. In alignment with SAP's Global Environmental Policy, our waste and water strategy and corresponding Company-wide initiatives aim to continuously reduce SAP's impact on the environment by generating less waste, reducing water consumption, and enabling our customer to do the same.

Managing Our Discarded Electrical and Electronic Devices

Waste of electrical and electronic equipment (WEEE, or e-waste) is one of the world's fastest-growing waste streams. As a global cloud company running data centers and office buildings across the world with a large amount of IT devices in place for our more than 100,000 employees, the ecological footprint of our electrical and electronic equipment (EEE) and their end-of-life treatment is a growing area of focus for SAP. Thus, the ultimate goal is to give our discarded electronic devices and assets a second life through refurbishment and remarketing. If the device is non-repairable or unmarketable, the subsequent priority is to recover valuable materials through mechanical recycling.

In multiple SAP locations, we cooperate with international and/or local IT asset lifecycle partners to refurbish, recycle, and dispose our EEE. In late 2020, we started to transform our e-waste reporting. Instead of reporting only scrapped e-waste, we began collaborating with our major IT asset lifecycle partners to establish a more distinguished (W)EEE reporting that enables us to see more precisely what type of end-of-life treatment was applied to our disposed IT assets and devices.

End-of-Life Treatment of Electrical and Electronic Equipment



Building Regenerative Business in a Circular Economy

In 2020, we made a commitment with our customers to strive for a significantly cleaner ocean by 2030 at the World Economic Forum in Davos, alongside the Ellen MacArthur Foundation, World Wildlife Fund, and the Global Plastic Action Partnership. To make the circular economy the de facto approach to material use and waste management, we are working with our customers and partners on solutions that address full-circle transparency across all material flows to enable three priorities: eliminate, circulate, and regenerate.

– Eliminate: Manage packaging and regulatory risks including extended producer responsibility obligations and plastic taxes holistically across global markets, and embed circularity principles into core busines processes to eliminate waste through the SAP Responsible Design and Production solution

- Circulate: Establish responsible sourcing and secondary marketplaces to stimulate an increase in value of materials for re-use as well as gain transparency into material flows across global supply networks. For instance, the SAP Rural Sourcing Management solution was used to engage waste collector communities ethically and responsibly in the first-mile acquisition of waste materials, while the GreenToken by SAP solution provides full multitier transparency of raw material flows, including co-mingled commodities.
- Regenerate: Leverage new regenerative business models to accelerate the shift from consumption to re-use models, by way of industry cloud innovations from SAP.

SAP also advocates global systems change at scale to accelerate the transition to a circular economy: in addition to endorsing meaningful proposals such as calling for the implementation of extended producer responsibility schemes for packaging, it enables citizens to find their role and best-fit solutions to help solve ocean plastic pollution, through the SHiFT platform developed in close collaboration with Emily Penn, ocean advocate and co-founder of the non-profit organization eXXpedition.

Finding Alternatives to Single-Use Plastics

To lead by example, SAP continued to execute on its original commitment to phase out single-use plastics by the end of 2020 as part of its global environmental policy's goals. The interdisciplinary 'Beyond Single-Use Plastics' initiative is based on identifying and eliminating single-use plastics and introducing more sustainable alternatives based on three principles: reduce waste, reuse items, and recycle materials.

Worldwide, SAP locations continued to collaborate with their suppliers and service providers to eliminate single-use plastic products such as bottles, cups, stirrers, straws, cutlery, and food packaging. For example, we rolled-out a digital reusable food packaging system for takeout, delivery, and convenience in all SAP locations with a canteen in Germany, and piloted the first two single-use plastic-free cafeteria kiosks at SAP's headquarters in Walldorf. At SAP locations in the United States and Canada, meanwhile, "Sustainability on the Go" kits with reusable utensils were distributed among the employees. The lessons learned and experiences of such practices will be used to refine the concepts and make them suitable for a global rollout.

We also continue to exclude single-use plastics in our internal procurement processes (such as for office supply packaging) as outlined in the *Sustainable Procurement* section. The established "Choose to Reuse" campaign aims to increase visibility and usage of reusable products by encouraging employees to take photos of reusable items of their everyday work and share them on social media.

Thanks to the continuous efforts of our global network of sustainability champions, our Environmental Management System (EMS) colleagues, and other internal stakeholders, and their persistent engagement of and communication with external suppliers and partners, we overcame our setbacks from 2020 caused by the COVID-19 pandemic and, by midyear 2021, had successfully phased out nearly all single-use plastics at the Company. The project was operationalized at the end of the second quarter 2021 and handed over to the three core lines-of-business in the area of facilities, procurement, and events to ensure SAP remains free of single-use plastics going forward.

Cutting Down on Further Residual Waste

In 2021, our continuous effort to improve waste segregation and evolve our processes at offices across the globe failed to pick up its original speed due to the persisting COVID-19 pandemic, as many sites remained closed or opened with major restrictions. Nonetheless, as part of our ISO 14001 program, SAP introduced the 'Too Good to Go' app in Germany. For a small fee, employees can pick up leftover lunches from the cafeterias to fight food waste. At SAP Mexico, the amount of waste segregation stations was further expanded, while SAP Philippines implemented systematic hazardous-waste management practices.

Furthermore, we reduced our paper usage by 88% (over 73 million pages) since 2009, despite a 125.7% increase in employee full-time equivalents over the same period. Initiatives such as the continuous global rollout of a secure pull-printing system (about 82,000 registered employees) or the implementation of double-sided, black-and-white printouts by default supported this decrease. In 2021, we also continued our approach of paperless contracting. By using the SAP Signature Management application by DocuSign, which enables electronic signatures, we were able to further cut down on the printing of paper-based contracts by about 185,600 pages in 2021 (2020: over 224,000 pages) – considering the same procurement contract types as in 2020. As most employees continued to work from home in 2021 due to the pandemic, the printing volume further decreased 42% (6.9 million pages) compared to 2020.

Using Water Efficiently

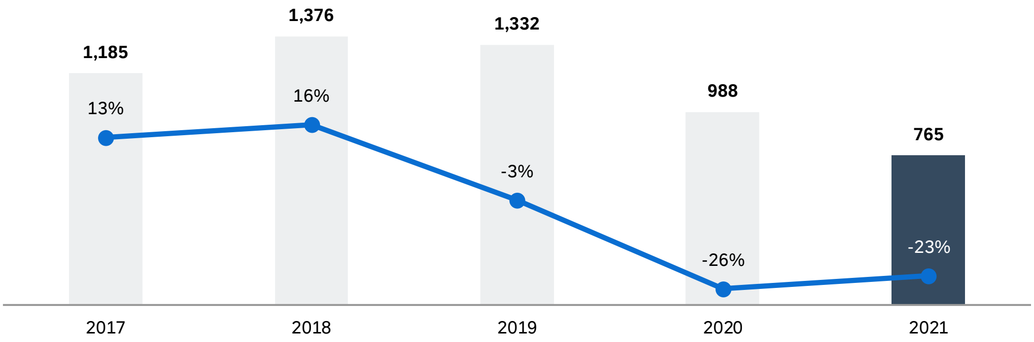
Climate change affects – and is affected by – global water resources and management. This is why we continue to use water as efficiently as possible in our data centers and offices even though our operations are not water-intensive. For example, in the data centers of our headquarters, we use adiabatic cooling (evaporative cooling) as well as a closed water circuit to minimize water consumption for cooling our server racks. In 2021, we set the target to reduce water consumption for cooling purposes in our headquarters data centers by at least 1,200 m^3 per year (achievement rate 2021: 100%). At our headquarters and other office locations, we use rain and run-off water for irrigation and toilets.

Based on the Aqueduct Water Risk Atlas of the World Resource Institute, we conducted a water risk assessment for our ISO 14001-certified sites. Twenty percent of these sites are located in high to extremely high water-risk regions. We address this issue with dedicated water management efforts. For instance, in Bangalore, India, we will install a rainwater harvesting system at the beginning of 2022 to improve water conservation. In Johannesburg, South Africa, smart water meters and a water catchment solution were installed to decrease municipal water consumption. In Ra'anana, Israel, we implemented a building management system (BMS) to monitor and track consumption, and various detectors were installed to limit irrigation on rainy days and to detect water leakages early on.

In 2021, our global water usage further decreased due to the prevailing COVID-19 pandemic and the strong reduction in the usage of our offices coupled with our implemented water-reduction measures.

Global Water Usage

Thousand cubic meters



Public Policy

SAP has developed trusting and transparent relationships with governments worldwide by cooperatively exploring the potential for information and communications technologies to spur economic growth, create jobs, and address societal challenges. This includes consideration of the role governments play as consumers as well as policy makers, and by supporting the digital transformation of the public sector to become more efficient, effective, and citizen oriented.

SAP engages with governments around the globe on various policy issues as well as on creating reasonable framework conditions for the adoption of new beneficial technologies or business models such as cloud computing, the Internet of Things, and Big Data.

SAP believes in transparency in the political process. Accordingly, we are registered in the European Transparency Register for interest representatives. In the United States, SAP is registered, and reports in compliance with, the federal Lobbying Disclosure Act. We are also registered in other countries, where this is required by local law.

Political Contributions

In accordance with the SAP Code of Business Conduct (CoBC), SAP does not support any political parties. By the laws of the United States, SAP employees exercise their right to operate a political action committee (PAC). The SAP America PAC is an independent, registered, and strictly regulated organization that allows eligible SAP employees to voluntarily contribute to the SAP America PAC in the United States to financially support candidates seeking public office at the state and federal levels. Consistent with U.S. laws, SAP exercises no control over or influence on the SAP America PAC. SAP America PAC expenditure figures are transparent and accessible through the U.S. Federal Election Commission Web site.

Memberships, Partnerships, and Commitments

To better understand and evolve sustainable performance, dialogue, and exchange of knowledge and different perspectives on a national, regional, and global level, is vital for SAP, both for our company and customers. Hence, SAP subscribes to, commits to, and routinely engages in a range of third-party organizations, including:

Organization	
Accounting Standards Committee of Germany (ASCG)	Advancing Women Executives
Alliance for Development and Climate	Alliance for Integrity
ASEAN Foundation	
Bitkom e.V.	Breakthrough Energy Ventures
Business Call to Action	Business for Social Responsibility
CEO letter on EU 2030 emissions targets	Climate Neutral Now
Deloitte Digital	Deutschland sicher im Netz e.V.
DIGITALEUROPE	
econsense e.V.	Ellen MacArthur Foundation (EMF)
EMF ERP Pledge	ESMIG
EU Green Deal CEO Pledge	European CEO Alliance
European Climate Pact Pledge	European Green Digital Coalition (EGDC)
European Roundtable for Industry (ERT)	
Federation of German Industries	
Global Alliance for YOUth	Global Business Alliance
GlobalGiving	Global Partnership for Sustainable Development Data
Gucci CEO Carbon Neutral Challenge	
Impact 2030 (founding member)	Industrial Internet Consortium
Information Technology Industry Council	
JA Worldwide (JA Americas and INJAZ Al-Arab)	
Klimabündnis Baden-Württemberg	
LEAF Coalition	Livelihood Funds
Metropolregion Rhein-Neckar	
National Chambers of Commerce	Network for Teaching Entrepreneurship (NFTE)
Ocean Plastics Leadership Network	
Race to Zero	RE100
Schmalenbach-Gesellschaft für Betriebswirtschaft e.V.	Science Based Targets initiative
Social Enterprise UK	Social Enterprise World Forum
Social Traders	Society of Corporate Compliance & Ethics
Sustainable Markets Initiative	
Terra Carta of the Sustainable Markets Initiative by Prince Charles	The Climate Pledge
The Conference Board, Inc.	The Female Quotient
The Green Web Foundation	Thrive Global

Organization

Together with Nature Principles for Nature-Based Solutions	Topolytics
TRACE International	Transparency International Germany
United Nations Global Compact (since 2000)	UN Global Compact SDG Ambition
UNICEF	Unternehmen für ein leistungsfähiges Klimapaket
Value Balancing Alliance e.V. (founding member)	Verband Deutscher Maschinen- und Anlagenbau e. V. (VDMA)
We Are Family Foundation	WEConnect International
WEF CEO Climate Leaders	WEF Commitment to Stakeholder Capitalism Metrics
WEF Global Battery Alliance	WEF Global Plastic Action Partnership
WEF 1t.org	WEF Stakeholder Capitalism Coalition
“We Mean Business” coalition	“We Mean Business” Letter to G20 Leaders
Wirtschaft macht Klimaschutz	Women in Data Science (WDS)
World Bank: "Put a Price on Carbon" statement	World Business Council for Sustainable Development (WBCSD)
World Economic Forum (WEF)	WWF OneSource Coalition

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.

Non-Financial Notes: Social Performance

General Information About Social Indicators

Boundaries

Our reporting takes two different perspectives into account: SAP as a company, which includes all our legal entities and operations and supply chain, and SAP as a solution provider enabling our customers. These boundaries are listed in detail in the GRI Standard Content Index.

Social Indicators

Data for our social indicators is collected and reported on a quarterly or annual basis and is audited at a reasonable assurance level.

Employee Retention

We define employee retention as the ratio of the average number of employees minus the employees who voluntarily departed, to the average number of employees, taking into account the past 12 months (in full-time equivalents, or FTEs). This ratio puts emphasis on employee-initiated turnover – in other words, we seek to measure how many employees choose to stay with SAP. As opposed to keeping a low turnover rate, we aim to keep our retention rate high. The number of voluntarily departed employees excludes the voluntary part of restructuring-related departures for more transparency and precise headcount management purposes.

Women in Management

We define “women in management” as the share of women in management positions as compared to the total number of managers, expressed by the number of individuals and not FTEs.

- Managers managing teams: Refers to managing teams of at least one employee or vacant positions.
- Managers managing managers: Refers to managing managers who manage teams.
- Board members

Employee Engagement

We define employee engagement as an index score of five items measuring the satisfaction and commitment of our employees, how proud they are of our company, and how strongly they identify with SAP.

It is calculated based on the average of the scores retrieved in each of the surveys we run for our engagement survey program “#Unfiltered.” Adopting the Experience Management (XM) philosophy of Qualtrics, we changed our engagement survey concept to a continuous listening approach that includes multiple data collections throughout the year. The overall program focuses on measuring the key people outcome indices Employee Engagement and Leadership Trust, as well as the organizational and team factors derived from the strategy that impact engagement. In the #Unfiltered survey in April, 73,598 employees participated (response rate: 72%), and in the #Unfiltered survey in

October, 70,386 participated (response rate: 68%). All employees were invited to take part in the 2021 #Unfiltered survey cycle.[29]

Business Health Culture Index

The Business Health Culture Index (BHCI) is an indicator of the extent to which SAP successfully offers employees a working environment that promotes health supporting their long-term employability and their active engagement in reaching our corporate goals. The index covers questions concerning how employees rate their personal well-being and the working conditions at SAP, including our leadership culture.

The BHCI is calculated based on the results of our “#Unfiltered” program (April 2021 survey).

[29] Eligible are all headcount-relevant employees (permanent contracts) and employees from acquired companies if their acquisition status allows for it. In Germany, additional non-headcount-relevant employees are eligible (temporary staff with tenure of more than six months, employees on long-term leave or parental leave, PhD students, and vocational trainees).

Non-Financial Notes: Environmental Performance

We understand environmental performance as the measurable outcome of SAP's ability to meet environmental objectives and targets set forth in our environmental policy. In this context, we determine SAP's greenhouse gas footprint (in the following called carbon emissions), total energy consumed, and data center electricity as the three key environmental performance indicators. Furthermore, we realize external reductions through self-generated renewable electricity and by purchasing offsets and Energy Attribute Certificates (EACs). Plus, we identify water consumption and the end-of-life treatment of SAP's electrical and electronic equipment as additional environmental aspects.

By looking at the energy usage and emissions throughout our entire value chain, we gain insights to help us manage our environmental performance and, in turn, help our customers to do the same.

Our gross carbon emissions for 2021 were 345 kilotons of CO_2 equivalents (CO_2e) (2020: 410 kilotons CO_2e), including all carbon emission categories of Scope 1 and 2, as well as selected categories of Scope 3 relevant for our carbon neutral target as described in *Methodology and Further Details* below. Our net carbon emissions (110 kilotons in 2021) are calculated by deducting purchased EACs, self-generated renewable electricity, and carbon offsets from our gross carbon emissions in the respective reporting period.

General Information

We consider the principle of Sustainability Context (the performance of the organization in the context of the limits and demands placed on environmental or social resources at the sectoral, local, regional, or global level) in a number of ways, such as by looking at global issues or trends including climate change and demographic shifts. For example, we assess our carbon emissions in the context of the emissions of the entire information and communications technology landscape, with particular focus on the abatement potential of the industry. When it comes to completeness, we recognize that while we comply with this principle in reporting on our own operations, we are still developing methodologies to reliably quantify our impact through our solutions.

Boundaries

Our reporting takes two different perspectives into account: SAP as a company, which includes all our legal entities and operations and supply chain, and SAP as a solution provider enabling our customers. These boundaries are listed in the *Content Index of the Global Reporting Initiative (GRI)*.

Reporting Approach

Data for our environmental indicators is collected and reported on a quarterly basis and is subject to external assurance for annual reporting.

Reporting on total energy consumed and data center electricity is based on the data collected for the calculation of our carbon emissions. All numbers are based on the metric system. Whenever we state "tons," we mean metric tons.

Carbon Emissions

Definition

We define the gross carbon emissions as the sum of all greenhouse gas emissions, measured and reported as CO_2e, while net carbon emissions include the compensation with renewable electricity and carbon offsets (see *External Reductions*).

Reporting Principles

SAP's preparation of the carbon emissions is based on the Corporate Accounting and Reporting Standard, the GHG (Greenhouse Gas) Protocol Scope 2 Guidance, and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard of the World Resources Institute/World Business Council for Sustainable Development. This approach conforms to the requirements of GRI Standard indicators 305-1, 305-2, and 305-3.

In alignment with the GHG Protocol Scope 2 Guidance, we report our net carbon emissions based on the two different calculation approaches: the classic location-based method and the market-based method.

Organizational Boundaries

SAP defines its organizational boundaries by applying the operational control approach as set out in the GHG Protocol.

Operational control is established when SAP has the full authority to introduce and implement its operating policies. The emissions of all operations over which the company has operational control and all owned, leased facilities, co-location data centers, and vehicles that the company occupies or operates are accounted for in the carbon emissions. They are based either on measurements or, where no measured data is available, on estimations and extrapolations.

A portion of SAP's leased facilities operates under full-service or multitenant leases, where SAP does not have access to actual energy consumption information. SAP includes these facilities in our definition of operational control and accounts for them by estimating related energy consumption.

To support the growing demand for SAP's cloud offerings, we subcontract computation power in local third-party data centers. Carbon emissions are approximated and included based on the consumed or extrapolated computation power.

In most instances, however, SAP has 100% ownership of its subsidiaries. Accordingly, the difference between applying the control versus the equity approach is about 0.8% based on SAP revenue. If investments in associates were included, the difference would be even smaller, about 0.6%.

Data Consistency

Methodology Change

We aim to continuously refine SAP's emissions calculation methodology and to increase the usage of measured instead of extrapolated input data. Methodology changes include changes in the source of activity data, additional new activity types, changes in emission factors, and changes in the methodology used to calculate carbon emissions. As we implemented our methodology approaches to the best of our current knowledge and ability, and consider such changes to be continuous desired progress, methodology changes will not lead to retrospective data adjustments. Hence, changes will be applied from the current year onward. The current year's methodology changes are made transparent in this chapter, particularly under *Methodology and Further Details*.

Error Correction

If a significant error is found in the current year that has an impact on the preceding year's emissions, it will be corrected not only in the current year but also retrospectively. An error is significant if it affects SAP's gross carbon footprint by more than 5%. No restatement due to an error correction of historical data was necessary in 2021.

Structural Changes

A structural change due to company acquisitions will be considered in our emission calculations by extrapolating the company's emissions based on FTEs for relevant emission categories.

For other types of structural or organizational changes, we use a significance threshold of 5% of total current-year emissions. A structural or organizational change that increases or decreases the total carbon inventory by 5% or more will trigger an adjustment of past years. A structural or organizational change that increases or decreases the total inventory by less than 5% will be considered insignificant and thus no adjustment will be made.

Financial Impact of Sustainability Measures

We annually measure the cumulative cost avoidance of our carbon emissions, compared to a business-as-usual scenario. Since 2015, our calculation approach uses a triennial rolling method.

Conversion Factors

The calculation of the carbon emissions is based on factors for conversion and extrapolation, provided by IEA, US EPA, UK DEFRA, Environment Canada, and GHG Protocol. SAP also uses extrapolation factors based on own reported data (of previous quarters) to determine an average consumption value per base unit (such as corporate cars: liters of fuel per car; facility: electricity consumption per m^2).

Where relevant, our conversion factors consider CO_2e for greenhouse gases. Global Warming Potential factors are based on the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). We report all our carbon emissions in CO_2 equivalents including the impact from CH_4 and N_2O in our target-relevant Scope 1, Scope 2, and Scope 3. The emission impact of refrigerants includes hydrofluorocarbons (HFCs) only. As SF_6 and PFCs mainly occur in chemical processes, they are not relevant for us. Since 2016, we annually review all our emissions and extrapolation factors and update them if required.

Due to office closures and travel restrictions during the COVID-19 pandemic, the 2021 extrapolation factors for the following emission categories were reduced by a factor considering the ratio between limited and business-as-usual operations: stationary combustion in facilities, refrigerants in facilities and corporate cars, mobile combustion in corporate cars, electricity in office buildings, purchased chilled and hot water, steam, and employee commuting.

Methodology and Further Details

Below you will find the different parameters contributing to our carbon emissions. We use "carbon emissions" as the common term for greenhouse gas emissions or CO_2e. Data coverage refers to the share of measured data (compared to extrapolated data) that is the basis for emissions calculation, such as kWh for electricity emissions or liters of fuel for corporate car emissions.

Scope 1

Refers to direct carbon emissions and is defined as emissions from sources that are owned or controlled by the organization. At SAP, the following areas are covered by Scope 1:

– **Stationary Combustion in Facilities**: Emissions caused by oil or gas combustion of heating systems and generators in SAP office buildings and data centers. Emission calculation is based on gas and oil consumption in kWh. Where no measured data is available, stable values (kWh/m^2) based on the previous year's stationary combustion consumption data are used for extrapolation (78% data coverage). In cases where no specific information is available, natural gas reported by local sites is assumed to be reported in Lower Heating Value. Besides gas and oil, we also began using wood pellets to produce thermal heat for our buildings. The Scope 1 emissions of wood pellets can be set to net '0', since the wood itself absorbs an equivalent amount of carbon emissions during the growth phase as the amount of emissions released through combustion. Still, to ensure complete accounting for all emissions caused, we document the direct carbon dioxide impact of burning wood pellets as 'outside of scopes' carbon emissions. In 2021, these emissions accounted for 0.375 kilotons of carbon emissions.

- **Refrigerants in Facilities**: HFC emissions caused by the use of refrigeration and air conditioning equipment. The emissions are extrapolated based on the number of server units in data centers and office space with an air conditioning (A/C) system (100% data coverage). All refrigerants are assumed to be HFC134a.
- **Mobile Combustion in Corporate Cars**: Emissions from fuel combustion of company cars. In the context of carbon reporting, the term company car refers to all cars for which SAP permanently covers the fuel costs. Emission calculation is based on fuel consumption. In 2021, 29 countries reported actual fuel data (93% data coverage); for other countries, stable values (liters/car) are used for extrapolation based on the number of corporate cars reported. The stable values for extrapolation are based on the previous year's carbon emissions data.
- **Refrigerants in Corporate Cars**: HFC emissions caused by air conditioning devices in company cars. Refrigerant emissions are based on an estimate of HFC1234yf emissions per car (in Europe) and HFC134a emissions per car (for the rest of the world) and are extrapolated based on the number of corporate cars reported (100% data coverage).
- **Mobile Combustion in Corporate Jets**: Emissions caused by business trips with SAP-owned or chartered jets. Emission calculation for SAP's own jets is based on actual fuel consumption (100% data coverage).

Scope 2

Refers to indirect carbon emissions and is defined as emissions from the consumption of purchased electricity, steam, or other sources of energy generated upstream from the organization. To determine SAP's global net emissions, we use the location-based method to calculate the Scope 2 emissions. Additionally, we disclose our market-based Scope 2 emissions in the *interactive chart generator*. At SAP, the following emission categories are covered by Scope 2:

- **Electricity in Office Buildings**: Emissions caused by the consumption of purchased electricity in office buildings. Calculation of emissions is based on building electricity consumption. Country-specific emission factors are updated annually. Where no measured data is available, stable values (kWh/m^2) based on the previous year's energy consumption data are used for extrapolation (75% data coverage).
- **Electricity in Data Centers:** Emissions caused by the consumption of purchased electricity in SAP-owned and -operated data centers. The calculation of emissions is based on data center electricity consumption (100% data coverage). CO_2e conversion factors are updated annually based on country-specific grid factors.
- **Purchased Chilled and Hot Water and Steam:** Emissions caused by the consumption of purchased heat or steam in office buildings (district heating). Calculation of emissions is based on consumption of district heating. Emission factors are updated annually. Where no measured data is available, stable values (kWh/m^2) based on the previous year's energy consumption data are used for extrapolation (38% data coverage).

Scope 3

Refers to other indirect carbon emissions and is defined as emissions that are a consequence of operations of an organization, but are not directly owned or controlled by the organization. Scope 3 emissions are divided into upstream and downstream emissions.

Upstream

Only selected upstream emissions are measured directly and hence included in our corporate carbon target. The following upstream Scope 3 carbon emissions are included in our target:

- **Business Flights**: Emissions caused by business trips by airplane. Calculation of emissions is based on actual distance travelled and actual costs spent (79% data coverage). This data is used to determine an average emission factor per euro spent based on short, medium, and long-haul flight emission factors. For CO_2 calculation, this factor is applied to actual controlling costs for business flights. Emission factors for business flights do not consider the radiative forcing factors.

- **Rental Cars**: Emissions caused by business trips by rental car. An average emission factor from rental cars is calculated based on actual distance traveled and actual costs spent (90% data coverage). This average emission factor is used for extrapolation based on the controlling costs.
- **Train Travel**: Emissions from business trips by train. An average emission factor from train travel is calculated based on actual distance traveled and actual costs spent (24% data coverage). This average factor is used for extrapolation based on the controlling costs. In Germany, business trips by train are considered carbon neutral as they are compensated with 100% green electricity by Deutsche Bahn.
- **Business Trips with Private Cars:** Emissions from business trips with employee-owned cars and company cars without fuel card. Carbon calculation is based on distance traveled with car (100% data coverage). Company car trips with fuel cards are excluded from this activity type.
- **Employee Commuting**: Emissions caused by commuting between home and work at an SAP office location. Considered are all modes of transport, excluding commuters with corporate cars. An SAP-global, system-integrated commuting survey about the distance to work and the mode of transport is conducted to collect relevant data. However, due to the COVID-19 pandemic, no new commuting survey has been conducted since 2018. Approximately 28,000 employees responded to the 2018 survey. These responses are the basis for carbon calculation of employee commuting in 2021. Commuting data for non-responding employees and quarterly updates are extrapolated based on the number of FTEs excluding those employees who own a company car (24% data coverage).
- **Electricity in External Data Centers**: Emissions caused by the consumption of purchased electricity in data centers not operated by SAP. An external data center (co-location) is a local computing center with server units running SAP software that is operated by an external partner. CO_2e conversion factors are updated annually based on country-specific grid factors. Electricity consumption for external data centers is extrapolated based on the consumed data center capacity and a power usage effectiveness (PUE) factor. Where no data is available, average factors are applied (78% data coverage).
- **Electricity Consumed by Hyperscale Services:** Emissions caused by the consumption of purchased electricity resulting from the usage of hyperscale services in providers' hyperscale data centers. Hyperscale data centers enable massive, efficient, and robust scalability of computing, system, and server architecture in order to respond to the increasing demand for cloud computing and Big Data solutions. Electricity consumption is calculated based on the total allocated server memory size (RAM) of all hyperscale services. A power conversion factor is used to convert the allocated RAM value into a server power value, and an average PUE factor is used to extrapolate the total hyperscale service electricity (100% data coverage).
- **Logistics**: Newly established category which consists of the following three emission sources: 1) Emissions caused by **mail** and **parcel**, 2) Emissions caused by the **consumption of paper**, and 3) Emissions caused by our customers **downloading software data** from our servers (originally a downstream emissions category). Due to their insignificant emissions impact, calculation is done based on an average factor 'carbon emissions per FTE.' This factor has been determined based on the emissions data of each category of the previous three years (0% data coverage).

Each year, we measure the following additional upstream Scope 3 carbon emissions based on the GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Purchased Goods and Services, Capital Goods, Waste Generated and Water Consumed in Operations, Other Fuel- and Energy-Related Activities. These emission categories are not included in our carbon neutral target but our science-based target. The emissions calculation is based on an estimate. Due to the link of our upstream emissions to operating expenses, we extrapolated these upstream figures for

2021 by multiplying the four key contributors to our previous year's upstream emissions with the year-over-year change of operating expenses between 2020 and 2021.

Downstream

In previous years, the only downstream emission category included in SAP's carbon neutral target was "Data Download." In 2021, this KPI was incorporated into the newly created upstream Scope 3 category "Logistics" as described above.

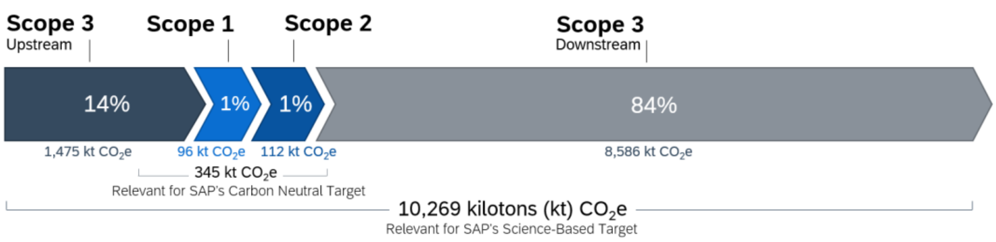
Use of Sold Products: The vast majority of our overall emissions stem from the use of our software (customers running SAP solutions on their hardware and premises). Due to our lack of control over our customers' IT landscapes, these emissions are not included in our carbon neutral target. Nonetheless, we have been calculating the emissions for indicative purposes for many years and take them into account for our science-based target.

The annual energy need per year is determined using a landscape simulation. It is extrapolated globally based on the number of productive installations and PUE. We use a PUE factor of 1.55, which is the average PUE of our external data centers. Emissions are calculated using a global electricity emission factor. Due to the special characteristics of software products, we chose an assessment of resource need per year. This deviates from the minimum boundaries as defined by the GHG Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard, which requires assessment and disclosure of "direct use-phase emissions of sold products over their expected lifetime." The calculation covers all of our major solutions, including on-premise software. Cloud solutions are not included, as they are part of internal, external, and hyperscale data center electricity emissions. Mobile solutions (for example, SAP apps running on customer IT equipment) are also not included. Calculation parameters will be adapted when significant technology changes occur.

Excluded Scope 3 Emissions

The following Scope 3 emissions sources are not applicable to SAP's business operations: Upstream Leased Assets, Processing of Sold Products, End-of-Life Treatment of Sold Products, Downstream Leased Assets, Franchises, and Investments.

SAP's 2021 Gross Carbon Emissions Along the Value Chain



Scope 1

Emission Categories
Stationary combustion and refrigerants in buildings
Mobile combustion and refrigerants in corporate cars
Mobile combustion in corporate jets

Scope 2

Emission Categories
Electricity in own buildings and data centers
Indirect energy in buildings (chilled / hot water, steam)

Scope 3

Upstream Emission Categories	Downstream Emission Categories
Business travel (train, plane, rental car, private car)	Use of sold products[30]
Employee commuting	(Data Download – incorporated in "Logistics")
Electricity in external data centers and hyperscalers	
Logistics	
Purchased Goods and Services[30]	
Capital Goods[30]	
Waste Generated and Water Consumed in Operations[30]	
Other Fuel- and Energy-Related Activities[2]	

External Reductions

SAP uses external reductions, such as purchases of EACs and certified voluntary "offsets," to achieve its carbon neutral target. Emission reductions are subtracted from gross Scope 1 to Scope 3 emissions to achieve a net carbon inventory.

Renewable Electricity

We define renewable electricity as electricity coming from renewable electricity sources such as wind, solar, hydro, and geothermal. The amount of renewable electricity used by SAP is calculated by adding the amounts of renewable electricity produced onsite by our own solar cells and covered by EACs.

As recommended by the Greenhouse Gas Protocol and CDP, we actively look for the best available quality and standards, which support renewable electricity projects that meet robust criteria in terms of environmental integrity, stakeholder inclusivity, and reporting and verification. We have developed a quality standard that defines key criteria for the procurement of EACs to drive change in the electricity market and to avoid the risk caused by low-quality products. The key characteristics of our renewable electricity purchasing guidelines are as follows:

– **Type of Renewable Electricity**: SAP only considers solar and wind for renewable electricity sourcing.

– **Installation**: The power plant producing the renewable electricity shall not be older than 10 years. In case of a renovation of an old power plant, the 10-year rule applies only to the additional electricity output due to efficiency increase. Furthermore, SAP does not consider EACs from government supported power plants.

– **Vintage**: The renewable electricity must be produced in the same year or the year preceding the reporting period to which it will be applied.

– **Accounting**: SAP uses the country-specific emissions factor to calculate the carbon reduction achieved by the EACs. EACs are considered independently to the electricity achieved through their procurement. SAP aims to consider the latest guidelines on EAC market boundaries.[31]

In addition, all of our purchased renewable electricity is EKOenergy-certified, a high-quality, internationally recognized not-for-profit ecolabel for renewable energy installations that fulfill additional sustainability criteria. Through the purchase of EKOenergy-certified electricity, we also contribute to EKOenergy's Climate Fund, which finances solar projects tackling energy poverty.

To calculate the carbon reductions of the EACs, the amount of purchased electricity is multiplied by the country-specific carbon factor derived from the location where the renewable electricity was

[30] Not included in SAP's carbon neutral target but in SAP's science-based target.

[31] In 2021, we achieved an EAC market boundary alignment of 87% based on the criteria of RE100 and GHG Protocol Scope 2 Guidance.

produced. The renewable electricity is only considered if confirmed by an official certificate or written confirmation of our respective EAC suppliers (100% data coverage).

In the net carbon emissions, the purchased as well as the produced renewable electricity is already deducted from our Scope 2 and Scope 3 electricity emissions.

Carbon Offsets

Carbon offsets represent a unit of CO_2e that is reduced, avoided, and removed to compensate for emissions occurring elsewhere. We continuously refine our internal carbon emissions calculation methodology and uphold high requirements for dealing with carbon offsets:

- In 2021, we did not require our financial contribution to the LCF to offset our emissions. Instead, we used an investment in a nature-based forest project to compensate for a portion of our business flights as well as 100% of the following emissions categories: corporate cars using Novofleet's climate fuel cards, corporate jets, business trips with private cars, and logistics.
- By charging an internal carbon price for business flights and investing in the forest project, we were able to offset 85% (10.7 kt) of our business flights emissions in 2021.

A requirement for carbon offsets is the application of the Verified Carbon Standard (VCS) and equally-high quality standards. SAP ensures that the quantified carbon emission reductions from offsets are credible and that they meet four key principles:

- **Real**: The carbon reductions represent actual emission reductions that have already occurred.
- **Additional**: The carbon reductions are surplus to regulation and would not have happened without the offset.
- **Permanent**: The carbon reductions are permanent or have guarantees to ensure that any losses are replaced in the future.
- **Verifiable**: The performance of the carbon reduction projects can be readily and accurately quantified, monitored, and verified.

In the net carbon emissions, purchased offsets are already deducted from our gross emissions.

Total Energy Consumed

We define total energy consumed as the sum of all energy consumed in SAP's own operations and value chain (Scope 1, 2, and 3), including energy from renewable sources. It is calculated based on the consumption data obtained through our measurements for the carbon emissions and is the sum of energy consumption from stationary combustion in facilities, mobile combustion in corporate cars, mobile combustion in corporate jets, electricity in offices, electricity in data centers, purchased chilled water, purchased hot water, and purchased steam, and electricity in external data centers (co-locations and hyperscalers).

Data Center Electricity

We define data center electricity as the sum of electricity consumed to provide internal and external computation power in SAP data centers, contracted third-party data centers, and hyperscale data centers. A data center is any global, regional, or local computing center (location with any number of server units) that is part of our global IT infrastructure strategy.

Additional Environmental Aspects

Water

By water, we mean the total amount of freshwater withdrawn for our office buildings and data centers. Data is based on measurements and estimations from sites. Data was provided for 65% of the total water consumption; remaining data is extrapolated based on square meter footage.

End-of-Life Treatment of SAP's Electrical and Electronic Equipment

The discarded electrical and electronic equipment (EEE) ranges from laptops, peripherals, and mobile devices to servers. Our international and local IT asset lifecycle partners test the collected EEE to determine its end-of-life treatment. In doing so, EEE is channeled either into the remarketing or waste stream. We define these streams as follows:

1. Remarketing (top priority): Refurbishing and reselling functioning EEE to give it a second life
2. Waste: By waste of electrical and electronic equipment (WEEE) or e-waste, we mean any electric devices and assets discarded in our offices and data centers that cannot be refurbished or remarketed due to outdatedness or unrepairable dysfunctions.

Within the WEEE stream, we distinguish between the following processing treatments:

– Mechanical recycling (secondary priority): Extracting raw materials to preserve and reuse them (such as plastics, metals, and rare earths)

– Thermal recycling: Generating energy through the incineration of waste

– Landfill: Disposing waste on a landfill site; this treatment option has to be avoided under all circumstances.

Data is based on the weight of the devices. As remarketed EEE is reported in items (and not in weight), the IT asset lifecycle partners use average item weights to determine the remarketing weight. To determine the share of end-of-life treatment practices (remarketing vs. mechanical vs. thermal recycling vs. landfill), our key IT asset lifecycle partners aim to use the specific quotas of the recycling sites. If this data is not available, regional quotas or other available country quotas are used for approximation.

Some of our SAP locations collaborate with local providers in addition to our large IT remarketing and recycling partners – or even exclusively. To supplement our EEE / WEEE reporting in the *Waste and Water* section, we collect local providers' e-waste data from all locations that are in scope of our environmental management system. The remaining data of locations not covered is extrapolated based on full-time equivalents. Consequently, 16 tons of WEEE was collected in 2021 on top of our WEEE reported in the *Waste and Water* section. In total, 133 tons of WEEE was collected in 2021 (98% data coverage).

GRI Content Index and UN Global Compact Communication on Progress

The social and environmental data and information included in the SAP Integrated Report 2021 has been prepared in accordance with the GRI Standards: Core option.

The 15 material topics in this GRI Content Index were selected based on the comprehensive *materiality assessment* conducted in 2020 and reviewed in 2021, and reflect topics that have been identified as sustainability challenges and *material topics by the GRI Standards*. We have clustered these topics according to the relevant *non-financial matters* set out in the German Commercial Code (Handelsgesetzbuch, HGB) (exception: the material topic "ethics and compliance" is not clustered under "Anti-corruption and bribery matters" as the corresponding GRI standards are defined more broadly). The two material management practices 'Governance' and 'Transparency' are not listed as individual disclosures below as they have already been fulfilled through the universal GRI standards 102: General Disclosures and/or GRI 103: Management Approach.

To meet our commitment to the UN Global Compact (UN GC) initiative, this chapter serves as an annual Communication on Progress (CoP) outlining how SAP supports and upholds the Ten Principles of the UN GC. We also present the interconnection between the GRI topic-specific disclosures that are material to SAP and the 17 United Nations Sustainable Development Goals (UN SDGs).

Audit Scope

The content of the column UN SDGs was not subject to the independent limited assurance engagement of our external auditor.

General Standard Disclosures

	Links and Content	External Assurance	UN GC Principles
102-1	*Strategy*	✓	
102-2	*Strategy*	✓	
102-3	*Strategy*	✓	
102-4	*Strategy* *Note (G.9) Scope of Consolidation, Subsidiaries and Other Equity Investments*	✓ ✓	
102-5	*Strategy*	✓	
102-6	*Financial Performance: Review and Analysis* *Note (C.1) Results of Segments* *Strategy* *http://www.sap.com/industries.html*	✓ ✓ ✓	
102-7	*Consolidated Financial Statements IFRS* *Financial Performance: Review and Analysis* *Note (G.9) Scope of Consolidation, Subsidiaries and Other Equity Investments* *Note (B.1) Employee Headcount*	✓ ✓ ✓ ✓	

	Links and Content	External Assurance	UN GC Principles
102-8	*Note (B.1) Employee Headcount*	✓	6
	Chart Generator		
	Employees and Social Investments	✓	
	About This Report	✓	
	At SAP, we consider the portion of contingent workers as not significant.	✓	
102-9	*Strategy*	✓	1
	Sustainable Procurement	✓	
102-10	*Note (IN.2) Implications of the COVID-19 Pandemic*	✓	
	Financial Performance: Review and Analysis	✓	
	Strategy	✓	
	Sustainable Procurement	✓	
102-11	We support a precautionary approach towards environmental management, which is why we have implemented an environmental management system across various SAP locations worldwide according to ISO 14001. While we see little apparent risk for our own operations, we do see an opportunity to help our customers anticipate and manage this risk in a more agile and responsive fashion through effective product lifecycle management and sustainable design.	✓	7
	Sustainability Management	✓	
	Strategy	✓	
	Products, Research & Development, and Services	✓	
	Sustainability Management	✓	
102-12	*Memberships*		
102-13	*Memberships*		
102-14	*Letter from the CEO*		
102-16	*Business Conduct*	✓	10
	Employees and Social Investments	✓	
102-18	*Corporate Governance Report*		
	Sustainability Management	✓	
102-40	*Stakeholder Engagement*	✓	
102-41	*Stakeholder Engagement*	✓	
102-42	*Stakeholder Engagement*	✓	
	Business Conduct	✓	
	Human Rights and Labor Standards	✓	
102-43	*Stakeholder Engagement*	✓	
	Business Conduct	✓	
	Human Rights and Labor Standards	✓	
102-44	*Stakeholder Engagement*	✓	
	Employees and Social Investments	✓	
	Customers	✓	
	Products, Research & Development, and Services	✓	
	Report by the Supervisory Board	✓	
102-45	*Note (G.9) Scope of Consolidation, Subsidiaries and Other Equity Investments*	✓	
	All entities are covered by the report.		
102-46	*About This Report*	✓	
	Materiality	✓	
	Non-Financial Notes	✓	
102-47	*Materiality*	✓	

	Links and Content	External Assurance	UN GC Principles
102-48	*Materiality* *Non-Financial Notes*	✓ ✓	
102-49	*Non-Financial Notes* *Materiality*	✓ ✓	
102-50	*About This Report*	✓	
102-51	March 4, 2021	✓	
102-52	Annual Reporting Cycle	✓	
102-53	*Financial Calendar and Addresses*		
102-54	*About This Report*	✓	
102-55	*GRI Content Index*	✓	
102-56	*About This Report* *Independent Assurance Report*	✓ ✓	

Topic-Specific Disclosures

Ethics and Compliance

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Business Conduct* *GRI Content Index*		✓ ✓		
103-2	*Business Conduct* *SAP's Global Tax Principles*		✓		10
103-3	*Business Conduct* *SAP's Global Tax Principles*		✓		
205-1	*Business Conduct* *Risk Management and Risks* In alignment with the different legal requirements in various countries, and as per SAP Global Risk Management Policy and supporting processes, SAP, together with legal advisory services as deemed appropriate, perform risk assessments globally. These include cross-business topics and the evaluation of risks related to compliance, bribery, and corruption. Overall, our corporate risk assessments focus on compliance topics. In addition, 45% of all audits concluded in 2021 under the risk-based audit plan are compliance-relevant audits. As part of this process, a regular and dedicated focus is also placed on identifying high-risk countries to identify deep dive reviews and necessary mitigations accompanied by regular monitoring. Furthermore, ad hoc audits are performed if there are grounds of suspicion. This regular auditing is a vital component of ensuring compliance worldwide in our business processes and identifying weaknesses or non-compliance to derive adequate measures. Given the holistic approach of our compliance risk assessment, SAP does not report on the number of audits solely related to corruption.	SAP	✓ ✓ ✓	16	10
206-1	*Note (G.3) Other Litigation, Claims, and Legal Contingencies*	SAP	✓	16, 17	
207-1	*SAP's Global Tax Principles*	SAP		9, 11, 16	
207-2	*SAP's Global Tax Principles*	SAP		9, 11, 16	
207-3	*SAP's Global Tax Principles*	SAP		9, 11, 16	

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
207-4	As a German company, we report our tax expense separately for Germany and the rest of the world. We are confident that this information meets our stakeholders' demands.				
419-1	*Note (G.3) Other Litigation, Claims, and Legal Contingencies*	SAP	✓	16, 17	

Environmental Matters

Energy

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Energy and Emissions* *GRI Content Index*		✓ ✓		
103-2	*Energy and Emissions* *Sustainability Management*		✓ ✓		
103-3	*Energy and Emissions* *Sustainability Management*		✓ ✓		
302-1	*Energy and Emissions* *Non-Financial Notes* *Chart Generator*	SAP	✓ ✓	7, 8, 12, 13	7, 8
302-2	*Energy and Emissions* *Non-Financial Notes*	SAP + external parties	✓ ✓	7, 8, 12, 13	7, 8
302-3	*Energy and Emissions* *Non-Financial Notes* *Chart Generator* *Five-Year Summary* The ratio uses only energy consumption within the organization.	SAP	✓ ✓ ✓ ✓	7, 8, 12, 13	8
302-4	*Energy and Emissions* *Non-Financial Notes* Allocation of energy consumption reductions to conservation and efficiency initiatives cannot be presented precisely due to overlapping effects (such as reductions caused by the COVID-19 pandemic).	SAP	✓ ✓ ✓	7, 8, 13	8

Climate Change and Air Quality

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Energy and Emissions* *GRI Content Index*		✓ ✓		
103-2	*Energy and Emissions* *Sustainability Management*		✓ ✓		
103-3	*Energy and Emissions* *Sustainability Management*		✓ ✓		
305-1	*Energy and Emissions* *Non-Financial Notes* *Chart Generator*	SAP	✓ ✓	3, 12, 13, 14, 15	7, 8

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
305-2	*Energy and Emissions* *Non-Financial Notes* *Chart Generator*	SAP	✓ ✓	3, 12, 13, 14, 15	7, 8
305-3	*Energy and Emissions* *Non-Financial Notes* *Chart Generator*	External parties	✓ ✓	3, 12, 13, 14, 15	7, 8
305-4	*Chart Generator* *Non-Financial Notes*	SAP + external parties	✓	13, 14, 15	8
305-5	*Energy and Emissions* *Non-Financial Notes* *Chart Generator* Allocation of carbon emission reductions to avoidance and efficiency initiatives cannot be connected precisely due to overlapping effects (such as reductions caused by the COVID-19 pandemic).	SAP + external parties	✓ ✓ ✓	13, 14, 15	8, 9
305-6	As a software company with no production sites, emissions of ozone-depleting substances (ODS) are not material to SAP.		✓	3, 12, 13, 14, 15	7, 8
305-7	We report all our carbon emissions in CO_2 equivalents (CO_2e) including the impact from CH_4, N_2O, and HFCs in our Scope 1 and 2 emissions. We do not provide a breakdown. As a software company with no production sites, sulfur oxides (SOx) and other significant air emissions are not material to SAP.		✓	3, 12, 13, 15	7, 8

Ressource Efficiency and Waste

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Energy and Emissions* *Waste and Water* *GRI Content Index*		✓ ✓ ✓		
103-2	*Energy and Emissions* *Waste and Water* *Sustainability Management*		✓ ✓ ✓		
103-3	*Waste and Water* *Sustainability Management*		✓ ✓		
306-1	*Waste and Water*	SAP + external parties	✓	12, 13, 14	7, 8
306-2	*Waste and Water* *Non-Financial Notes* Suppliers must acknowledge and adhere to the SAP Supplier Code of Conduct, which expects compliance with legal obligations. In addition, our ISO 14001-certified locations monitor regulatory requirements through a legal register. We also work on integrating specific waste-related legal demands into supplier contracts of our IT asset lifecycle partners.	SAP + external parties	✓ ✓ ✓	12, 13, 14	7, 8
306-3	As a software company with no production sites, the generated total weight of waste is considered non-material. Considering our business model, we only perceive electrical and electronic waste as relevant. *Waste and Water* *Non-Financial Notes*	SAP + external parties	✓ ✓ ✓	12, 13, 14	7, 8

Employee Matters

The management approaches for the material topics 'employee rights,' 'fair and inclusive workplace,' 'talent development,' and 'employee engagement' strongly overlap. This is why we decided to combine them in one joint table, including their corresponding topic-specific disclosures:

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	Nothing has a greater impact on our long-term success than the creativity, talent, commitment, health, and well-being of our people. Their ability to innovate and understand the needs of our customers has the potential to deliver sustainable value to our Company and our society. *Employees and Social Investments* *GRI Content Index*		✓ ✓ ✓		
103-2	*Sustainability Management* *Employees and Social Investments*		✓ ✓		1, 2, 6
103-3	*Sustainability Management* *Employees and Social Investments*		✓ ✓		
Women in Management	*Employees and Social Investments* *Chart Generator*	SAP	✓	5	6
Employee Engagement	*Employees and Social Investments*	SAP	✓		6
401-1	*Employees and Social Investments* *Note (B.1) Employee Headcount* *Chart Generator*	SAP	✓ ✓	8	
404-1	*Employees and Social Investments* SAP offers a wide portfolio of learning and development offerings to help all of our employees to upskill and accelerate their career. Every individual employee is encouraged to learn and expand their skills – independent of employee level/category or gender. We align training activities according to the needs of each employee and they can freely choose what makes sense for them.	SAP	✓ ✓	4, 5, 8, 9, 10	
404-2	*Employees and Social Investments* SAP has dedicated as well as volunteer staff that supports generational intelligence on matters of continued employability, managing career endings, and cross-generational integration and collaboration. These experts work to continuously improve processes and design programs that sustain employability for as long as possible. They provide training for cross-generation collaboration, facilitate flexible career endings for employees (such as part-time options), and keep employees connected with the Company after retirement (the "HR Lounge – Mature Talents" consultation session, for example, provides a platform for our experienced, long-term employees in Germany to gain insight on sharing experiences across generations, career development, transitioning to retirement, and so on).	SAP	✓ ✓	4, 5, 8, 9, 10	6
404-3	*Employees and Social Investments* With our performance appraisal approach called SAP Talk, our employees receive regular performance and development reviews – independent of gender and employee category.	SAP	✓ ✓	5, 8, 10	6
405-1	*Corporate Governance Statement* *https://www.sap.com/investors/en/governance/supervisory-board.html* *Chart Generator*	SAP	✓	5, 8, 10	1, 2, 6

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
407-1	*Human Rights and Labor Standards*	SAP + external parties	✓	8	1, 2, 3
	We are not aware of any operations or suppliers in which the right to exercise freedom of association and collective bargaining may be at significant risk.		✓		
	Sustainable Procurement		✓		

Well-Being, Health, and Safety

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	Nothing has a greater impact on our long-term success than the creativity, talent, commitment, health, safety, and well-being of our people. Their ability to collaborate, innovate, and understand the needs of our customers has the potential to deliver sustainable value to our company, customers, and society.		✓		
	As an enterprise software company, SAP does not have the occupational health and safety issues associated with manufacturing or heavy-industry jobs. Most of our people have sedentary, intellectually demanding jobs in a constantly changing business environment that requires considerable flexibility and agility. Therefore, typical health and safety management issues at SAP include ergonomic and safe workplaces, stress management, self-management, work-life balance, travel medicine, and general medical prevention.				
	Employees and Social Investments		✓		
	GRI Content Index		✓		
103-2	*Sustainability Management*		✓	1, 3, 6	
	Employees and Social Investments		✓		
	Global Health and Safety Policy				
	Conditions in which people live up to their full potential – now and in the future of work – are mainly defined by the organization's leadership style and working culture. We believe that there can be no organizational health without "individual health." SAP and its leaders take ownership for workplaces and a caring culture that foster physical health, safety, and mental well-being, while every employee is enabled and encouraged to take care of their individual health.		✓		
	SAP Health and Well-Being team (led by SAP's chief medical officer), together with their partners in Human Resources, Real Estate and Facilities, Occupational Safety and Personal Security, provide the information, education, and support to foster a healthy working culture and a supporting environment for all people. In doing so, we enable the organization to be a role model in safe, healthy, and sustainable people management.				
103-3	*Sustainability Management*		✓		
	Employees and Social Investments		✓		
	Non-Financial Notes: Social Performance		✓		
	SAP provides manifold feedback opportunities and encourages its people to get involved and shape SAP's caring culture and working conditions to "tell it like it is," and in so doing, help us improve where needed. Our success is tracked through the Business Health Culture Index (BHCI) and the Stress-Satisfaction Score (measured by regular employee surveys, which revealed that job satisfaction was equal or higher than the perceived stress for about 70% of SAP participants in 2021).		✓		

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
403-1	SAP has developed an internal health management system called “RUN HEALTHY” which is built on International Labour Organization Occupational Health and Safety (ILO-OSH) standards. “RUN HEALTHY” enables SAP organizations to assess their maturity state on health, well-being, and safety, to develop and drive targeted initiatives across their organizations, and to boost their local Business Health Culture Index, employee engagement, and employer attractivity. The implementation is voluntary and driven by the managing director according to country/line-of-business needs. We give all workers access to global offerings which are complemented according to local business needs. Local RUN HEALTHY councils are key in the process to self-assess maturity levels in the light of covering local requirements and global standards. RUN HEALTHY is expanded on a continuous basis. In addition, SAP engages with its suppliers, partners, and customers to promote the topics of people health and occupational safety beyond the boundaries of our company.	SAP + external parties	✓	3	
	SAP Supplier Code of Conduct				
	Safety Instructions for Contractors				
403-2	*Employees and Social Investments: How We Measure and Manage Our Performance*	SAP + external parties	✓	3	1, 2
	Employees and Social Investments: Health and Well-Being		✓		
	Non-Financial Notes: Social Performance		✓		
	Sustainable Procurement: Improving Sustainability Through Practice		✓		
	Global Health and Safety Policy				
	Human Rights Commitment Statement				
	Pledge to Flex				
	SAP regularly conducts health risk assessments on global level with reporting on all manager levels. Mental health is key to SAP’s ability to provide innovative solutions for our customers. SAP has a long tradition in taking action against stigmatization and in taking care of prevention and case management. With the Stress-Satisfaction Score SAP is monitoring an early-watch KPI to measure resilience on people level and to detect fields of action on individual and organizational level. In 2020, we established a COVID-19-related risk assessment to identify stress factors while working remote. An SAP Analytics Cloud-based “Country Health Dashboard” supports the identification of health risks on country level. SAP relies on the enablement of internal multiplier networks such as the Health Ambassador Network, and external trainings and certifications to ensure health & safety competence across the organization. Our workers can use various tools to report concerns as outlined in the Human Rights Commitment Statement, and are protected against retaliation. This document is core to our people-related policies, such as the Global Health and Safety Policy. SAP's Pledge to Flex empowers employees to choose when and where to work best while balancing business requirements and personal needs. This approach enables employees to avoid and circumvent hazardous workplace situations.		✓		
403-3	*Employees and Social Investments: How We Measure and Manage Our Performance*	SAP	✓	3	
	Employees and Social Investments: Health and Well-Being		✓		
	By regularly conducting surveys, we continuously receive insights which enable SAP and particularly its Health and Well-Being organization, together with its strong partners in Human Resources, Real Estate and Facilities, Occupational Safety and Personal Security to enforce and adjust its initiatives and counteract adverse developments in time. SAP’s Health and Well-Being team provides global frameworks and a comprehensive health and well-being portfolio to enable SAP’s business with its organizations at all levels to run healthy. Please also refer to GRI 403-6.		✓		

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
403-4	SAP's RUN HEALTHY management system includes a self-assessment conducted by a cross-functional staffed council in order to drive tailor-made and effective local programs and initiatives. Digital solutions are leveraged to guide SAP's people to their relevant health content by considering individual needs and location, and to gather their feedback to drive highest standards of quality, as we do with the permanent Qualtrics-based Health Feedback Survey across all health and well-being offerings. A RUN HEALTHY council is the execution entity for the RUN HEALTHY program (see GRI 403-1 for its purpose and target). It meets regularly (usually quarterly) and contains the RUN HEALTHY lead, different line-of-business representatives, such as from the Human Resources, Facility, and Health departments, as well as an employee representative. The program is being expanded step by step; not all SAP employees are represented by the RUN HEALTHY program.	SAP	✓	3	
403-5	At SAP, we offer a flexible training and enablement portfolio (such as SAP's learning platform Success Map) to enable our people to thrive in the future of work, foster healthy working habits, and become multipliers. In addition to flagship sessions on how to manage stress and foster a healthy work lifestyle, new classes and Web seminars were introduced with special focus on the pandemic situation to help our people adapt to the sudden change in working conditions. Specific offerings for leaders support caring for people's health, safety, and well-being.	SAP + external parties	✓	3	
403-6	*Employees and Social Investments: Health and Well-Being* *SAP Health and Well-Being: Fostering a Healthy Culture* At SAP, we offer a wide range of health and well-being services to our employees, ranging from general guidance on how to be more active and to deal with stress and challenging situations in- and outside SAP, conducting health and people days, consultation on ergonomic workplace set-up to prevent back pain, to local vaccination initiatives. Employees have access to these services and are informed about them in SAP's internal employee portal, monthly newsletters, live sessions, and campaigns, or by contacting the SAP Health team directly. In addition, we have Web-based tools such as the Qualtrics-based SAP Health Navigator which guides SAP people toward health offerings and tips according to their individual needs. The Run Your Way program on our Fit@SAP activity challenge platform encourages people to integrate more physical activity into their daily life.	SAP + external parties	✓ ✓		
403-7	As outlined in GRI 403-2, we have various approaches to identify negative occupational health and safety impacts such as the BHCI and Country Health Dashboard as well as various channels to report concerns and incidents. In addition, to ensure the health, safety, and well-being of our employees worldwide, SAP runs dedicated crises management and business continuity frameworks. To safeguard our people on business travels, SAP ensures medical and security assistance through a Travel Emergency Assistance Program. *Sustainable Procurement: Improving Sustainability Through Practice*	SAP + external parties	✓ ✓	3	

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
403-10	Fatalities and injuries are not a material issue for SAP, as employees work in an office environment. Please refer to GRI 103-1 for the main types of work-related ill health. The identification of work-related hazards that pose a risk of ill health (such as via the BHCI or the RUN HEALTHY program), as well as the actions taken to eliminate/ minimize these hazards and risks, are outlined in GRI 403-1 to GRI 403-7. Internally, we track and monitor an SAP illness rate (in %) which is defined as the total number of days absent (including absences shorter than 3 days) / scheduled workdays per year (250 days) x 100. In 2021, SAP had a global illness rate of 1.7%.[32] In 2021, our Stress Satisfaction Score evaluation (see GRI 403-2) confirmed lower stress levels on average compared to satisfaction. Furthermore, we leverage the company reports from our external Employee Assistance Program (EAP) providers to recognize health trends and to derivate appropriate actions. For non-employee workers, we require our suppliers and sub-suppliers to uphold health and safety standards via our Global Supplier Code of Conduct. In addition, in Germany we have safety Instructions for contractors in place.	SAP	✓	3	

Respect for Human Rights

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Human Rights and Labor Standards* *GRI Content Index*		✓ ✓		
103-2	*Human Rights and Labor Standards*		✓		
103-3	*Human Rights and Labor Standards*		✓		
407-1	*Human Rights and Labor Standards* We are not aware of any operations or suppliers in which the right to exercise freedom of association and collective bargaining may be at significant risk. *Sustainable Procurement*	SAP + external parties	✓ ✓ ✓	8	1, 2, 3
408-1	*Human Rights and Labor Standards* We are not aware of any operations or suppliers being at significant risk for incidents of child labor. *Sustainable Procurement*	SAP + external parties	✓ ✓ ✓	3, 8	1, 2, 5
409-1	*Human Rights and Labor Standards* We are not aware of any operations or suppliers being at significant risk for incidents of forced or compulsory labor. *Sustainable Procurement*	SAP + external parties	✓ ✓ ✓	3, 8, 10	1, 2, 4

Security, Privacy, and Data Protection

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Security, Data Protection, and Privacy* *GRI Content Index*		✓ ✓		
103-2	*Security, Data Protection, and Privacy* *SAP Trust Center: Data Protection and Privacy* *SAP Privacy Statement*		✓ ✓		

[32] Employees of recently acquired companies and SAP Israel as well as workers who are not SAP employees are excluded.

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-3	*Security, Data Protection, and Privacy* *SAP Trust Center: Data Protection and Privacy*		✓ ✓		
418-1	*Security, Data Protection, and Privacy* We have not received any substantiated complaints concerning breaches of customer privacy, neither from outside parties nor regulatory bodies. As a result, we have no identified leaks, thefts, or losses of customer data.	SAP + external parties	✓ ✓	12, 16	1

Customer Matters

Customer Responsibility

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	At SAP, we are committed to our purpose of helping the world run better and improving people's lives. To this end, we aim to create innovations that help accelerate economic prosperity, drive positive social impact, and safeguard the planet. *Strategy* *GRI Content Index*		✓ ✓ ✓		
103-2	*Sustainability Management* *Customers* *Performance Management System*		✓ ✓ ✓		
103-3	*Sustainability Management* *Customers* *Performance Management System*		✓ ✓ ✓		
416-1	*Human Rights and Labor Standards* As a software company without any physical products or production sites, customer health and safety is mainly related to the responsible usage of technology, especially artificial intelligence. *Guiding Principles for Artificial Intelligence*	SAP + external parties	✓ ✓	3	
Customer Loyalty	*Customers* *Performance Management System*	SAP	✓ ✓	4, 5, 8, 10	

Product Responsibility

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	At SAP, we are committed to our purpose of helping the world run better and improving people's lives. To this end, we aim to create innovations that help accelerate economic prosperity, drive positive social impact, and safeguard the planet. *Strategy* *GRI Content Index*		✓ ✓ ✓		
103-2	*Sustainability Management* *Strategy* *Products, Research & Development, and Services*		✓ ✓ ✓		
103-3	*Sustainability Management* *Strategy* *Products, Research & Development, and Services*		✓ ✓ ✓		

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
Customer Loyalty	Customers express their satisfaction with the quality of our products and services via the regularly conducted customer net promoter score.	SAP	✓		
	Customers		✓		
	Performance Management System		✓		

Responsible Supply Chain

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Sustainable Procurement*		✓		
	GRI Content Index		✓		
103-2	*Sustainable Procurement*		✓	10, 12, 13, 17	1, 2, 7, 8
103-3	*Sustainable Procurement*		✓		
308-1	*Sustainable Procurement*	SAP + external parties	✓	12, 13	7, 8
	All our suppliers have to acknowledge the SAP Supplier Code of Conduct, containing environmental expectations of them and their sub-suppliers. In addition, we are in the process of setting up a holistic third-party risk assessment for SAP suppliers, including screening for environmental criteria. Once the process has been rolled out, we can report a percentage.		✓		
Percentage of addressable spend with diverse suppliers and social enterprises	*Sustainable Procurement*	SAP + external parties	✓	10, 12	1
	SAP set a social procurement spend target aiming for 5% addressable spend with diverse suppliers and 5% addressable spend with social enterprises by year end 2025.		✓		

Solutions for an Inclusive and Circular Economy

	Links, Content, and Omissions	Boundaries	External Assurance	UN SDGs	UN GC Principles
103-1	*Waste and Water*		✓		
	GRI Content Index		✓		
103-2	*Waste and Water*		✓	3, 6, 9, 12, 13, 14, 15	7, 8, 9
103-3	*Waste and Water*		✓		
	For this material topic, we could not identify a topic-specific GRI standard. In addition, we are still working on meaningful key performance indicators for measuring the impact of our solutions for an inclusive and circular economy, for example through our membership in the Value Balancing Alliance. For more information, see the *Connectivity* section.		✓		

Stakeholder Capitalism Metrics

To support long-term value creation, SAP has committed to applying the World Economic Forum (WEF) Stakeholder Capitalism Metrics and encourages further global standardization and convergence in the ESG reporting landscape. We include the standards in our own reporting and also offer the framework in our core sustainability software solutions.

The following table provides information about the core metrics proposed by the WEF White Paper titled "Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation", published in September 2020.

The table refers to the chapters of our Management Report, Notes, Form 20-F, and other sources that contain the respective disclosures. Core metrics that have not been identified as material for SAP during our latest materiality analysis have been omitted.

Principles of Governance

Theme	Core Metrics and Disclosures	Links	Comments
Governing Purpose	Setting purpose	*Strategy*	
Quality of Governing Body	Governance body composition	*Corporate Governance Statement* *https://www.sap.com/investors/en/governance/supervisory-board.html* *Form 20-F Item 6* *Note (G.4)*	
Stakeholder Engagement	Material issues impacting stakeholders	*Materiality* *Stakeholder Engagement*	
Ethical Behavior	Anti-corruption	*Business Conduct* *Note (G.3) Other Litigation, Claims, and Legal Contingencies* *SAP Partner Code of Conduct*	Provisions for material corruption cases would be reported together with further details in Note (G.3). Partners are also requested to complete any compliance training available based on their partner type. For more information, see SAP's Partner Code of Conduct.
	Protected ethics advice and reporting mechanisms	*Business Conduct* *SAP Speak Out*	
Risk and Opportunity Oversight	Integrating risk and opportunity into business process	*Risk Management and Risks* *Expected Developments and Opportunities*	

Planet

Theme	Core Metrics and Disclosures	Links	Comments
Climate Change	Greenhouse gas (GHG) emissions	*Energy and Emissions* *Chart Generator*	
	TCFD implementation	*Task Force on Climate-Related Financial Disclosure* *Energy and Emissions*	

People

Theme	Core Metrics and Disclosures	Links	Comments
Dignity and Equality	Diversity and inclusion (%)	*Employees and Social Investment* *Chart Generator*	No disclosure of other indicators of diversity due to legal requirements in Germany.
	Pay equality (%)	*SAP Recertifies with EDGE* *Bloomberg Gender-Equality Index 2021* *SAP Named Among Best Companies to Work for in 2021* *SAP among Forbes' America's Best Employers For Women 2021*	Creating an inclusive workplace that benefits employees, customers, and partners is a strategic commitment for SAP. We are the first EDGE-certified global technology company and have received numerous recognitions for our advances in creating an inclusive and more equal workplace, such as Bloomberg Equality Index, Best Place to Work, Forbes' America's Best Employers For Women ranking, and many others.
	Wage level (%)	*Compensation Report*	In our Compensation Report, we disclose the vertical pay ratio. This ratio compares the total compensation granted to the CEO with that of all employees who were employed at year end.
Skills for the Future	Training provided (#, $)	*Employees and Social Investment*	Training hours split by gender and employee category are not a material issue for SAP, as we align our training activities according to the needs of each employee and do not tolerate discrimination.

Prosperity

Theme	Core Metrics and Disclosures	Links	Comments
Community and Social Vitality	Total tax paid	*Analysis of Consolidated Statements of Cash Flow*	

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.

SASB Index

Starting in 2021, SAP maps existing sustainability disclosures to the standards of the Sustainability Accounting Standards Board (SASB). The table below presents a set of sustainable indicators based on the SASB standards for Software and IT Services (Version 2018-10).

Topic	Code	Links	Comments
Environmental Footprint of Hardware Infrastructure	TC-SI-130a.1	*Energy and Emissions*	
	TC-SI-130a.2	*Waste and Water*	
	TC-SI-130a.3	*Energy and Emissions*	
Data Privacy & Freedom of Expression	TC-SI-220a.1	*Security, Data Protection, and Privacy*	For more information about data protection and privacy, see the *SAP Trust Center*
Data Security	TC-SI-230a.2	*Security, Data Protection, and Privacy* *Risk Management and Risks*	
Recruiting & Managing a Global, Diverse and Skilled Workforce	TC-SI-330a.1	*Employees and Social Investments* *Note (B.1) Employee Headcount*	SAP is a multinational company with locations all over the world. At each location, we hire people based on their qualifications and our business needs. For an overview of our headcount per geographical area, see Note (B.1).
	TC-SI-330a.2	*Key Facts* *Employees and Social Investments* *Non-Financial Notes: Social Performance*	
	TC-SI-330a.3	*Key Facts* *Employees and Social Investments*	As a global organization with employees from over 150 nationalities, our aspiration is that SAP's workforce mirrors the diversity in society that includes gender parity and demographics of all of the regions where we have employees.
Managing Systemic Risks from Technology Disruptions	TC-SI-550a.2	*Risk Management and Risks*	

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.

Task Force on Climate-Related Financial Disclosure (TCFD)

The TCFD recommends companies to disclose their climate-related financial risks to investors, lenders, insurers, and other stakeholders. SAP started to report in alignment with the TCFD recommendations in 2018. For more information, see the table below.

Area	**Content**	Chapter
Governance	SAP's governance of climate-related risks and opportunities.	*Energy and Emissions*
Strategy	Actual and potential impacts of climate-related risks and opportunities on SAP's businesses, strategy, and financial planning where such information is material.	*Energy and Emissions* *Risk Management and Risks* *Strategy*
Risk Management	How does SAP identify, assess, and manage climate-related risks?	*Energy and Emissions*
Metrics and Targets	Metrics and targets that SAP uses to assess and manage relevant climate-related risks and opportunities where such information is material.	*Energy and Emissions* *Risk Management and Risks* *Non-Financial Notes: Environmental Performance* *Chart Generator*

Audit Scope

The content of this section was not subject to the independent limited assurance engagement of our external auditor.