

but with slower momentum towards the end of the fiscal year. The food and beverage industry grew steadily throughout the fiscal year, with the beverage industry growing faster than the food industry. Global production of electronics and semiconductors experienced strong growth in fiscal 2022, with some moderation during the course of the fiscal year due in part to production lockdowns in China. Market shifts before fiscal 2022 in the semiconductor industry led to global shortages of semiconductors for certain customer segments such as the automotive industry; demand patterns began to normalize at the end of the fiscal year, including more moderate spending on consumer electronics. Supplier price increases, caused mainly by shortages, affected all of the key markets for Digital Industries, and were sharper than usual for a period of economic rebound. For fiscal 2023, Digital Industries' primary markets are expected to show strong revenue growth benefiting in part from high order backlogs and price inflation. While growth is expected to be more evenly spread across the three reporting regions than in fiscal 2022, growth momentum is expected to slow down gradually over the course of the fiscal year. Growth expectations for fiscal 2023 are subject to a high level of uncertainty depending among other factors on the development of geopolitical tensions, trade sanctions, energy markets and interest rates.

3.3 Smart Infrastructure

Smart Infrastructure offers products, systems, solutions, services and software to support a sustainable transition from fossil to renewable energy sources, as well as a transition to smarter, more sustainable buildings and communities. Smart Infrastructure's versatile portfolio consists of buildings, electrification, and electrical products. Its buildings portfolio addresses the needs of operators, owners, occupants and users of buildings. It spans integrated building management systems and software; heating, ventilation and air conditioning (HVAC) controls; fire safety and security products and systems; and solutions and services such as energy performance services. With its electrification portfolio, Smart Infrastructure makes grids more resilient, flexible and efficient. Its offerings cover grid simulation, operation and control software; substation automation and protection; medium-voltage primary and secondary switchgear including sulfur hexafluoride-free (SF6-free) medium-voltage switchgear; and low-voltage switchboards and eMobility charging infrastructure. The electrical products portfolio addresses industrial and building applications. Its offerings include low-voltage switching, measuring and control equipment; low-voltage distribution systems and switchgear; and circuit breakers, contactors and switching for medium voltage. In fiscal 2022, Smart Infrastructure acquired Brightly Software Inc. (Brightly), a U.S.-based provider of cloud-based SaaS for asset and maintenance management and for energy and sustainability management. The acquisition strengthens Smart Infrastructure's presence in the market for software used to manage built infrastructure.

Smart Infrastructure's customer and end user base is diverse. It encompasses infrastructure developers, construction companies and contractors; owners, operators and tenants of both public and commercial buildings including hospitals, campuses, airports and data centers; companies in process industries such as oil and gas, pharmaceuticals and chemicals; companies in discrete manufacturing industries such as automotive and machine building; and utilities and power grid network operators (transmission and distribution). Smart Infrastructure serves its customers through a broad range of channels, including distributors and partners such as panel builders, original equipment manufacturers (OEM) and value-added resellers and installers, all complemented by direct sales and through e-commerce channels. Digital marketplaces, such as Siemens Xcelerator, are increasingly important for Smart Infrastructure's digital offerings. Smart Infrastructure's principal competitors consist mainly of large multinational companies and smaller manufacturers in emerging countries. Its solutions and services business also competes with local players such as system integrators and facility management firms. Smart Infrastructure's businesses are impacted by changes in the overall economic environment to varying degrees, depending on the customer segment and offering. Demand for Smart Infrastructure's electrical and building products offerings is driven strongly by macroeconomic cycles, while demand for its systems and solutions offerings changes more slowly, with a time lag of several quarters. In contrast, demand for service offerings shows only limited influence from macroeconomic cycles. Overall, Smart Infrastructure has developed a balanced and resilient business mix with its diversified regional and vertical markets; its range of products, systems, solutions and services; and its participation in both long- and short-cycle markets. To further strengthen the resilience of its portfolio, Smart Infrastructure aims at increasing the share of overall revenue that comes from services.

Smart Infrastructure benefits from a number of major trends. These include urbanization, demographic change, decarbonization, and digitalization. Urbanization and demographic change drive a need for smarter and more human-centric buildings. Climate change drives the need for decarbonization. This results in an increasing demand for flexible and resilient energy infrastructures including rapid growth in electric mobility and more sustainable buildings. Digitalization is an enabler for such changes in both buildings and grids, making it possible to develop smarter buildings and manage electricity distribution with a higher share of renewables. The markets served are experiencing shifts that present opportunities where building technologies and electrification meet.

Smart Infrastructure's R&D activities focus on sustainable and decarbonizing offerings for buildings, utilities and industrial customers. It develops digital offerings for the energy market such as for integrating renewable energy into grids. Furthermore, R&D efforts strengthen Smart Infrastructure's capabilities to improve the sustainability, performance and attractiveness of buildings. Smart Infrastructure is expanding its digital offerings such as cloud solutions using field data from controllers and IoT devices. In June 2022, Smart Infrastructure launched the new software platform Building X, developed in accordance with the principles of openness and modularity of Siemens Xcelerator. Furthermore, it develops technologies for environmentally friendly and increasingly renewable-based energy systems, ranging from climate-friendly SF6-free switchgear for medium voltage to charging solutions for e-mobility. In this regard, data from field devices is the basis for intelligent grid control and protection, providing grid stability and flexibility and continuously matching energy supply and demand while protecting grid assets. For electrical distribution systems and industrial plants, Smart Infrastructure continuously drives digitalization of its switching and control products with built-in intelligence, connectivity to the cloud, and remote diagnostics and edge computing capability. Smart Infrastructure puts an increasing focus of R&D on the sustainability of its products along the lifecycle, addressing environmentally friendly designs, materials and processes. To a large extent, its capital expenditures relate to the products businesses. Main investment areas are replacement of fixed assets and further digitalization of factories and technical equipment, with a strong focus on innovation.

(in millions of €)	Fiscal year		% Change	
	2022	2021	Actual	Comp.
Orders	20,798	16,071	29%	23%
Revenue	17,353	15,015	16%	10%
therein: service business	3,799	3,387	12%	7%
Profit	2,222	1,729	29%	
Profit margin	12.8%	11.5%		

Orders at Smart Infrastructure rose by double-digits in all businesses, led by the electrical products business and the electrification business including a number of larger contract wins. Order growth was highlighted by strong demand from industrial customers, for data centers and for digital building services, and included proactive purchasing by customers. **Revenue** also rose in all businesses led by the electrical products business, which operated in strong customer markets. Smart Infrastructure successfully avoided major disruptions from challenging supply chain conditions. On a geographic basis, orders and revenue rose in all three reporting regions. The strongest growth contribution came from the Americas region, driven by the U.S., while growth in the Asia, Australia region was held back by impacts related to COVID-19 in China. Both order and revenue development included positive currency translation effects. **Profit** and profitability rose in all businesses, with the strongest increases coming from the electrical products business and the buildings business. The increases were due mainly to higher capacity utilization, pricing measures to offset cost inflation and cost savings related to prior execution of Smart Infrastructure's competitiveness program. Severance charges, largely associated with the program, fell to €28 million from €47 million a year earlier. In fiscal 2022, Smart Infrastructure recorded a €54 million gain from the sale of a business. These positive effects were only partly offset by COVID-19-related impacts mainly from medical leaves and lockdowns in China. **Smart Infrastructure's order backlog was €15 billion at the end of the fiscal year, of which €10 billion are expected to be converted into revenue in fiscal 2023.**

Overall, **markets** served by Smart Infrastructure grew clearly in fiscal 2022. **Market dynamics were influenced by a further recovery from COVID-19-related effects, severe supply chain and logistics constraints, strong price inflation and effects from the war in Ukraine.** On a geographic basis, all reporting regions contributed to growth. **Price inflation affected all regions and came in particularly high in the U.S.** In China, growth was held back by lockdown measures, which also impacted growth dynamics in other countries, while Europe was most strongly affected by the war in Ukraine. **Grid markets grew above average with market growth driven by demand for integration of energy from renewable resources.** Industrial markets grew nearly as fast as grid markets, driven by growth in the automotive industry among other factors. Growth in the buildings market came in somewhat lower mainly due to weaker growth momentum in commercial building markets. In fiscal 2023, markets served by Smart Infrastructure are expected to grow slightly slower than in fiscal 2022. While growth in residential and commercial building markets and some industrial markets is expected to slow down somewhat, demand for data centers and power distribution is expected to be robust. Price inflation is expected to contribute to market growth in fiscal 2023. Overall, market development in fiscal 2023 is expected to continue to be influenced by supply chain constraints and effects from the war in Ukraine, including on energy prices. Further impacts could arise from potential lockdown measures in China and geopolitical tensions.

3.4 Mobility

Mobility combines all Siemens businesses in the area of passenger and freight transportation. Within its rolling stock business, its offerings encompass trains for urban and regional transport such as vehicles for metro systems, trams and light rail, and commuter trains as well as trains and passenger coaches for intercity and long-distance services, such as high-speed rail. Rolling stock offerings furthermore include locomotives for freight or passenger transport and solutions for automated transportation such as automated people movers. Offerings in its rail infrastructure business include products and solutions for rail automation, such as automatic train control systems, interlocking, operations control and telematic systems, digital station solutions and railway communication systems, signaling on-board and crossing products and yard and depot solutions; and for electrification such as AC and DC traction power supply, contact lines and network control. With its service business, Mobility provides customer services for rolling stock and rail infrastructure throughout the entire lifecycle, such as maintenance and digital services. In its turnkey business, it bundles consulting, planning, financing, construction, service and operation of complete mobility systems. Mobility's software business comprises intermodal solutions, such as platforms for fleet management, route planning, ticketing and payments solutions and data analytics. To enhance these offerings, Mobility at the beginning of fiscal 2022 acquired SQCAP B.V. (Sqills), Netherlands, a provider of cloud-based inventory management, reservation, and ticketing software for public transport operators. During fiscal 2022, Mobility divested its road traffic business, Yunex Traffic.

Mobility sells its products, systems and solutions through its worldwide network of sales and execution units. The principal customers of Mobility are public and state-owned companies in the transportation and logistics sectors, so its markets are driven primarily by public spending. Customers usually have multi-year planning and implementation horizons, and their contract tenders therefore tend to be independent of short-term economic trends. Large contracts in the rolling stock and the rail infrastructure business are often awarded together with service contracts, which start to generate revenue only after the respective products and solutions have been put in operation, which can be a number of years after the contract award. Mobility's principal competitors are multinational companies. Consolidation among Mobility's competitors is continuing and may lead to increased competitive pressure within the rail transport industry and also to fewer sourcing options for rail customers.

The main **trends** driving Mobility's markets are urbanization, the need to reduce emissions from transportation, and digitalization. Increasing populations in urban centers need daily mobility that is simpler, faster, and more flexible, reliable and affordable. At the same time, cities and national economies face the challenge of cutting CO₂ and noise emissions and reducing space requirements and costs of transportation. The pressure on mobility providers to meet all these needs is expected to rise continuously. Furthermore, improving availability, connectivity, and sustainability of rail infrastructures increasingly requires digital solutions, which generates growth opportunities for providers of such solutions. IoT systems and new software-based solutions such as Mobility as a Service (MaaS) are expected to become major growth enablers for the rail industry. While a significant drop in ridership driven by COVID-19 has strongly impacted mobility operators, overall trends towards urbanization and decarbonization persist unchanged and many countries have been allocating significant funds to rail and public transport operators to address these trends.

Target

quarters. Digital Industries expects its primary markets, as described above, to show clear growth in fiscal 2022, with somewhat diminished momentum compared to fiscal 2021 and more geographic balance among the three reporting regions.

3.3 Smart Infrastructure

Smart Infrastructure offers products, systems, solutions, services and software to support a sustainable transition in energy generation sources, from fossil to renewable and a transition to smarter, more sustainable buildings and communities. This versatile portfolio is structured into three businesses: buildings, electrification and electrical products. The buildings business addresses the needs of operators, owners, occupants and users of buildings. It spans integrated building management systems and software; heating, ventilation and air conditioning (HVAC) controls; fire safety and security products and systems; and solutions and services such as energy and performance services. The electrification business makes grids more resilient, flexible and efficient. Its offerings cover grid simulation, operation and control software; substation automation and protection; medium-voltage primary and secondary switchgear (including SF6-free medium-voltage switchgear); and low-voltage switchboards and eMobility charging infrastructure. **The electrical products business supplies electrification and buildings. Its offerings include low-voltage switching, measuring and control equipment; low-voltage distribution systems and switchgear; and circuit breakers, contactors and switching for medium-voltage. In fiscal 2021, Smart Infrastructure acquired C&S Electric Limited (C&S Electric), India, a provider of electrical and electronic equipment for infrastructure, power generation, transmission and distribution to strengthen its position in India as a supplier of low-voltage power distribution and electrical installation technology.**

Smart Infrastructure's customer base is diverse. It encompasses infrastructure developers, construction companies and contractors; owners, operators and tenants of both public and commercial buildings including hospitals, campuses, airports and data centers; companies in heavy industries such as oil and gas, mining and chemicals; companies in discrete manufacturing industries such as automotive and machine building; and utilities and power grid network operators (transmission and distribution). **Smart Infrastructure serves its customers through a broad range of channels, including its global sales organization, distributors and partners such as panel builders, original equipment manufacturers (OEM) and value-added resellers and installers, all complemented by direct sales such as through the branch offices of its regional solutions and services units worldwide and e-commerce channels.** Smart Infrastructure's principal competitors consist mainly of large multinational companies and smaller manufacturers in emerging countries. Its solutions and services business also competes with local players such as system integrators and facility management firms. Smart Infrastructure's businesses are impacted by changes in the overall economic environment to varying degrees, depending on customer segment. **While customer demand in discrete manufacturing industries changes quickly and strongly with macroeconomic cycles, it reacts more slowly in infrastructure, construction, heavy industries and the utilities sector. The building solutions business in particular is affected by economic cycles in the non-residential building construction markets with a time lag of two to four quarters.** Overall, Smart Infrastructure has developed a balanced and resilient business mix with its diversified regional and vertical markets; its range of products, systems, solutions and services; and its participation in both long- and short-cycle markets. To further strengthen the resilience of its portfolio, Smart Infrastructure aims at increasing the share of service revenue and beginning with fiscal 2022 will report revenue generated from service activities.

Smart Infrastructure benefits from a number of favorable **trends**. **These include urbanization, demographic change, climate change, and digitalization. Urbanization and demographic change drive a need for smarter and more human-centric buildings. Climate change drives the need for decarbonization. This results in an increasing demand for flexible and resilient energy infrastructures and rapid growth in electric mobility. Digitalization is an enabler for such changes in both buildings and grids, making it possible to develop smarter buildings and manage electricity distribution with a higher share of renewables. The markets served are experiencing shifts that present opportunities where building technologies and electrification meet.**

Smart Infrastructure's **R&D activities** focus on sustainable and decarbonized infrastructures in electrification, distribution grids and buildings. It develops digital offerings for the energy market such as for integrating renewable energy into conventional grids. Furthermore, R&D efforts strengthen Smart Infrastructure's capabilities to create comfortable, safe and energy-efficient buildings and infrastructures that support increased efficiency for occupants, equipment and the use of building space. Smart Infrastructure is expanding its digital offerings such as cloud solutions using field data from controllers and IoT devices. Furthermore, it develops technologies for environmentally friendly and increasingly renewable-based energy systems, ranging from photovoltaic and battery storage inverters to charging solutions for e-mobility. In this regard, data from field devices is the basis for intelligent grid control and protection, providing grid stability and flexibility and continuously matching energy supply and demand while protecting grid assets. For electrical distribution systems and industrial plants, Smart Infrastructure continuously drives digitalization of its switching and control products with built-in intelligence, connectivity to the cloud, and increasingly remote diagnostics and edge computing capability. Its digital twins of products, building systems or grids deliver customer value from online configuration and parametrization, to operation, to maintenance planning. Smart Infrastructure also develops data-driven applications and digital services. To a large extent, its capital expenditures relate to the products businesses. Main **investment** areas are replacement of fixed assets and further digitalization of factories and technical equipment, with a strong focus on innovation.

(in millions of €)	Fiscal year		% Change	
	2021	2020	Actual	Comp.
Orders	16,071	14,734	9%	12%
Revenue	15,015	14,323	5%	8%
therein: products business	5,769	5,182	11%	15%
Adjusted EBITA	1,743	1,302	34%	
Adjusted EBITA margin	11.6%	9.1%		

Orders at Smart Infrastructure rose in all businesses on broad-based improvements in its main customer markets. **The strongest growth contributions came from the products business, which saw a clear recovery in demand from industrial customers, and from the systems business, which won a number of significant contracts including orders from semiconductor manufacturers in the U.S. Orders in the solutions and services business grew slightly as the business saw first signs of recovery in relevant markets towards the end of the fiscal year. Revenue growth also was driven mainly by the products business and the systems business, while a slight decline in the solutions**

and services business was due to negative currency translation effects. Despite more challenging supply conditions, Smart Infrastructure maintained its delivery capacity by successfully avoiding major supply chain disruptions. On a geographic basis, orders and revenue were up in all regions, with double-digit volume growth in the region Asia, Australia including a particularly strong contribution from China. Volume growth in the Americas included strong demand from residential markets in the U.S. Overall, growth in this region was sharply impacted by negative currency translation effects, which eased towards the end of the fiscal year. Adjusted EBITA and profitability rose in all businesses, with the strongest growth contributions coming from the products business and the systems business on higher revenue and increased capacity utilization. Adjusted EBITA overall rose also due to cost savings related to prior execution of Smart Infrastructure's competitiveness program, while severance associated with the program fell sharply, to €47 million from €195 million a year earlier. Particularly during the first half of fiscal 2021, Adjusted EBITA development benefited from expense reductions year-over-year related to COVID-19 restrictions. These effects were only partly offset by negative currency effects. For comparison, Adjusted EBITA in fiscal 2020 benefited from a €159 million gain from the sale of a business. Smart Infrastructure's order backlog was €11 billion at the end of the fiscal year, of which €7 billion are expected to be converted into revenue in fiscal 2022.

Overall, markets served by Smart Infrastructure grew moderately in fiscal 2021, experiencing a recovery from COVID-19-related effects that had a strong impact on most customer industries a year earlier. Industrial markets developed well, with strong growth in the machine building and pharmaceutical industries, followed by the automotive, food and beverage, oil and gas and chemicals industries. Grid markets grew clearly as utilities continued to prioritize investments in making legacy networks more automated, intelligent, flexible and reliable. Ongoing strong demand for remote working and cloud services resulted in strong growth in the data center market. Conditions in non-residential construction markets were challenging, while residential construction markets, in which Smart Infrastructure has a significantly lower exposure, grew strongly. On a geographic basis, market growth in fiscal 2021 was mainly driven by the region Asia, Australia, which recovered earlier from impacts related to COVID-19, while market volume in the Americas declined. Smart Infrastructure also experienced a number of supply chain constraints, especially in the areas of base metals (copper, aluminum, steel), plastics, semiconductors and transportation services. Whereas the management of these constraints required additional effort, Smart Infrastructure's supply chains have proven to be resilient, so that major interruptions could be avoided and delivery ability was maintained. In fiscal 2022, markets served by Smart Infrastructure are expected to grow slightly faster than in fiscal 2021. Demand from the pharmaceutical industry, data centers and utilities are expected to be main growth drivers, while growth rates of the non-residential construction markets are expected to come in below the average growth of markets served by Smart Infrastructure. On a geographic basis, Asia, Australia is expected to continue to be the fastest-growing region. Growth in the region Europe, C.I.S., Africa, Middle East is expected to accelerate and markets in the region Americas are expected to return to growth.

3.4 Mobility

Mobility combines all Siemens businesses in the area of passenger and freight transportation. Within its rolling stock business, its offerings encompass trains for urban and regional transport such as vehicles for metro systems, trams and light rail, and commuter trains as well as trains and passenger coaches for intercity and long-distance services, such as high-speed rail. Rolling stock offerings furthermore include locomotives for freight or passenger transport and solutions for automated transportation such as automated people movers. Offerings in its rail infrastructure business include products and solutions for rail automation, such as automatic train control systems, interlocking, operations control and telematic systems, digital station solutions and railway communication systems, signaling on-board and crossing products and yard and depot solutions; for electrification such as AC and DC traction power supply, contact lines and network control; and intermodal solutions, such as platforms for fleet management, route planning, ticketing and payments solutions and data analytics. With its service business, Mobility provides customer services for rolling stock and rail infrastructure throughout the entire lifecycle, such as maintenance and digital services. In its turnkey business, it bundles consulting, planning, financing, construction, service and operation of completed mobility systems. Its intelligent traffic systems business provides solutions for traffic management such as autonomous driving, eHighway systems and tolling solutions. During fiscal 2021, Mobility carved out the intelligent traffic systems business to form a separately managed entity, which operates under the brand name Yunex Traffic.

Mobility sells its products, systems and solutions through its worldwide network of sales units. The principal customers of Mobility are public and state-owned companies in the transportation and logistics sectors, so its markets are driven primarily by public spending. Customers usually have multi-year planning and implementation horizons, and their contract tenders therefore tend to be independent of short-term economic trends. Large contracts in the rolling stock and the rail infrastructure business are often awarded together with service contracts, which start to generate revenue only after the respective products and solutions have been put in operation, which can be a number of years after the contract award. Mobility's principal competitors are multinational companies. Consolidation among Mobility's competitors is continuing: In January 2021, Alstom SA of France announced the closing of the acquisition of Bombardier Transportation. In August 2021, Hitachi Ltd., Japan, announced an agreement of Hitachi Rail to acquire the Ground Transportation Systems business of Thales. Market consolidation may lead to increased competitive pressure within the rail supply industry and also to fewer sourcing options for rail customers.

The main trends driving Mobility's markets are urbanization and the need to reduce emissions, particularly from transportation. Increasing populations in urban centers need daily mobility that is simpler, faster, and more flexible, reliable and affordable. At the same time, cities and national economies face the challenge of cutting CO₂ and noise emissions and reducing space requirements and costs of transportation. The pressure on mobility providers to meet all these needs is expected to rise continuously. Furthermore, improving availability, connectivity, and sustainability of rail infrastructures increasingly requires digital solutions, which provide growth opportunities. While a significant drop in ridership driven by COVID-19 has strongly impacted mobility operators, overall trends towards urbanization and decarbonization persist unchanged and recovery programs in many countries have been allocating significant funds to rail and public transport operators to address these trends.

Mobility's **R&D strategy** is focused on making trains and infrastructures more intelligent, thereby increasing its customers' return on investment, improving the passenger experience, and guaranteeing availability. Decarbonization and seamlessly connected (e-)mobility are also key factors for the future of transportation. Mobility's major R&D areas include the development of efficient vehicle platforms with optimized lifecycle cost and maximum customization flexibility; eco-friendly, alternative power supplies for trains (batteries, hydrogen, dual mode) and trucks (eHighway); digital services for railways via its Railigent application suite; "signaling in the cloud," a new system architecture for rail infrastructure and IoT/cloud-based technologies; solutions for more automated and autonomous driving for rail and road; innovative brake monitoring systems for freight trains; and digital technologies and IoT solutions including cyber security,

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pandemic while continuing to address historic technological changes driven by CO₂ emission reduction. The production cuts in the automotive industry were also a main factor for a massive decline in demand in the machine building industry. The food and beverage markets declined moderately due to weak demand for beverages. The chemicals and pharmaceuticals industry was less impacted by the pandemic, due mainly to stable production levels in the pharmaceuticals industry. The global electronics and semiconductor markets kept growing during fiscal 2020. While the forecast for fiscal 2021 indicates a slight recovery of the markets served by Digital Industries, including moderate expansion in manufacturing investments, pre-pandemic market volume is not expected to be reached in the next fiscal year.

In October 2020, the stake in Bentley was transferred to Corporate items, reported within the Reconciliation to Consolidated Financial Statements. In November 2020, to further strengthen Siemens' pension assets and safeguards the post-employment benefits of employees, Siemens transferred the stake in Bentley from Corporate items to Siemens Pension-Trust e.V.

A.3.3 Smart Infrastructure

Smart Infrastructure supplies and intelligently connects energy systems and building technologies, to significantly improve efficiency and sustainability of public and private infrastructures, while supporting its customers in addressing major technology shifts. Smart Infrastructure delivers these benefits with a range of products and systems for intelligent grid control, low- and medium voltage electrification and control products, building automation, fire safety and security and energy efficiency in buildings. At the grid edge – the interface between energy grids and buildings and energy consumers – Smart Infrastructure serves high-growth markets in distributed energy systems, electric vehicle infrastructure, microgrids and energy trading. Beginning with fiscal 2020, the distribution transformer business was transferred to the former segment Gas and Power. **Smart Infrastructure serves its customers through a broad range of channels, including its global product and systems sales organization, distributors, panel builders, original equipment**

manufacturers (OEM) and value added resellers and installers, all complemented by direct sales through the branch offices of its regional solutions and services units worldwide. Smart Infrastructure's customer base is diverse. It encompasses **infrastructure developers, construction companies and contractors; owners, operators and tenants of both public and commercial buildings including hospitals, campuses, airports and data centers; utilities and power distribution network operators; companies in heavy industries such as oil and gas, mining and chemicals; and companies in discrete manufacturing industries such as automotive and machine building.** Smart Infrastructure's principal competitors consist mainly of large multinational companies and smaller manufacturers in emerging countries. Its solutions and services business also competes with local players such as system integrators and facility management firms. Smart Infrastructure's businesses are impacted by changes in the overall economic environment to varying degrees, depending on customer segment. **While customer demand in discrete manufacturing industries changes quickly and strongly with macroeconomic cycles, it reacts more slowly in infrastructure, construction, heavy industries and the utilities sector. Particularly in its solutions and service business, Smart Infrastructure is affected by changes in the non-residential building construction markets with a time lag of two to four quarters.** Overall, Smart Infrastructure has developed a balanced and resilient business mix with its diversified regional and vertical markets; its range of products, systems, solutions and services; and its participation in both long- and short-cycle markets.

The markets served are experiencing shifts that present opportunities where building technologies and electrification meet. Key **trends** include climate change, rising population and urbanization which increase the need for safe, secure and sustainable environments that provide interactive, comfortable spaces and affordable costs for energy, operation and maintenance. These trends lead to cross-sector coupling of previously separate technologies, such as electrification of heat and transportation to optimize energy efficiency. Decarbonization is changing the energy generation mix towards renewable energy sources, which fluctuate with time of day and weather conditions. As a result, the energy system is becoming

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2-4 lags

increasingly decentralized, more strongly influenced by prosumers, and more dependent on integration of intermittent/distributed energy sources including wind, photovoltaic and biomass. Both smarter buildings and the integration of more distributed energy sources into conventional power networks result in increasing technological and management complexity, including rising volumes of data, bi-directional energy and information flows. These can be reliably managed only through digitalization of buildings, transportation and energy systems.

Smart Infrastructure's R&D activities focus on the one hand on addressing the trends of decentralization, decarbonization and digitalization of energy markets. On the other hand, R&D expenses strengthen Smart Infrastructure's capabilities to create comfortable, safe and energy-efficient buildings and infrastructures that support increased efficiency of occupants, equipment and the use of building space. Smart Infrastructure is expanding its digital offerings in its existing businesses while integrating recent acquisitions in such critical areas as power control systems, power electronics and building IoT. Furthermore, it develops technologies for environmentally friendly and increasingly renewable energy systems, ranging from photovoltaic inverter technology to battery storage and charging solutions for e-mobility. In this regard, data from field devices is the basis to intelligently deliver grid flexibility and continuously match energy supply and demand while protecting grid assets. For electrical distribution systems and industrial plants, Smart Infrastructure continuously drives digitalization of its switching and control products with built-in intelligence, connectivity to the cloud, and increasingly remote diagnostics and edge computing capability. Its digital twins of products, building systems or grids deliver customer value with online configuration tools, maintenance and service management. Smart Infrastructure also develops data-driven applications and digital services. To a large extent, its capital expenditures relate to the products businesses. Main investment areas are replacement of fixed assets and further digitalization of factories and technical equipment, with a strong focus on innovation.

(in millions of €)	2020	Fiscal year 2019	Actual	% Change Comp.
Orders	14,734	15,590	(5)%	(5)%
Revenue	14,323	14,597	(2)%	(2)%
therein: products business	5,224	5,515	(5)%	(5)%
Adjusted EBITA	1,302	1,465	(11)%	
Adjusted EBITA margin	9.1%	10.0%		

The decline in orders at Smart Infrastructure primarily involves the solutions and services business, which took in a sharply higher volume from large orders a year earlier. Orders in the products business decreased only moderately year-over-year, despite an adverse market environment for the short-cycle activities at the beginning of fiscal 2020 that rapidly became significantly worse due to COVID-19. The systems and software business was able to keep orders close to the prior-year level. Weakness in short-cycle markets also strongly impacted revenue development in the products business. Revenue for the solutions and services business and for the systems and software business remained close to the prior-year levels. On a geographic basis, the decline in orders and revenue was due to the regions Europe, C.I.S., Africa, Middle East and Asia, Australia, while volume in the Americas remained largely stable. Adjusted EBITA declined across the businesses and was impacted by severance charges of €195 million associated with the execution of Smart Infrastructure's competitiveness program, up from severance charges of €46 million a year earlier. Impacts on Adjusted EBITA and profitability related to COVID-19 were partly offset by expense reductions resulting from pandemic restrictions. Adjusted EBITA in fiscal 2020 benefited from a €159 million gain from the sale of a business while the prior fiscal year included negative effects related to grid control projects. Smart Infrastructure's order backlog was €10 billion at the end of the fiscal year, of which €7 billion are expected to be converted into revenue in fiscal 2021. ← = 2019?

Demand in the markets served by Smart Infrastructure declined moderately in fiscal 2020 due primarily to effects related to COVID-19, which impacted most key customer industries and all reporting regions. The strongest declines in market volume came from the automotive, oil

and gas and machine-building industries. In the chemicals industry, demand declined moderately. Grid markets remained relatively stable, as utilities continued to prioritize investment in making legacy networks more automated, intelligent, flexible and reliable. Despite a moderate decline in demand in the construction market overall, the important segment of that market for Smart Infrastructure – energy performance services – continued to grow, benefiting from persistent demand for energy efficiency and digital services. The data center market grew clearly, supported by higher demand for remote working and cloud services. On a geographic basis, European markets were most strongly impacted by effects related to COVID-19, followed by the markets in the Asia, Australia region, while impacts on the U.S. markets were less severe. In fiscal 2021, utilities markets are expected to grow moderately and industry markets are forecast to recover slightly. However, market development overall is expected to be impacted by lower demand from the building construction sector, leading to an overall slight decline in volume of markets served by Smart Infrastructure year-over-year. On a geographic basis, markets in Asia, Australia are expected to return to their growth path with some of the region's countries already reaching pre-pandemic market volume. Markets in Europe overall are expected to remain on the reduced level and within the Americas, market volume in the U.S. is forecast to decline in fiscal 2021.

A.3.4 Mobility

Mobility combines all Siemens businesses in the area of passenger and freight transportation, including rail vehicles, rail automation systems, rail electrification systems, road traffic technology, digital solutions and related services. It also provides its customers with consulting, planning, financing, construction, service and operation of turnkey mobility systems. Moreover, Mobility offers integrated mobility solutions for networking of different types of traffic systems. It sells its products, systems and solutions through its worldwide network of sales units. The principal customers of Mobility are public and state-owned companies in the transportation and logistics sectors, so its markets are driven primarily by public spending. Customers usually have multi-year planning and

implementation horizons, and their contract tenders therefore tend to be independent of short-term economic trends. Mobility's principal competitors are multinational companies. Consolidation among Mobility's competitors is continuing: In May 2020, CRRC Zhuzhou Locomotives Co., Ltd., China (CRRC) finalized the acquisition of Vossloh Locomotives GmbH, Germany to gain a foothold in Europe, in line with CRRC's ambitious growth and internationalization strategy. In September 2020, Alstom SA of France (Alstom) signed the sale and purchase agreement for the acquisition of Bombardier Transportation. Already in July 2020, the European Commission decided to grant conditional clearance of the proposed acquisition. The closing of the transaction is expected for the first quarter of calendar 2021, subject to regulatory approvals and customary closing conditions. While CRRC retains its place as the largest rolling stock manufacturer in the world in terms of revenue, the planned acquisition of Bombardier Transportation by Alstom will create the second-largest rolling stock manufacturer worldwide. Market consolidation may lead to increased competitive pressure within the rail supply industry and also to fewer sourcing options for rail customers.

The main trends driving Mobility's markets are urbanization and the need to reduce emissions. Increasing populations in urban centers need daily mobility that is simpler, faster, and more flexible, reliable and affordable. At the same time, cities and national economies face the challenge of cutting CO₂ and noise emissions and reducing space requirements and costs of transportation. The pressure on mobility providers to meet all these needs is expected to rise continuously.

Mobility's R&D strategy is focused on making trains and infrastructures more intelligent, thereby increasing its customers' return on investment, improving passenger experience, and guaranteeing availability. Decarbonization and seamlessly connected (e-)mobility are key factors for the future of transportation. Mobility's major R&D areas include the development of efficient vehicle platforms with optimized lifecycle cost and maximum customization flexibility; eco-friendly, alternative power supplies for trains (batteries, fuel cells, dual mode) and trucks (eHighway); digital services for railways via its Railigent application suite; "signaling in the cloud," a

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A.3.3 Smart Infrastructure

The Operating Company **Smart Infrastructure** supplies and intelligently connects **energy systems and building technologies**, to significantly improve efficiency and sustainability and support its customers to address major technology shifts. Smart Infrastructure was formed in fiscal 2019, through a combination of the former Building Technologies Division; the low- and medium-voltage products and systems and digital grid businesses of the former Energy Management Division; and the control products business of the former Digital Factory Division. Smart Infrastructure brings together energy supply – from intelligent control across the grid and low- and medium-voltage electrification and control products – with building technology: from building automation to fire safety and security to energy efficiency. At the grid edge, there are high growth markets in energy storage, distributed energy systems and prosumption, electric vehicle infrastructure and microgrids. **The Operating Company serves its customers through a broad variety of channels, including its global product and systems sales organization, distributors, panel builders, original equipment manufacturers (OEM), value added resellers and installers, as well as by direct sales through the branch offices of its regional solutions and services units worldwide.** Smart Infrastructure's customer base is diverse. It encompasses **infrastructure developers, construction companies and contractors; owners, operators and tenants of both public and commercial buildings including hospitals, campuses, airports and data centers; utilities and power distribution network operators; companies in heavy industries such as oil and gas, mining and chemicals; and companies in discrete manufacturing industries such as automotive and machine building.** Smart Infrastructure's principal competitors consist mainly of large multinational companies together with smaller manufacturers in emerging countries. Its solutions and services business also competes with local players such as system integrators and with facility management firms. The degree to which Smart Infrastructure's businesses are impacted by changes in the overall economic environment differs by customer segments. While **customer demand in discrete manufacturing industries changes quickly and strongly with macroeconomic cycles, demand in infrastructure, construction, heavy industries and the utilities sector reacts more slowly to economic cycles.** Overall, the Operating Company's regional and vertical markets diversification, its mix of products, systems, solutions and services businesses, and its participation in both long- and short-cycle markets, all provide a balanced and resilient business mix.

The markets served are experiencing shifts that offer opportunities where building technologies and electrification markets come together. **Key trends include rising population and urbanization, increasing need for safe, secure and sustainable environments with interactive, comfortable spaces and low energy, operating and maintenance costs.** These trends lead to cross-sector

coupling, such as electrification of heat and transportation to optimize energy efficiency. Decarbonization is changing the energy generation mix towards renewable energy sources, which fluctuate with time of day and weather conditions. As a result, the energy system is becoming increasingly decentralized, more strongly influenced by prosumers, and more dependent on integration of intermittent/distributed energy sources including wind, photovoltaic and biomass, and increasing the need for smart storage and efficient and reliable power networks. Both smarter buildings and the integration of more distributed energy sources into conventional power networks result in increasing complexity with rising volumes of data, bi-directional energy and information flows. These can be reliably managed only through digitalization of buildings, transportation and energy systems.

Smart Infrastructure's **R&D** activities on the one hand focus on addressing the trends of decentralization, decarbonization and digitalization of energy markets. On the other hand, R&D expenses strengthen Smart Infrastructure's capabilities to create comfortable, safe and energy-efficient buildings and infrastructures and to support increased efficiency of occupants, equipment and the use of building space. The Operating Company is expanding its digital offerings in its existing businesses while integrating recent acquisitions in the critical power control systems, power electronics and building IoT space. Furthermore, it develops technologies for environmentally friendly and increasingly renewable energy systems, ranging from photovoltaic inverter technology to battery storage and charging solutions for e-mobility. In this regard, data from field devices is the basis to intelligently deliver grid flexibility and permanently match energy supply and demand while protecting grid assets. For electrical distribution systems and industrial plants, Smart Infrastructure continuously drives digitalization of its switching and control products with built-in intelligence, connectivity to the cloud, and increasingly remote diagnostics and edge computing capability. Its digital twins of products, building systems or grids deliver customer value with online configuration tools, maintenance and service management. Smart Infrastructure develops data-driven applications and digital services with the Mindsphere in various cloud environments. Its **investments** relate to a large extent to the products businesses and its factories, with a strong focus on innovation.

(in millions of €)	Fiscal year		% Change	
	2019	2018	Actual	Comp.
Orders	16,244	15,198	7%	4%
Revenue	15,225	14,445	5%	3%
therein: product business	5,530	5,302	4%	2%
Adjusted EBITA	1,500	1,574	(5)%	
Adjusted EBITA margin	9.9%	10.9%		

Orders and revenue for Smart Infrastructure rose in all three businesses – solutions and services, systems and software, and the products business – and in all three reporting regions. Order growth was strongest in the solutions and services business on a sharply higher volume from large orders in the Americas and Europe, C.I.S., Africa, Middle East. Revenue rose most strongly in the systems and software and the solutions and services businesses, particularly in the Americas. Revenue growth in the product business was due to low voltage products, while revenue in the other products businesses came in close to prior-year levels due partly to less favorable conditions in short-cycle markets. Adjusted EBITA declined due mainly to the systems and software business including negative effects related to grid control projects early in the year. Adjusted EBITA also included higher expenses year-over-year related to expansion of smart building offerings and for grid edge activities. Severance charges were €48 million in fiscal 2019 compared to €34 million a year earlier. Smart Infrastructure's order backlog was €10 billion at the end of the fiscal year, of which €7 billion are expected to be converted into revenue in fiscal 2020.

Smart Infrastructure achieved its results in overall moderately growing markets in fiscal 2019. The grid markets benefited from the need for intelligent and flexible energy networks and for automation, particularly in Asia, Australia and the Americas. Heavy industries and the infrastructure industry also developed favorably during fiscal 2019, driven by investments in oil and gas markets, in data centers and in transportation infrastructure, such as for e-mobility. Discrete industries, which started strong in fiscal 2019, experienced a downturn in the second half of the fiscal year. Construction markets continued their stable growth during the fiscal year, particularly in the U.S. and China and in the non-residential construction market overall. Growth in the important building electrification and automation market was driven by demand for building performance and sustainability offerings, including strong demand for energy efficiency and digital services. In fiscal 2020, market growth overall is expected to be lower than in fiscal 2019, due to an expected continuation of the downturn in the short-cycle markets, economic uncertainty in a number of countries due to trade conflicts, and other factors.

Beginning with fiscal 2020, the distribution transformer business will be transferred to the Operating Company Gas and Power. If this organizational structure had already existed in fiscal 2019, Smart Infrastructure would have posted orders of €15.590 billion, revenue of €14.597 billion, Adjusted EBITA of €1.465 billion and an Adjusted EBITA margin of 10.0%.

A.3.4 Gas and Power

The Operating Company Gas and Power offers a broad spectrum of products and solutions for generating electricity, for production, transport and downstream operations involving oil and gas, and for installing and operating transmission grids. In addition, it offers a comprehensive set of services related to these products and solutions such as performance enhancements, maintenance services, customer training and professional consulting. Finally, Gas and Power offers comprehensive turnkey solutions that integrate the products and systems from its businesses. Gas and Power was formed in fiscal 2019 through a combination of the former Power and Gas and Power Generation Services Divisions with the transmission products, systems and solutions businesses of the former Energy Management Division. Due to the broad range of its offerings, the revenue mix for Gas and Power may vary from reporting period to reporting period depending on the share of revenue attributable to products, solutions and services. Because profitability levels typically differ among these three revenue sources, the revenue mix in a reporting period accordingly affects Adjusted EBITA of Gas and Power for that period.

In the power generation and oil and gas businesses, the portfolio includes gas turbines, steam turbines, generators for gas or steam power plants, turbo and reciprocating compressor trains, reciprocating engines, modular power supply and integrated power plant solutions, and instrumentation and control systems for power generation. Customers include public utilities and independent power producers; companies in engineering, procurement and construction (EPC) that serve utilities and power producers; sovereign and multinational oil companies; midstream operators; independent oil and gas, petrochemical and chemical companies, and industrial customers that generate power and heat for their own consumption (prosumers). The competition consists mainly of two groups: a relatively small number of original equipment manufacturers (OEM), some with very strong positions in their domestic markets, and on the other hand a large number of EPC contractors.

In the transmission business, the portfolio includes products, systems and solutions that enable multi-vendor and bidirectional flow of energy and information. These offerings are key building blocks of modernized energy grids, which must integrate renewable sources with their fluctuating levels of power generation and also incorporate efficient electrical storage and sophisticated load management. The portfolio also includes power transformers, high voltage switchgear and components, high-voltage direct current (HVDC) products and HVDC and grid access solutions as well as relevant transmission services. The transmission business serves a broad range of customers including power producers, transmission and distribution system operators, and industrial and infrastructure customers in industries such as oil and