

# Business Development of Bioprocess Solutions

Extraordinarily dynamic growth in sales revenue and earnings

Strong gains across all product categories and geographies

Division with a key role in vaccine production; benefited from strong development of acquisitions

Division sales  
**€1,782.6m**  
In constant FX: +34.4%

Order intake  
**€2,238.1m**  
In constant FX: +56.4%

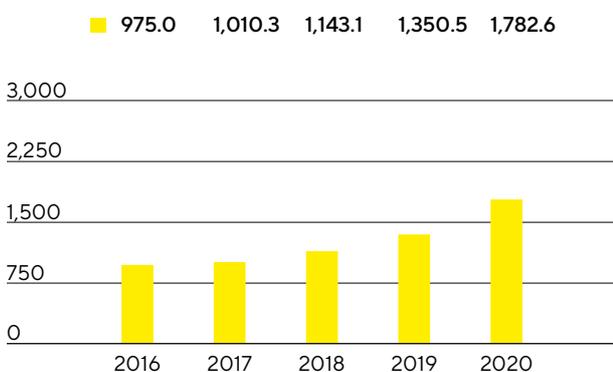
Underlying EBITDA margin  
**32.3%**  
+3.2 percentage points



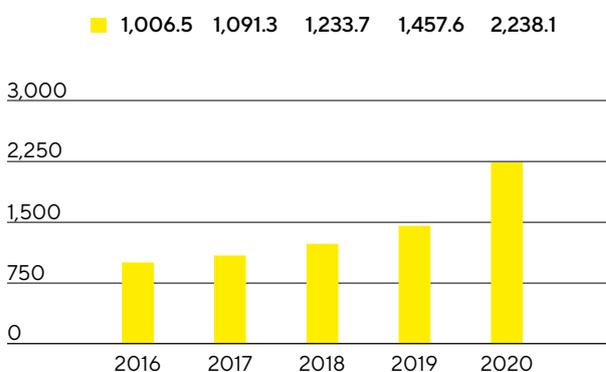
## Sales Revenue and Order Intake

In the reporting year, the Bioprocess Solutions Division expanded very dynamically by 34.4% to €1,782.6 million (reported: +32.0%). As a result, it exceeded the forecast issued at the beginning of the reporting year and projecting sales growth of 11% to 14% as well as the forecast that was last raised upon release of the company's nine-month figures and that predicted an increase at the upper end of, or slightly above, the range of 26% to 30%. In addition to strong organic growth across all product categories and geographies, pandemic effects added up to an estimate of around 12 percentage points of which the majority was attributable to additional sales in connection with the increase in production capacities for coronavirus vaccines and Covid-19 therapeutics and the remaining part to inventory buildup by some customers. Close to 5 percentage points of the division's growth was due to consolidation of the most recent acquisitions.

**Sales Revenue 2016 to 2020**  
€ in millions



**Order Intake 2016 to 2020**  
€ in millions



### Sales Revenue and Order Intake

€ in millions	2020	2019	in % reported	in % cc
Sales revenue	1,782.6	1,350.5	32.0	34.4
Order intake	2,238.1	1,457.6	53.5	56.4

In 2020, the Bioprocess Solutions Division increased its sales revenue by double digits yet again in all business geographies. EMEA, the region generating the highest revenue for the division, recorded a sharp increase of 33.8% to €698.5 million. As this gain was especially strong in comparison to the very solid prior-year development, the region's share of revenue slightly rose to 39% of total division sales. The division's strong organic growth in this region was furthermore fueled by the additional demand in connection with the development and manufacture of coronavirus vaccines and Covid-19 therapeutics. This also applied to the Americas region, which represented around 37% of division revenue. Following a strong-prior year, sales in this region surged by 33.7% to €651.3 million. Business in the Asia | Pacific region, which accounted for around 24% of the division's total sales, also saw exceptionally strong growth, with an increase of 36.5% to €432.9 million that was driven in part by dynamic project business from Asia, particularly in the first half.

Order intake developed even more strongly than sales revenue, soaring 56.4% in constant currencies (reported: +53.5%) to €2,238.1 million, with pandemic effects having a positive impact of around 17 percentage points.

**Sales by Region**

€ in millions	2020	2019	in % reported	in % cc
EMEA	698.5	524.8	33.1	33.8
Americas	651.3	501.1	30.0	33.7
Asia   Pacific	432.9	324.5	33.4	36.5

## Overproportionate Increase in Earnings

In the reporting year, the Bioprocess Solutions Division significantly increased its underlying EBITDA by 46.5% to €575.9 million. Due to economies of scale and an underproportionate cost increase in some areas in relation with the pandemic, the division's respective margin was substantially up year over year from 29.1% to 32.3%, with currency effects having a slightly negative impact. The most recent acquisitions had an overall neutral effect on the earnings margin.

**Underlying EBITDA and EBITDA Margin**

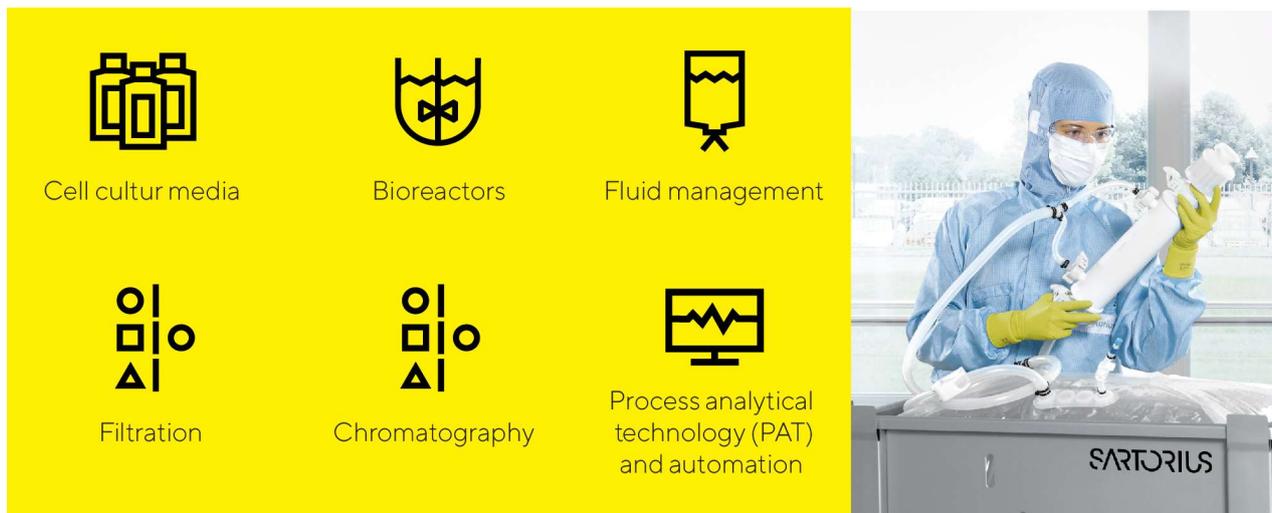
	2020	2019
Underlying EBITDA in millions of €	575.9	393.1
Underlying EBITDA margin in %	32.3	29.1

In the year under review, the Bioprocess Solutions Division recorded extraordinary items of -€35.5 million relative to -€19.1 million a year earlier. These items predominantly consisted of expenses in connection with the most recent acquisitions as well as for various cross-divisional projects, restructurings and rebranding.

Regarding the corresponding customer groups and to optimize the sales structure, two businesses were reallocated between the two divisions in the first quarter of 2020, leading to a slight adjustment in the divisions' prior-year figures. This did not result in any adjustments at the Group level.

## Products and Sales

The Bioprocess Solutions Division markets products and services for the entire added-value chain in biopharmaceutical production and preceding process development. The division's portfolio includes cell lines, cell culture media, bioreactors, a wide range of products for separation, purification and concentration, and products and systems for storage and transportation of intermediate and finished biological products.



The product portfolio of the Bioprocess Solutions Division was significantly broadened by the acquisition of selected life science businesses from Danaher Corporation. Among the new technologies and products added are chromatography systems and resins that are used in essential steps for the purification of biopharmaceuticals. Sartorius' offering for these process steps formerly centered on innovative membrane-based solutions until this acquisition and now has been expanded by complementary reusable and single-use technologies for the field of established column chromatography. Beyond this, the division's portfolio lineup in downstream processing has been strengthened by further acquired product groups in the areas of tangential flow filtration systems and flow kits. Overall, the expanded portfolio covers all purification strategies from small-volume lab-scale to commercial-scale production, which makes the division's offering more relevant from the customer's point of view and significantly strengthens the division's positioning.

Also resulting from the acquisition of selected Danaher life science businesses was the integration of the SoloHill business covering microcarrier technology and particle validation standards used in cell cultures and other bioprocesses.

The Sartorius portfolio for customers in the fast-growing field of advanced cell and gene therapies was expanded by the acquisition of BIA Separations in November 2020. The company develops and manufactures products for purification and analysis of large biomolecules, such as viruses, plasmids and mRNA, which are already used in production of the first commercialized advanced gene therapeutics. BIA Separations' innovative technology has been specially optimized for purification of advanced therapeutics, providing higher product yields and quality compared to alternative solutions and reduces the time customers need for installation and use.

Through the acquisition of the U.S.-based purification expert WaterSep in December 2020, Sartorius added single-use and reusable hollow-fiber membrane devices as well as presterilized assemblies for upstream and downstream applications to its current offering for cell and gene therapy applications, cell harvesting and various solutions for intensified bioprocessing.

During the reporting year, the division's portfolio was also strengthened by the further development of established product lines. For instance, our third-generation bioreactor system enables fast product development and seamless scale-up to commercial production, significantly accelerating timelines up to the clinical phase. The bioreactor, along with its data-controlled software and a comprehensive array of analytical tools, is operated by a new automation platform offering higher productivity, enhanced usability, more flexibility and lower costs.

Sartorius also updated its software for multivariate data analysis of biopharmaceutical production processes. This software collects, evaluates and controls quality-critical parameters, enabling customers to optimize, stabilize and lower costs while increasing productivity and product quality.

Likewise in the area of process analytics, Sartorius introduced a sensor that can be used in automated micro- and mini-bioreactor systems as well as in scalable bioreactors. In combination with an analytical instrument, the sensor simultaneously monitors a number of parameters that can be used for computer modeling to simulate production processes. The knowledge gained by these simulated production runs help the customer to scale up processes faster and more efficiently all the way to commercial-scale manufacturing.

## Sales Activities

The Bioprocess Solutions Division markets its product portfolio directly. Sales activities for key accounts are coordinated and supported by global key account management.

The way the division interacts with customers changed significantly during the reporting year due to the pandemic-related travel and contact restrictions. In addition, the division had to meet substantially higher demand and short timelines in development projects in connection with coronavirus vaccines and Covid-19 therapeutics. The company overcame these challenges by increased usage of videoconferencing and other digital communication tools, among other measures. For instance, Sartorius uses a special augmented reality device, a headset equipped with cameras and a microphone, which enables customers to view objects through "the eyes of the wearer" and to project holograms into the environment as needed. This permits real-time interaction over long distances and can be employed for giving product demonstrations, advising customers and providing repair instructions to name a few examples.

In the reporting year, Sartorius additionally entered into a partnership with a leading provider of consulting services in life science manufacturing. As a certified service and training partner, this company performs installation services, configures data connectors, develops multivariate models, provides customer-specific training courses and delivers online configurations, among other services. Through this alliance, Sartorius can keep pace with growing demand for software solutions and extend its reach.

## Product Development

Development activities at Sartorius essentially focus on technology areas such as membranes, which are the core component of our filter products; various technology platforms such as single-use containers for fluid management in biopharmaceutical processes and sensors; and control technologies for processes such as fermentation and cell cultivation. Additional focal areas entail developments in materials and components that include plastics, elastomers and intelligent polymers; expanded data analysis; and cell line development.

Our largest site for product development is Göttingen, Germany. Further key sites are in France, Germany, India, the USA, U.K., and Sweden. Through acquisitions, sites in Israel and Slovenia have been added since 2019.

## Production and Supply Chain Management

Bioprocess Solutions has a very well developed global production network that was expanded at many sites in the reporting year. The largest production facilities are located in Germany, France and Puerto Rico. Beyond these locations, this division also manufactures in the United Kingdom, Switzerland, Tunisia, India, the United States, China, and, since the acquisition of BIA Separations at the end of 2020, in Slovenia as well. The latter site in Ajdovščina will serve as Sartorius' center of competence for purification of cell and gene therapeutics in the future.

Moreover, by acquiring selected life science businesses from Danaher, Sartorius gained new sites in the U.K., France and the USA.

During the lockdown due to the coronavirus pandemic in the spring and fall, Sartorius was able to keep its production operations up and running. Despite the restrictions in worldwide logistics, the company's supply chains proved to be mostly stable.

Sartorius expanded its production due to additional demand related to coronavirus vaccines and Covid-19 therapeutics as well as the buildup in inventories by some customers. On top of this, the company hired additional production staff since the beginning of the pandemic and introduced an expanded shift system at a few sites to manufacture around the clock seven days a week.

At the end of 2020, Sartorius started up operations at a new Customer Interaction Center (CIC) in Marlborough, Massachusetts, USA, for biopharmaceutical customers. The CIC enables customers to test complex systems at our site first before these are delivered to and set up at their plant facilities.