PFEIFFER VACUUM

RESEARCH & DEVELOPMENT FOR OUR FUTURE

ANNUAL REPORT 2018

Research & Development for our future – the title theme of this annual report is also one of the six main pillars of Pfeiffer Vacuum's growth strategy. We can only participate in the megatrends of our target markets with innovative products and services that are tailored to the future needs of our customers. Our R&D work is crucial to achieve these goals and secure Pfeiffer Vacuum's long-term success. In this annual report, we provide you with insights into trends and challenges in R&D, at Pfeiffer Vacuum as well as at our customers. Learn how we identify the future needs of our customers at an early stage and how we work to develop matching vacuum solutions – for our world of tomorrow!

↗ ONLINE VERSION OF THE PFEIFFER VACUUM ANNUAL REPORT 2018

KEY FIGURES

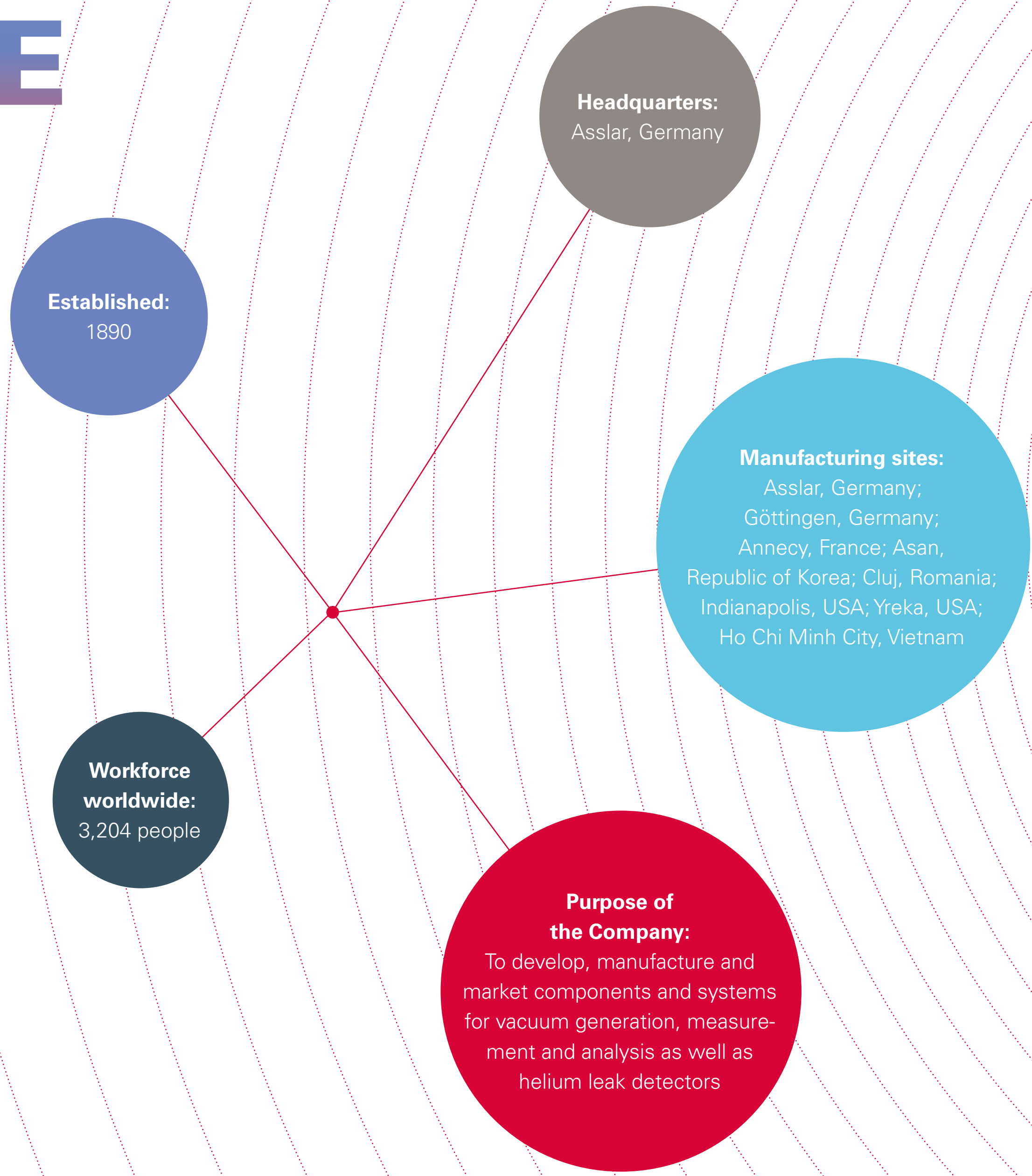
		2018	2017	Change
Sales and profit				
Total sales	K€	659,725	586,962	12.4 %
Operating profit	K€	95,130	71,386	33.3 %
Operating profit margin	%	14.4	12.2	2.2 Pp
Net income	K€	68,879	53,848	27.9 %
Return on sales	%	10.4	9.2	1.2 Pp
Operating cash flow	K€	62,547	71,397	– 12.4 %
Balance sheet				
Total shareholders' equity and liabilities	K€	624,160	553,361	12.8 %
Cash and cash equivalents	K€	108,380	97,402	11.3 %
Shareholders' equity	K€	372,225	320,937	16.0 %
Equity ratio	%	59.6	58.0	1.6 Pp
Return on equity	%	18.5	16.8	1.7 Pp
Capital expenditures	K€	33,669	27,678	21.6 %
Workforce				
Workforce (average)		3,101	2,809	10.4 %
Personnel costs	K€	211,972	190,970	11.0 %
Per employee	K€	68	68	0.0 %
Sales per employee	K€	213	209	1.9 %
Per share				
Earnings	€	6.98[1]	5.46	27.8 %
Dividend	€	2.30[1]	2.00	15.0 %

[1] Subject to the approval of the Supervisory Board and the Annual General Meeting

All percentages in this Annual Report were derived on the basis of amounts in thousands of euros. Rounding differences might result from their presentation in millions of euros.

CORPORATE PROFILE

Pfeiffer Vacuum – a name that stands for innovative solutions, high technology and dependable products, along with first-class service. For more than 125 years we have been setting standards in vacuum technology with these attributes. One very special milestone was the invention of the turbopump at our Company more than 50 years ago. Thanks to our know-how, we continue to be the technology and world market leader in this field. To no small degree, this also manifests itself in our strong profitability. Our extensive line of solutions, products and services ranges from vacuum pumps, measurement and analysis equipment as well as leak detectors right through to complex vacuum systems. And quality always plays a key role in this connection: Products from Pfeiffer Vacuum are constantly being optimized through close collaboration with customers from a wide variety of industries, through ongoing development work and through the exceptional enthusiasm and commitment of our people. These are virtues that we will continue to embrace!



CONTENT

We publish our annual report exclusively in digital format. It is available as PDF with complete content or in reduced form as an online version:
↗ ONLINE VERSION ANNUAL REPORT 2018

The following symbols will lead you to further interesting information:

↗ You will find more information online.

Additional information on this topic can be found within this report.

These links and references were inserted for better understanding. They are not part of the audited Group Management Report and the audited Consolidated Financial Statements.

I

TO OUR SHAREHOLDERS

↗ VIDEO MESSAGE OF THE CEO

OUR GROWTH STRATEGY IS BASED ON SIX STRATEGIC PILLARS – ONE OF THEM IS OUR INNOVATIVE FORCE IN R&D.

Dear shareholders

2018 was a trailblazing year for Pfeiffer Vacuum: it marked the start of the transformation period which will realign our Company for a successful future. The goal of this major transformation is to make Pfeiffer Vacuum the Top 2 player in the vacuum industry. Actually, we are already the number 2, but with a sizable gap to the number 1. We want to substantially reduce this gap by increasing our market share to more than 20 %.

The great financial results of the year 2018 show that we have a strong starting position: we achieved sales of € 659.7 million, which means an increase of 12.4 % compared to last year and a new sales record for the Company.

Within the next years, we want to grow further. To do so, we have developed a growth strategy that we will pursue ambitiously. The core elements of this strategy are significantly bigger investments than in the past. With them, we aim to increase our capacities worldwide, to modernize our operations as well as our IT infrastructure and to expand our global footprint – especially in Asia. Moreover, we will strongly enhance our R&D to benefit from digitalization, to innovate our products and to strengthen their technological intelligence as well as connectivity. This is why we developed a three-year investment plan of € 150 million in March 2018, with which we will speed up the implementation of our Group strategy from 2018 to 2020. The average of the investments made in the last ten years (2007–2017) amounted to € 10–15 million per year – this clearly underlines our great need for action.

Another important transformation that currently takes place inside the Pfeiffer Vacuum Group affects the management culture: we foster a much stronger collaboration between the worldwide locations of Pfeiffer Vacuum to seize synergies, benefit from global best practice approaches and create an international team spirit. To shorten our response times and to make our way of working efficient and agile, we empower our people, giving them more responsibility as well as decision authority.

This part of the transformation process started in January 2019 with the introduction of the new functions of the Management Board members: We now have the global positions of Chief Sales Officer (CSO), Chief Financial Officer (CFO), Chief Technology Officer (CTO) and Chief Operations Officer (COO). We consider this re-arrangement of the organizational structure of the Management Board vital for implementing the individual areas of our growth strategy more quickly and with a greater focus by having dedicated responsibilities in the functional leadership of the Group.

I want to use the opportunity to give you, dear shareholders, an overview of these individual areas of our strategy. It is based on these six main pillars:

1. Fields of application – participating in the future megatrends
2. Innovation leadership – growth through new products
3. New business models – e.g. wider service offerings
4. China – expanding our presence in the world's fastest growing market
5. Supply chain & global footprint – seize benefits of global procurement and customer proximity
6. Selective acquisitions to extend technology, presence and product portfolio

We have to know the demands and requirements of our customers and foster our innovation to develop the vacuum equipment of the future.

What lies in detail behind these pillars and how do we plan to reach them? To answer these questions and to get more information on the ongoing transformation of our Company, we invite you to visit the online version of this year's annual report, where we provide you with more details and interactive content on our strategic goals.
↗ ONLINE VERSION ANNUAL REPORT 2018

We would like to give you more insights into one of the most important pillars of our growth strategy: our innovative force and the goal to grow through the development of new products. Therefore, the annual report 2018 centers around the R&D work at Pfeiffer Vacuum.

Only if we provide the right products for the megatrends in our target markets, will we be able to realize our ambitious goals. We have to know the demands and requirements of our customers and foster our innovation to develop the vacuum equipment of the future. Digitalization, energy transition, biotechnology as well as nanotechnology and life-science are the fields of application that will shape our world of tomorrow – and they all need vacuum solutions. Our R&D work is crucial for taking part in these trends and for realizing the market share growth as well as the increase in profitability that we foresee for our Company. Our customers' technologies are incredibly exciting and promising. We, Pfeiffer Vacuum, want to provide our customers with leading vacuum technology solutions so that they can manufacture high-quality products. This is our strong commitment to them: we are here to make our customers more successful.

Dear shareholders, dear stakeholders, as you can see, we have an exciting and eventful path behind and in front of us. And the most important asset of all that we have to tread this path is our excellent, dedicated employees who, together with us, are implementing all these changes in order to lead Pfeiffer Vacuum into a successful future.

On behalf of the Management Board and our employees, I would like to thank you for your trust and support in 2018. I hope that it remains the same in 2019 so that we altogether continue to strive for sustainable growth to ensure the future success of our Company.

Sincerely yours,

Dr. Eric Taberlet
CEO of Pfeiffer Vacuum Technology AG

MANAGEMENT BOARD

Nathalie Benedikt
(CFO)

↗ CV

Dr. Matthias Wiemer
(Board member)

↗ CV

Dr. Ulrich von Hülsen
(CTO)

↗ CV

Dr. Eric Taberlet
(CEO and CSO)

↗ CV

CVs of our Supervisory Board members are available on our website:
↗ CVs SUPERVISORY BOARD

REPORT OF THE SUPERVISORY BOARD

Dear Shareholders,

In fiscal 2018, the Supervisory Board of Pfeiffer Vacuum Technology AG correctly fulfilled all the duties vested in it by law, the Articles of Association and the Supervisory Board's rules of procedure. It monitored the work of the Management Board within the scope of its legal duties, accompanied and advised on the strategic further development of the Company and satisfied itself about the legality and expediency of the managerial work on the basis of the Management Board's reports with occasional use of external expert advice. Furthermore, the Supervisory Board continuously monitored the organization of the Company and Corporate Group and the cost-effectiveness of corporate management. In addition, a regular exchange of information took place between the Supervisory Board and/or the Supervisory Board Chairwoman and the Management Board.

Cooperation between Supervisory Board and Management Board

In the view of the Supervisory Board, the Management Board informed the Supervisory Board and/or the Supervisory Board chairwoman regularly, comprehensively and in a timely manner about the competitive environment, planned business policy and all strategic and crucial operational decisions in the course of the past fiscal year. In the same way, the Management Board discussed key financial and non-financial performance indicators with the Supervisory Board as a basis for evaluating the economic situation of the Company.

The Management Board reported during Supervisory Board meetings in oral or written form and replied within this setting to questions from the Supervisory Board. Outside of the meetings, the exchange of information with the Supervisory Board was also ensured with regular reports on the economic development of the Company and the Corporate Group and on the key occurrences within Pfeiffer Vacuum Technology AG. The Supervisory Board is satisfied that Management Board reporting met the statutory and Supervisory Board's requirements.

In fiscal 2018, business transactions requiring approval were decided by the Supervisory Board and, under certain conditions, also by individual committees, after these had adequately reviewed and discussed the issues with the Management Board.

Personnel changes in Supervisory Board and Management Board

After the personnel changes in the Supervisory and Management Boards in 2017, Mr. Henrik Newerla was appointed as a new member of the Supervisory Board by the Wetzlar District Court with effect from March 19, 2018. Henrik Newerla and his technical expertise is an enrichment for the Supervisory Board as well as for the entire Company; in the competence profile of the Supervisory Board, he covers the areas of digitization and IT as well as research, development, production and sales in the field of products and technologies relevant to Pfeiffer Vacuum Technology AG. The members of the Supervisory Board, Ms. Ayla Busch and Mr. Henrik Newerla, who were judicially appointed after the Annual General Meeting on May 23, 2017, and before the Annual General Meeting on May 23, 2018, were elected as Supervisory Board members by resolution of this Annual General Meeting.

Other than that, there were no changes in the composition of the Supervisory Board and the Management Board in the 2018 fiscal year. The proportion of women on the Supervisory Board is 16.7 % and 25 % on the Management Board, with reference in each case to the reporting date of March 14, 2019.

Supervisory Board meetings and issues of Supervisory Board work

During 2018, the Supervisory Board informed itself again in depth about the current situation of the Company and the Corporate Group in a total of **18 meetings**, and discussed this in detail with the Management Board.

At the meetings on **January 24**, **February 19**, and **March 7, 2018**, the Supervisory Board dealt with the medium-term corporate strategy proposed by the Supervisory Board and thus developed for the first time by the Management Board in conjunction with a new, supporting three-year investment plan. Together with the Management Board, an investment plan with a total volume of 150 million euros was approved, which provides for a significant increase in annual investments. This should strengthen the technology leadership and the competitiveness of the company. This plan includes, in particular, investments in the expansion and modernization of production capacities, the intensification of research and development, stepping up Industry 4.0 efforts, and the expansion of the Group's presence in Asia as a whole and China, in particular. The conference on February 19 was held in the form of a video conference. All members of the Supervisory Board attended these three meetings.

During the meeting on **March 6, 2018**, which was held in the form of a conference call and was attended by all Supervisory Board members, the candidature of Mr. Henrik Newerla as a new Supervisory Board member was discussed conclusively and, on the basis of a corresponding resolution, Henrik Newerla was appointed a Supervisory Board member as of March 19, 2018, by Wetzlar District Court.

At the Supervisory Board meeting on **March 20, 2018**, the Supervisory Board members discussed in detail the annual financial statements and the consolidated financial statements of the Company prepared in accordance with International Financial Reporting Standards (IFRS), the management reports and the auditor's report. In particular, contents of the report on the "non-financial performance" or "non-financial consolidated statement" (NFE), which was to be published for the first time in 2017, were discussed between the auditor and the Supervisory Board. After a detailed examination, the Supervisory Board approved the annual financial statements and the consolidated financial statements at this meeting.

At the meeting held as a conference call on **April 23, 2018**, the Supervisory Board approved the Separate Non-Financial Group Report prepared by the Management Board in accordance with §315b Sub-Para.1 and Sub-Para. 3 and 315c of the German Commercial Code ("HGB"). The Supervisory Board discussed the contents of the report, which had previously been reviewed with the support of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.

At the meetings on **January 24**, **March 19**, **May 2**, **May 23**, **August 1**, **September 28**, **November 5** and **December 5, 2018**, the Board dealt with the general course of business, financial results and the strategic orientation of the Company and measures for continuing to boost profitability and efficiency of the overall company. In this context, the Supervisory Board accompanied the development of global strategies in the areas of communications, human resources, IT, sourcing and production by the Management Board.

At the meetings on **January 24**, **May 2**, **May 23**, **August 1**, **September 28**, **November 5** and **December 5, 2018**, the Supervisory Board also deliberated on the Compliance Management System and the Compliance Organization of the Company. The experts from PricewaterhouseCoopers GmbH, who were appointed for a new analysis of the compliance management system, presented their final report, including a list of recommendations, at the meetings on **July 4** and **August 1, 2018**, and discussed it with the Supervisory Board members. In the further meetings, the Supervisory Board supported the significant and company-specific expansion of the compliance management system in close contact with the responsible member of the Management Board, Nathalie Benedikt. The goal is to cover all relevant risk areas, harmonize reporting within the Group, and strengthen the culture of compliance. The meetings on August 1 and September 28, 2018, took place in the form of a conference call. All members of the Supervisory Board attended these eight meetings.

At the meetings on **August 1** and **August 29, 2018**, which all Supervisory Board members took part in by conference call, the Supervisory Board dealt with an expansion of the production site in Annecy. After the Supervisory Board members, Ms. Ayla Busch and Mr. Henrik Newerla, visited the production site in Annecy on August 24, 2018, the Supervisory Board approved the expansion project in principle at the meeting on August 29, 2018. As part of the meeting on September 28, 2018, which took place in Annecy, all Supervisory Board members, together with the Management Board, visited the production site in Annecy and informed themselves about certain details of the expansion plans.

At the meeting on **October 23, 2018**, which was held in the form of a conference call, the Supervisory Board for the first time, and at the behest of the Management Board, looked in principle at the possibility of a strategic cooperation with the Busch Group in the form of a relationship agreement, and discussed this with the Management Board. This should allow closer cooperation between the two companies, especially in the areas of purchasing, sales and service, research and development and IT. At the meeting on **November 5, 2018**, negotiations with the Busch Group were approved, the status of which the Management Board reported on at the Supervisory Board meeting on **December 5, 2018**. In the latter meeting, the Supervisory Board decided to seek external legal advice, separately from the Management Board, regarding this possible strategic cooperation. In view of the potential conflict of interest regarding the person of Ayla Busch, who is also a shareholder and board member of the Busch Group, the Supervisory Board decided that, in connection with this planned strategic cooperation, Götz Timmerbeil acts as the contact person and discussion leader for the Supervisory Board; Ayla Busch will abstain from voting on the strategic cooperation. All Supervisory Board members attended all three meetings.

On the basis of the proposals prepared by the Management Board Committee, the Supervisory Board agreed on a new allocation of responsibilities within the Management Board as of January 1, 2019, at its meeting on **November 5, 2018**. In accordance with the decision of the Management Board and Supervisory Board, the Company is to be organized in the future according to its global business functions. The functions Chief Sales Officer, Chief Technology Officer and Chief Operations Officer were newly created. Chairman of the Board, Eric Taberlet, takes over the position of Chief Sales Officer. Ulrich von Hülsen becomes Chief Technology Officer. For the long-term appointment of the Chief Operations Officer, the search has begun for a suitable candidate for this board position. An external personnel consulting firm was commissioned to ensure a structured, professional and transparent search process, which is closely monitored by Supervisory Board Chairwoman, Ayla Busch, for the Supervisory Board.

At the meeting on **November 5, 2018**, the Supervisory Board also decided, taking the legal requirements and the recommendations of the German Corporate Governance Code (DCGK) into account, to develop a profile of competences and requirements that is available on the Company's website. In addition to the definition of areas in which knowledge, skills and experience are considered essential for the exercise of qualified supervision and advice to the Management Board, the competence and requirements profile contains concrete objectives for the composition of the Supervisory Board. These concrete objectives concerning the makeup of the Supervisory Board are based on the criteria of internationality, the avoidance of potential conflicts of interest, independence, availability for the role, a mix of generations and an age limit, length of service and diversity.

Supervisory Board Committees

The Supervisory Board has three committees since its meeting on October 26, 2017, in which the resolution of the Management Committee was decided:

- A Management Board Committee,
- A Nomination Committee and
- An Audit Committee.

The composition of the committees at the meeting on May 23, 2018, following the Annual General Meeting, was approved as follows:

Management Board Committee
- Ayla Busch (Chairwoman)
- Filippo Th. Beck
- Henrik Newerla
- Götz Timmerbeil

Nomination Committee
- Ayla Busch (Chairwoman)
- Filippo Th. Beck
- Götz Timmerbeil

Audit Committee
- Götz Timmerbeil (Chairman)
- Filippo Th. Beck
- Ayla Busch

The **Management Board Committee** met on October 22, 2018. At this meeting, the committee focused on the preparation of the overall Supervisory Board meeting which took place on November 5 where, among other things, the new allocation of responsibilities within the Board of Management as of January 1, 2019, was decided. During the year, the members of the committee also consulted each other at regular intervals in informal phone conversations. All members attended this meeting.

The **Audit Committee** held a meeting on November 5, 2018, at which representatives of the auditor were also present. The Audit Committee was in regular contact with the auditor and discussed and decided upon the audit procedure, the scope and the focus of the audit, and any special questions about the audit with the independent auditor. The Audit Committee consulted intensively with the auditor in connection with the explanations on the legality, regularity and expediency of the statements and the critical assessment of the concept and risks. All members attended the meeting.

No meetings of the **Nomination Committee** were held in the 2018 fiscal year.

Corporate Governance

The Supervisory Board recognizes the principles of good governance and also addressed this issue in fiscal 2018. An essential basis for this is the extensive recognition of the recommendations of the German Corporate Governance Code (GCGC) based on the version of February 7, 2017. This does not preclude deviating from the GCGC recommendations in individual justified cases. As a listed company, Pfeiffer Vacuum Technology AG is subject to the obligation under § 161 Sub-Para.1 of the German Stock Corporation Act ("AktG") to declare the extent to which the recommendations of the German Corporate Governance Code have been and will be complied with, or which recommendations have not been or will not be applied, and to justify deviations from recommendations (statement of compliance). The Management Board and Supervisory Board, the latter represented by the Supervisory Board Chairwoman, Ayla Busch, who was authorized at the meeting on November 5, submitted a declaration of compliance on December 5, 2018, which is available on the Company's website. Furthermore, the efficiency review of the Supervisory Board was carefully carried out at the meeting on November 5, 2018, with the support of external experts.

The members of the Supervisory Board of Pfeiffer Vacuum Technology AG are obliged to disclose to the Supervisory Board any possible conflicts of interest, in particular those which could arise through consulting or executive functions at customers, suppliers, lenders or other third parties. With the exception of the planned strategic cooperation agreement with the Busch Group, which has been a majority shareholder in the Company since November 2, 2018, and in which the Supervisory Board Chairman, Ms. Ayla Busch, is a shareholder and a board member, there are no indications of actual or potential conflicts of interest in the 2018 fiscal year. In order to deal with the potential conflict of interest regarding the person of Ayla Busch, the Supervisory Board has decided that, in connection with this planned strategic cooperation, Götz Timmerbeil will act as the contact person and discussion leader for the Supervisory Board; Ayla Busch will abstain from voting on the strategic cooperation.

Audit of Annual and Consolidated Financial Statements, Dependency Report

At the same meeting, the Supervisory Board decided to commission the auditing company PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, to audit the annual financial statements and the consolidated financial statements of the Company, prepared in accordance with IFRS and, to the extent required by law, of the subsidiaries. Pursuant to § 315e of the German Commercial Code, the Company did not prepare consolidated financial statements presented in accordance with the rules of the German Commercial Code. PricewaterhouseCoopers GmbH was also commissioned to audit the report on "non-financial performance" and "non-financial consolidated statements", which was approved by the Supervisory Board at the meeting on November 5, 2018.

At the meeting on November 5, 2018, the Audit Committee and the auditor defined, among other things, key audit points of (i) accounting for goodwill, (ii) auditing revenue recognition in the operating companies, and (iii) examining the application and impact of IFRS 9, IFRS 15 and IFRS 16.

The Annual Financial Statements and the Management Report as well as the Consolidated Financial Statements presented in accordance with IFRS, together with the Group Management Report, all for the 2018 fiscal year and all of which prepared by the Management Board, were audited by the independent auditor and received his unqualified endorsement.

The Annual Financial Statements, the Management Report for the Company and the Corporate Group, as well as the audit reports from the independent auditor were submitted to all members of the Supervisory Board in a timely fashion. They were discussed in detail at the Audit Committee meeting as well as at the Supervisory Board meeting relating to the financial statements on March 14, 2019. The independent auditor attended the meetings, reported on the major findings of his audit and was available to answer additional questions from the Supervisory Board. On the basis of its own thorough review, the Supervisory Board concurred with the results of the audit conducted by the independent auditor. Given the concluding results of its review, the Supervisory Board raised no objections to the Annual and Consolidated Financial Statements. It has approved the Annual and Consolidated Financial Statements, with the Financial Statements thus being formally adopted. The Supervisory Board discussed in detail with the Management Board its proposal regarding the distribution of a dividend and then concurred with the Management Board's proposal regarding appropriation of the Company's retained earnings.

Additionally, the Management Board of Pfeiffer Vacuum Technology AG has drawn up a report on relationships with affiliated companies for the fiscal year 2018 ("dependency report"), in accordance with § 312 Sub-Para. 1 of the German Stock Corporation Act ("AktG") and afterwards presented this report to the Supervisory Board.

PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, audited the dependency report and issued the following auditor's report:

"According to our professional audit and judgment we confirm that:

1. the actual disclosures in the report are correct and,

2. the Company's payment for legal transactions as included in the report was not inadequately high."

The Management Board's dependency report as well as the related independent auditor's report were submitted the Supervisory Board. The Supervisory Board reviewed both, the dependency report as well as the auditor's report. Final review was made in the Supervisory Board meeting on March 14, 2019. The independent auditor attended this meeting, reported on audit of the dependency report and the major findings of his audit and was available to answer additional questions from the Supervisory Board. After the final review the Supervisory Board concurred with the dependency report of the Management Board and the audit report of the auditor and had no objections against the final declaration of the Management Board at the end of the dependency report.

Review of the Content of the Separate Non-Financial Group Report

The Supervisory Board discussed in detail and audited the content of the reporting on the issues described in the Law to Strengthen the Non-Financial Reporting of Companies in their Management Reports and Group Management Reports (CSR guideline implementation law) of April 11, 2017, within the scope of the Separate Non-Financial Group Report of Pfeiffer Vacuum Technology AG for the reporting period from January 1 to December 31, 2017. At its meeting on April 23, 2018, the Supervisory Board resolved to approve the Separate Non-Financial Group Report of the Company for the reporting period from January 1 to December 31, 2017. The content of the non-financial reporting was reviewed by the Supervisory Board with the support of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft as part of an audit on the achievement of limited assurance pursuant to the International Standard on Assurance Engagements (ISAE) 3000 (Revised). The audit did not reveal any facts that would have led the auditing firm to the conclusion that the Separate Non-Financial Group Report of Pfeiffer Vacuum Technology AG for the period from January 1 to December 31, 2017, had not been prepared, in all material respects, in accordance with §315c of the German Commercial Code ("HGB").

Acknowledgments

The Supervisory Board would like to sincerely thank the Management Board in its present composition, the Employee Council and the entire staff of the Group for their dedication and commitment in the successful 2018 fiscal year.

Adoption of this Report

The Supervisory Board adopted this Supervisory Board Report in the resolution dated March 14, 2019, pursuant to § 171 Sub-Para. 2 of the German Stock Corporation Act ("AktG").

Asslar, March 14, 2019

On behalf of the Supervisory Board

Ayla Busch
(Chairwoman of the Supervisory Board)

I RESEARCH & DEVELOPMENT AT PFEIFFER VACUUM

OUR FUTURE NEEDS VACUUM NEEDS RESEARCH NEEDS PFEIFFER VACUUM

1.

Our future needs vacuum
Vacuum technology is a fundamental basis for the emerging megatrends.

2.

Progress needs research
The research departments of our customers lay the foundation for our world of tomorrow.

3.

Research for our future needs Pfeiffer Vacuum
Pfeiffer Vacuum enables its customers to conduct research on the applications of the future – our products are the key tools for their work.

OUR FUTURE NEEDS VACUUM

Vacuum technology is already a fundamental basis of our life – and also the future megatrends will not be possible without it.

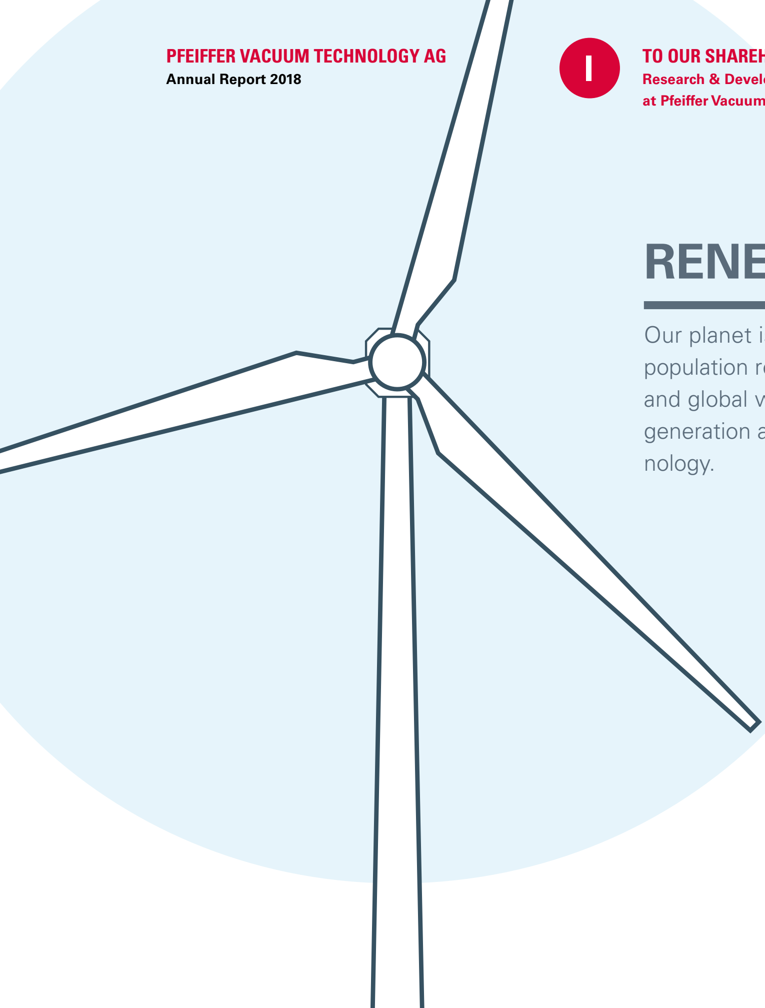
1.

VIRTUAL AND AUGMENTED REALITY

The creation of fictive environments by the aid of the virtual reality (VR) technology is on the rise. VR is not only used in video games, exhibitions or movies but also in industry. The mixing of virtual and physical reality is known as "Augmented Reality", which is already used for architectural or landscape design as well as in Research & Development. Without vacuum, no VR glasses or cameras could be manufactured.

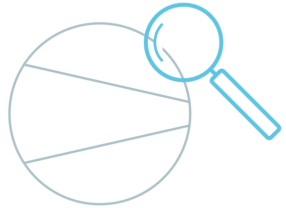
DIGITALIZATION

We are currently experiencing the digitalization of our world: laptops, smartphones and tablets ensure unlimited connectivity around the globe. Self-driving cars are developed and we control the lightning and heating of our homes with smart home solutions. All technical foundations of these applications would not exist without vacuum.



RENEWABLE ENERGIES

Our planet is becoming more and more crowded – and an ever increasing population results in a rising demand for energy. To prevent climate change and global warming, the promotion of renewable energies is in focus. The generation and storage of these green forms of energy require vacuum technology.



INDUSTRY 4.0

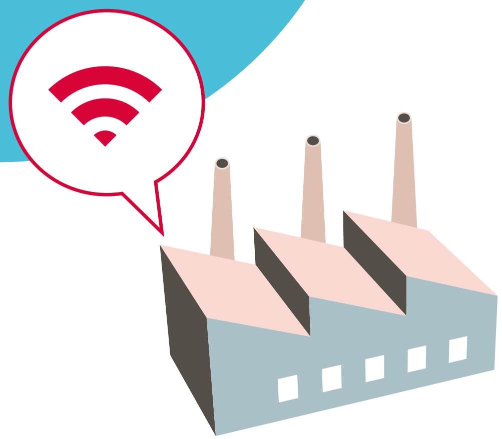
Interlinking human manpower, machines, systems, production processes and logistics via digital, modern IT and communication measures is the goal of Industry 4.0. The principle aims at making industrial production more efficient, lean and comprehensive. All the measures and systems used for interlinking the process constituents work only thanks to vacuum technology.

What role does vacuum play in the development of these megatrends?

See for yourself on the next page!

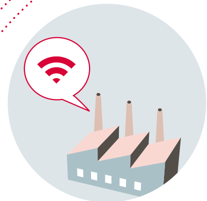
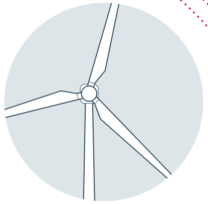
ELECTROMOBILITY

Electromobility is one of the cornerstones in our society's pursuit of a sustainable and climate-friendly transport system. Electric trains, cars, motor bikes, busses, trucks or bikes would not be able to move without vacuum technology – the necessary parts and energy storage devices are produced and operated with the help of vacuum.



2. PROGRESS NEEDS RESEARCH

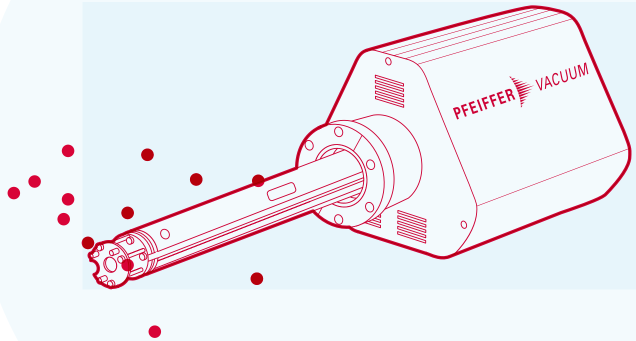
Groundbreaking applications of the future can only be realized through intensive research.

megatrends

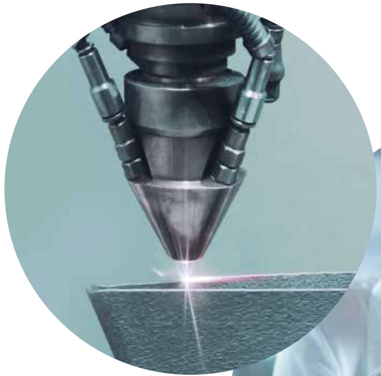

Our customers work with the latest technology and most modern research tools in their R&D departments to set new standards in their sectors.

Through extensive interchange and collaboration, Pfeiffer Vacuum provides its customers with the needed equipment for their laboratories and research facilities.



REQUIREMENTS OF OUR CUSTOMERS

The requirements of our customers get increasingly specific. What can be observed more and more frequently is the fusion of the vacuum pump with the rest of the vacuum system. It is thus convenient for our customers to purchase individually tested system assemblies from Pfeiffer Vacuum. The close collaboration with customers is the key element for the R&D work of the next few years: Only if we know which challenges our products must meet, we can offer the right solutions.



DIGITAL R&D PROCESSES

The ongoing digitalization also impacts the R&D work of our customers. Modern simulation programs and 3D models are standard. In the future, Virtual Reality will become a major tool in the R&D departments of pioneering companies.

THE KEY TO THE FUTURE

Expertise and advice mixed with digitalization

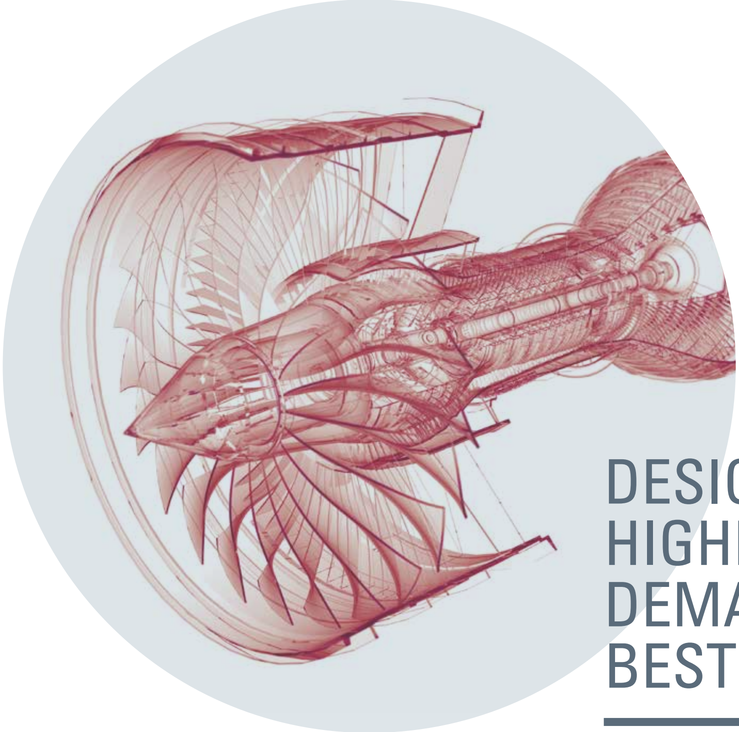
Through close cooperation, Pfeiffer Vacuum has gained a broad knowledge of its customers' applications. With simulation and calculation programs developed in-house, we provide our customers with detailed advice and support in the design of their systems. In addition to face-to-face meetings, digital communication and virtual reality will become increasingly important in the future.

3. RESEARCH FOR OUR FUTURE NEEDS PFEIFFER VACUUM

The research and development work at Pfeiffer Vacuum lays the foundation for the R&D of our customers as well as for the vacuum applications of the future.

The pioneering companies and institutions in the different sectors use our products in their R&D to explore new fields and develop new applications. Did you know that, for example, our turbopumps, measurement and leak detection equipment as well as our components are used to advance research on the use of nuclear fusion to generate renewable energy? Our products are also applied in the development of stationary and mobile flywheel systems. These technologies will be used in the future for storing and supplying energy – for example in Uninterruptible Power Supplies (UPS) of data centers or hospitals as well as for climate-friendly propulsion of vehicles. ↗ LEARN MORE

In the coming years, high-quality consulting, close cooperation with our customers as well as the design of customer-specific complete solutions will become key factors for our economic success. This applies to all areas of the Company, from sales to production and service up to our R&D work. Efficient, digital processes, the further development of our broad product portfolio and our developers' ability to think outside the box by working with customers from a wide variety of industries will ensure that we remain the technology leader in the vacuum industry.

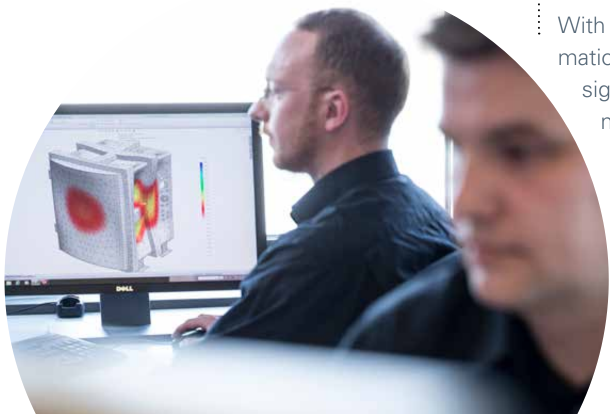


DESIGN: HIGHEST DEMANDS FOR BEST SOLUTIONS

QUALITY, DESIGN, AND SAFETY ARE CRUCIAL IN OUR R&D WORK.

Demands from our customers and trends in our markets indicate the need for the development of new products or product variations. Precision, conciseness and the clear orientation of the needs of the markets are key to our research and development work – right from the design stage.

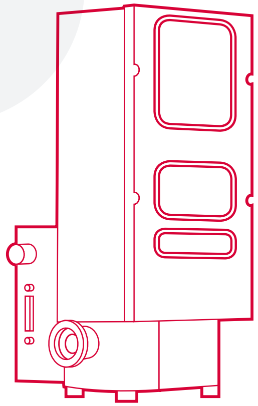
With the help of Augmented Reality, 3D animations and CAD data, our developers design our products according to defined needs and requirements. Already at this state, we closely collaborate with the R&D departments of our customers to adhere to our principles of precision and conciseness.



QUALITY: HIGHLY ACCURATE TESTS FOR FLAWLESS PRODUCTS

Each newly developed product leaves the R&D stage only after it has passed strict quality control tests under realistic conditions. With our modern test stations, we are able to mount the pumps in the positions in which they will later also be used by our customers in their R&D and production. In this way, we can verify their correct function under real conditions.

With extensive testing in our R&D departments, individual standards and threshold values are determined for the different pump types. Once a new product is released for serial production, these values serve as a guideline for the quality tests in our own production that all products must pass before they are delivered to the customer.



The R&D departments at our two largest locations in Asslar and Annecy work closely together with the R&D departments at other subsidiaries and provide groundbreaking impetus for the further development of our broad product portfolio.

TRENDS IN RESEARCH AND DEVELOPMENT

Many pilot projects are currently running in our global R&D departments to test the use of the latest technologies in the development of our products. The biggest trends here are Virtual and Augmented Reality. However, 3D printing is also becoming an increasingly important tool for our developers.

SAFETY: CRASH TESTS TO PROVE THAT OUR TURBOPUMPS ARE SAFE

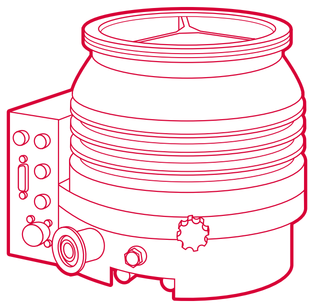
The rotor of a turbopump rotates up to 90,000 times per minute – this is almost the speed of sound at the outer radius. It is easy to imagine that when a rotor crashes at full speed, it causes severe damage. Therefore, safety is one of the most important aspects in our R&D work. Our developers regularly carry out crash tests in a dedicated test room during which turbopumps are deliberately destroyed to make sure that the housing withstands the forces released by a rotor crash.

Even though such massive failures thankfully do not happen often in practice, they cannot be completely prevented either when operating turbopumps. A rotor crash can happen when a foreign object drops into the pump – for example as a result from a wafer breaking – or if a contact between rotor and stator occurs due to incorrect installation or operating errors.

OUR DEVELOPERS REGULARLY CARRY OUT CRASH TESTS ON OUR TURBOPUMPS

To prevent massive damage or even harm to people, Pfeiffer Vacuum tests its pumps under extreme conditions. Therefore, not only crash tests are conducted, but also long-term test cycles that last up to one year and expose the pumps to overloads.

View inside a turbopump after it had been deliberately crashed during a safety test.



OUR GUIDELINE FOR THE FUTURE

Besides the use of digital tools, our experience from the past years has shown that good communication and close cooperation between Pfeiffer Vacuum and its customers have significantly enhanced innovative strength and competitiveness on both sides. We will continue and intensify this course also in the future.

VACUUM SOLUTIONS

OUR VACUUM SOLUTIONS – TAILORED TO THE NEEDS OF OUR CUSTOMERS

Our customers' fields of application are extremely diverse – and so are their expectations and demands on our products. Thankfully, we have a portfolio of vacuum solutions that is just as broad. This allows us to design individual vacuum solutions tailored to the specific needs of our customers.

Our guideline: technological excellence and highest quality standards

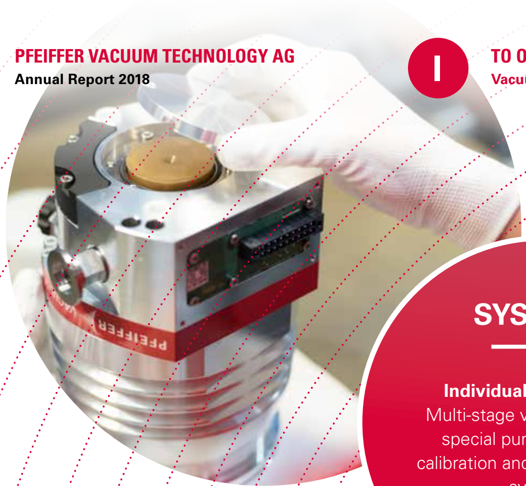
APPLICATION EXAMPLES FOR VACUUM SOLUTIONS:

- Analysis technology
- Chemical industry
- Coating of glasses, architectural glass, tools, flat screens, Blu-ray discs
- Drying processes
- Food and beverage industry
- Leak detection for the automotive industry
- Manufacturing solar cells
- Paper manufacturing
- Pharmaceutical industry
- Semiconductor production
- Solar thermal plants
- Space simulation
- Steel degassing

For each vacuum solution we design, the same guidelines apply: technological excellence matched with the highest quality standards from the development stage right through to commissioning. We know that for each of our customers, the perfect vacuum solution looks different. This is why the same standards apply to all our various products for evacuating, measuring, and analyzing vacuum – consultation and service included.

KEY FACTORS FOR COMPILING A VACUUM SOLUTION

- Number and types of gases in one container
- Pressure and flow velocity
- Intended final pressure and base pressure
- Pumping speed and throughput



ELEMENTS OF VACUUM-SOLUTIONS

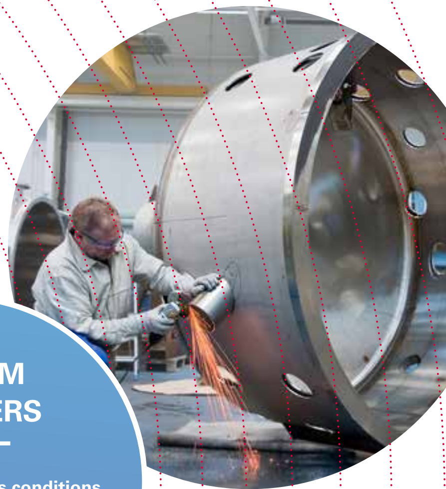
More about our vacuum solutions
↗ PFEIFFER-VACUUM/SOLUTIONS

TURBOPUMPS

High and ultra-high vacuum
Magnetic and hybrid bearing turbopumps and turbo pumping stations

BACKING PUMPS

Low and medium vacuum
Rotary vane, diaphragm, Roots, side channel, screw and piston pumps in addition to pumping stations



VACUUM CHAMBERS

Depending on process conditions
Low, medium, and high vacuum chambers in individual shapes and sizes

MEASUREMENT AND ANALYSIS EQUIPMENT

For all pressure ranges
Leak detectors, gas analyzers, gauges, and mass spectrometers

COMPONENTS

Valves and components
Gaskets, filters, valves, flanges, electrical feedthroughs, manipulators, bellows components, and other accessories

SERVICE

Flexible service module
Technical training and seminars, on-site service, comprehensive service contracts, regional service centers, replacement products, and original replacement parts

CONSULTATION

Absolute customer orientation
Needs assessment, design, and calculation of vacuum systems as well as product consultation

SYSTEMS

Individual technologies
Multi-stage vacuum systems, special pumping stations, calibration and decontamination systems

PRODUCT PORTFOLIO

↗ PFEIFFER-VACUUM/PRODUCTS

Our comprehensive product portfolio – the solution enabler

With our comprehensive product portfolio, we are able to offer the matching vacuum solution for each customer and each application.

WHAT IS THE MICRO-FLOW TECHNOLOGY?

The heart of the Micro-Flow technology are our Intelligent Gas Leak Sensors (IGLS). The sensors measure flow, pressure and temperature to provide an output that is directly proportional to the leak rate respectively defect size. When air leaks from the unit or assembly under test, the emitted air is replenished through the Micro-Flow sensor to maintain a constant pressure. The loss causes an electrical signal proportional to the volume flow.

OUR SYSTEMS IN USE

Our complete vacuum systems are used, for example, to test components for the automotive and electronics industry as well as vessels or packaging in the food industry. The range includes systems for leak detection and contamination management as well as multi-stage vacuum systems and the AMI integrity test system for pharmaceutical packs.

DID YOU KNOW?

Pfeiffer Vacuum's patented AMI in-line integrity test system does not require any specific tracer gas. Instead, the gas mixture present in the container headspace of the primary packaging is used to perform high sensitivity tests over a large detection range. It is used to detect contamination such as humidity, oxygen or microbiological ingress, which can impact drug stability or cause biological ingress of parenteral drugs.

Areas of our product portfolio

↗ PFEIFFER-VACUUM/PRODUCTS

Vacuum generation

BACKING PUMP PORTFOLIO

- Rotary vane pumps
- Multi-stage Roots pumps
- Dry process pumps
- Roots pumping stations

OUR RANGE OF TURBOPUMPS

- Hybrid
- Magnetically levitated
- Turbo pumping stations
- SplitFlow

Vacuum measurement and analysis

MEASUREMENT AND ANALYSIS EQUIPMENT

- Mass spectrometers
- Gauge heads
- Gas analysis equipment

Installation elements

INSTALLATION ELEMENTS

- Feedthroughs
- Valves
- Components
- Manipulators

Vacuum systems

VACUUM SYSTEMS

- Contamination management solutions
- Multi-stage vacuum systems
- Integrity testing

Vacuum chambers

VACUUM CHAMBERS

- Cylindrical
- Horizontal
- Vertical
- Cubical
- Modular
- For any pressure range

Leak detection

LEAK DETECTION SOLUTIONS

- Leak detectors
- Micro-Flow

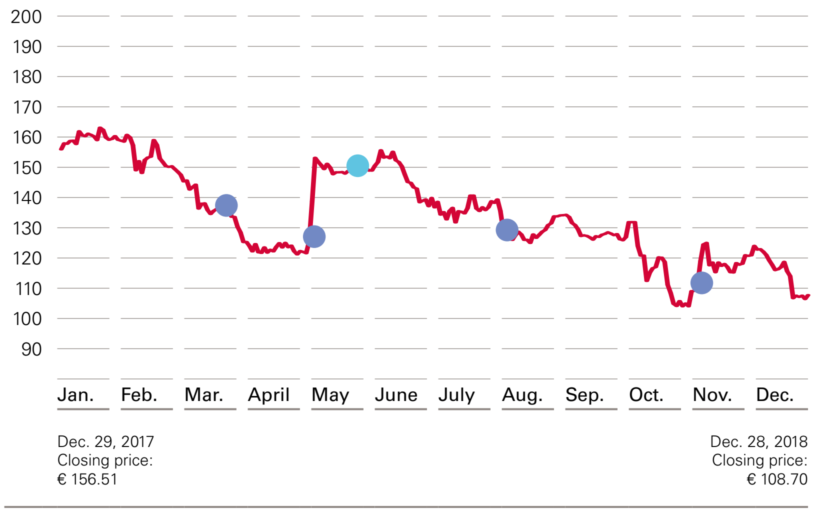
SHARE PERFORMANCE

Share price development in the year of strategic realignment, long-term return

The Pfeiffer Vacuum Technology AG share (Pfeiffer Vacuum) started the trading year on January 2, 2018 at a price of € 157.00 and reached the high for the year of € 164.20 on January 19, 2018. In the further course of the first quarter, the development of the Pfeiffer Vacuum share was much more volatile than the market. At the beginning of May, it again exceeded the value of € 150.00 and remained within a range of between € 150.00 and € 125.00 until the end of the third quarter. The Pfeiffer Vacuum share was unable to escape the increasing geopolitical uncertainties and weaker forecasts for the financial market in the fourth quarter. On October 26, 2018, it reached its low of € 105.00 for the year. At the beginning of November, the publication of the Q3 results and the announcement of the planned strategic cooperation with the Busch Group SE led to a significant recovery of the share price. In the general weakness of the market at the end of the year (DAX on December 27, 2018 with the low for the year 2018), the Pfeiffer Vacuum share finished the year at a price of € 108.70.

Compared to the benchmark indices TecDAX, SDAX, DAX and HDAX, the Pfeiffer Vacuum share was 9 to 26 % lower for the full year. In the medium to long term, the Pfeiffer Vacuum share performs significantly better than the SDAX, DAX and HDAX.

SHARE PRICE DEVELOPMENT OF PFEIFFER VACUUM IN 2018



Dividend payment
Earnings

Feb. 16, 2018	Record sales in 2017 € 587 million
Mar. 7, 2018	Management Board and Supervisory Board decide on the € 150 million 3-year investment plan, dividend € 2.00
Mar. 21, 2018	Earnings 2017, sales plus 23.8 %
May 3, 2018	Q1 earnings, sales plus approx. 24.4 %
May 23, 2018	Annual General Meeting 2018
May 28, 2018	Dividend payment (2017)
Aug. 2, 2018	H1 earnings, sales plus 22.4 %
Nov. 5, 2018	Strategic coorperation with the Busch Group planned
Nov. 6, 2018	Q3 earnings, sales plus 14,1 %
Nov. 28, 2018	Capital Markets Day 2018

Pfeiffer Vacuum Technology AG:
Member of major international stock indices

SELECTED INDICES

Ticker	Name	Index weighting in %
TDXP	Deutsche Börse TecDAX Total Return Selection Index	0.73
SDYP	Deutsche Börse SDAX Performance Index (XETRA)	1.15
HDAX	Deutsche Börse AG HDAX Index	0.05
NMDP	Deutsche Börse Technology All Share Performance Index	0.97
BEUMCHD	Bloomberg Europe Machinery Diversified Index	1.03

The Pfeiffer Vacuum share is listed in numerous European and international indices. The average daily XETRA trading volume was 32,075 shares in 2018. With a weighting of 0.72 % in the TecDAX, since the index reform of Deutsche Börse in September 2018, the share has ranked 26th out of a total of 30 index values. Since the reorganization of the indices by Deutsche Börse in September 2018, the Pfeiffer Vacuum share is also listed in the SDAX. This increases the visibility especially for index-oriented investors. The listing in the TecDAX also shows the Pfeiffer Vacuum share in HDAX and other international indices. For example, in the MSCI World IMI Index, an index of more than 5,500 stocks from over 20 developed countries.

Dividend proposal of € 2.30 per share

Pfeiffer Vacuum closed the 2018 fiscal year with very good operating results and would like its shareholders to participate in this success. The Management Board and Supervisory Board will propose to the Annual Shareholders' Meeting on May 23, 2019, that a dividend in the amount of € 2.30 per share be distributed. This represents an increase of 15 % compared to the previous year (2018: € 2.00). If the Annual General Meeting agrees to this proposal, the dividend will be paid out on May 28, 2019. A total of € 22.7 million would then be distributed. This would represent a payout ratio of 33 % and a dividend yield of 2.1 %.

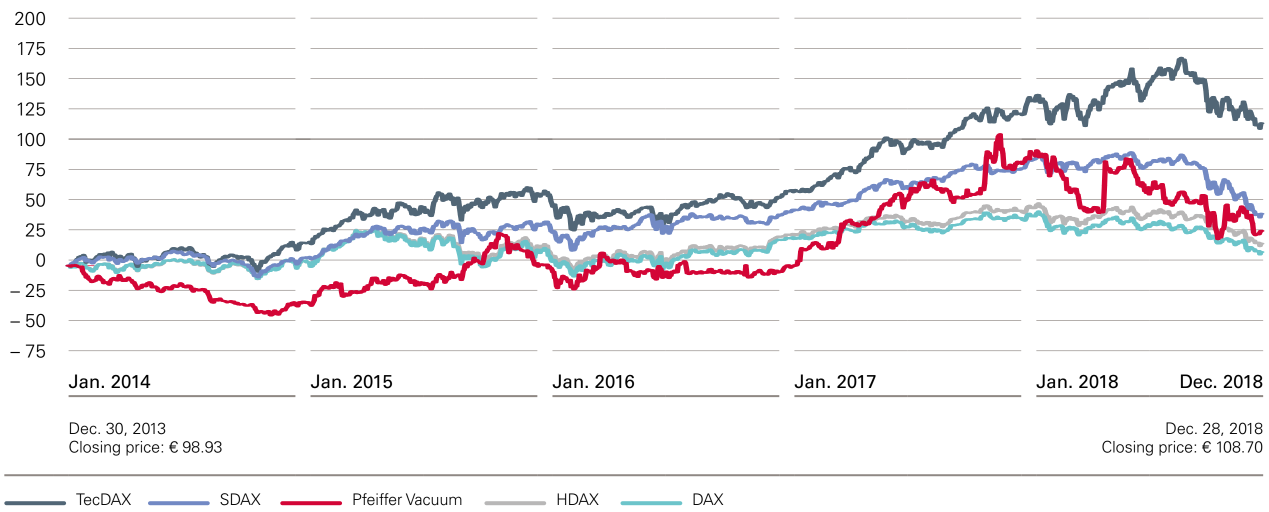
Broadly diversified investor structure and anchor investor with sector expertise

With Pangea GmbH, the family-owned investment company of the international vacuum group Busch SE, Pfeiffer Vacuum has a long-term oriented anchor shareholder.

Shareholders with other noteworthy shares are international fund companies such as Allianz Global Investors, Universal Investment, Deka, the State of Norway and Investmentaktiengesellschaft für langfristige Investoren TGV (TGV).

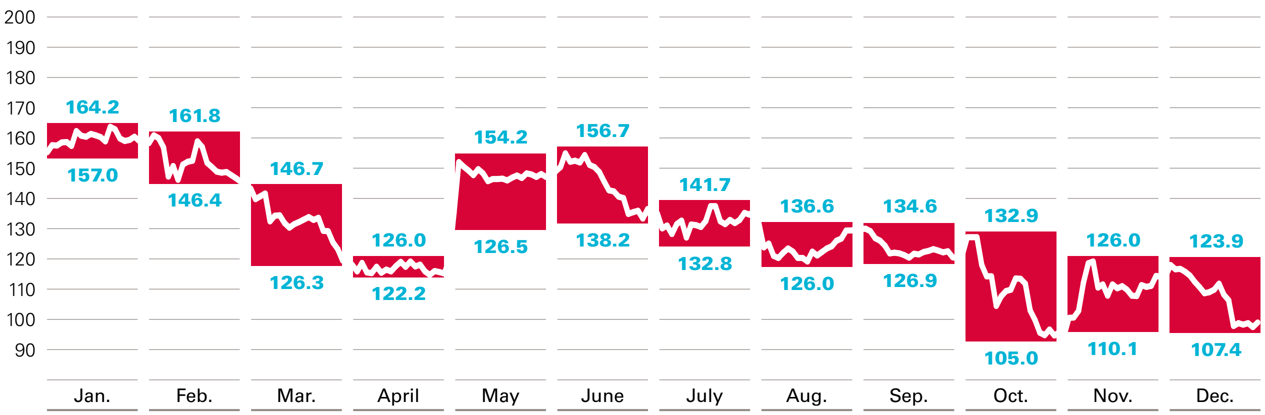
RELATIVE SHARE PRICE DEVELOPMENT OF PFEIFFER VACUUM, SDAX, TECDAX, DAX AND HDAX BETWEEN 2014 AND 2018

in %



MONTHLY HIGHS AND LOWS OF THE PFEIFFER VACUUM SHARE IN 2018

in €

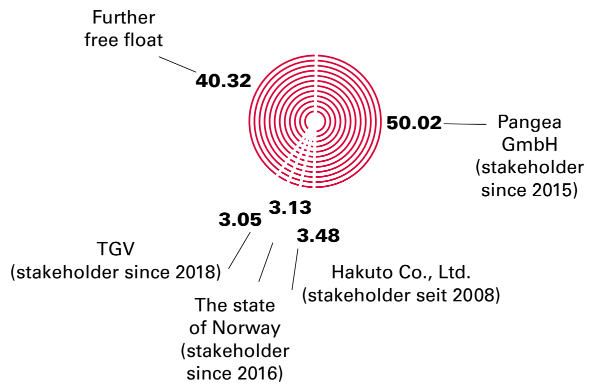


Dec. 29, 2017
Closing price: € 156.51

Dec. 28, 2018
Closing price: € 108.70

SHAREHOLDER STRUCTURE AS OF DEC. 31, 2018

in %



The multitude of institutional investors, including insurance companies, pension funds, investment advisors and family offices, ensure a structurally broad diversification.

Geographically, Germany and France form a solid core of European shareholders. Including the Nordic countries, Benelux, Italy, the U.K. and Switzerland, over 75 % of Pfeiffer Vacuum shares are held in the E.U. The shareholder base in the USA increased to more than 10 % compared to previous years. A gratifying effect with regard to the initial listing of Pfeiffer Vacuum shares on the NYSE in 1996. In Asia, Pfeiffer Vacuum has another long-term anchor shareholder and trading partner with Hakuto Co., Ltd., Japan.

Good analyst coverage: multipliers and opinion leaders

As a TecDAX and small cap value, Pfeiffer Vacuum regularly receives international and comprehensive support from more than ten analysts. Regular analyst studies are available to investors for informed opinion. Another number of well-known buy-side analysts from international fund companies and insurance companies analyze Pfeiffer Vacuum's financial results for their own investment opportunities. As well as publishing comprehensive sector studies, many analysts have in-depth knowledge of peer groups and Pfeiffer Vacuum customers. In addition to Pfeiffer Vacuum, four analyst firms alone follow not just Pfeiffer Vacuum but also at least one peer group company.

PFEIFFER VACUUM ANALYSTS

As of December 2018

Bank	Analyst	Rating	Peer group
HSBC	Philip Saliba	Hold	yes
Bankhaus Lampe	Dr. Karsten Iltgen	Hold	—
Pareto Securities	Cengiz Sen	Buy	yes
Commerzbank	Adrian Pehl	Buy	—
DZ Bank	Harald Schnitzer	Hold	—
Independent Research	Markus Friebel	Hold	—
Kepler Cheuvreux	Craig Abbott	Buy	yes
M.M. Warburg	Eggert Kuhls	Hold	—
Berenberg	Martin Comtesse	Hold	yes
Oddo BHF	Veysel Taze	Buy	—

Pfeiffer Vacuum is constantly available for its stakeholders and values an exchange of opinions and market assessments. We want to establish a sound pool of knowledge with our shareholders, investors and analysts and continue to develop it further through external and internal perspectives of markets, technologies and projects.

Comprehensive investor relations activities, member of the industry association DIRK [German Investor Relations Association]

Thanks to a broad range of investor relations activities, the stakeholders always receive open, transparent information about the development of Pfeiffer Vacuum. As a member of the German Investor Relations Association (DIRK), Pfeiffer Vacuum is committed to adhering to the standards for transparent communication with investors.

Conference calls with the CEO and CFO take place on a quarterly basis to explain business results. In dialogue with investors and analysts, the Management Board receives regular feedback on the Company's strategy and performance.

A long-term orientation and continuity are crucial success factors for sustainable, successful relationship management with stakeholders. All stakeholders take the center stage of any activity focused on their needs. Each quarter, the CEO and CFO have conversations with an average of 50 investors and analysts at roadshows, conferences, during phone calls, as well as corporate appointments in Asslar and Annecy.

The Annual General Meeting took place on May 23, 2018, in Wetzlar. A similar number of shareholders and guests as in the previous year had the opportunity to talk to the Management Board and the Supervisory Board in person. Attendance amounted to 72.23 % compared to 67.40 % In the votes, a large majority of the shareholders agreed with the proposals of the management.

Ahead of the Annual General Meeting, the shareholders were able to download all relevant documents, as well as the ballot sheet, from the broad information offerings on the Internet at ↗ ANNUAL GENERAL MEETING.

On November 28, 2018, Pfeiffer Vacuum invited more than 30 analysts and institutional investors to the capital markets day at Klassikstadt in Frankfurt. The atmosphere of the venue combined tradition and innovation – a perfect setting to spend a day discussing Pfeiffer Vacuum's new strategy, investment program and global organizational structure, and to share a common vision of the Company's future.

PFEIFFER VACUUM SHARE DATA

		2018	2017	2016	2015	2014
Share capital	in € millions	25.3	25.3	25.3	25.3	25.3
Number of shares issued	in units	9,867,659	9,867,659	9,867,659	9,867,659	9,867,659
Highest trading price	in €	164.20	174.50	103.45	115.60	102.05
Lowest trading price	in €	105.00	87.80	75.28	65.69	56.21
Trading price at year-end	in €	108.70	156.15	88.82	93.55	68.60
Market capitalization at year-end	in € millions	1,072.62	1,540.84	876	923	677
Dividend per share[1]	in €	2.30	2.00	3.60	3.20	2.65
Dividend yield[1]	in %	2.1	1.3	4.1	3.4	3.9
Earnings per share	in €	6.98	5.46	4.77	4.25	3.29
Price/earnings ratio		15.6	28.6	18.6	22.0	20.9
Free float[2]	in %	49.98	61.04	72.81	72.81	100.0

[1] Subject to the approval of the Supervisory Board and the Annual General Meeting
[2] According to the definition of Deutsche Börse

II

GROUP MANAGEMENT REPORT

THE YEAR 2018 AT A GLANCE

The Pfeiffer Vacuum Group continued its growth course during the past fiscal year. The more than satisfactory development led to new record figures – both for sales and for the operating profit. The key performance indicators were thus in line with our expectations for 2018.

This applies in particular for **sales**, which reached a new record level: Compared to the previous year, sales increased again noticeably by 12.4% to € 659.7 million. This result was at the upper end of the forecast corridor, which provided for a sales volume of € 640 to € 660 million.

SALES
in € millions

As a result of the positive sales development and a disproportionately low increase in selling and administrative expenses, we achieved a pleasing operating profit of € 95.1 million. Following € 71.4 million in the previous year, this represents an increase of 33.3 %. Accordingly, we achieved an **EBIT margin** of 14.4 %, which was some 2.2 percentage points higher and was also in line with our expectations.

EBIT MARGIN
in %

With **net income** of € 68.9 million, we succeeded in setting another new record in the Company's history. This represents an increase of 27.9 % compared with the previous year.

NET INCOME
in € millions

Overall, these key financial figures for us have further improved noticeably as planned compared with the same period of the previous year.

Equity ratio increased to nearly 60 %

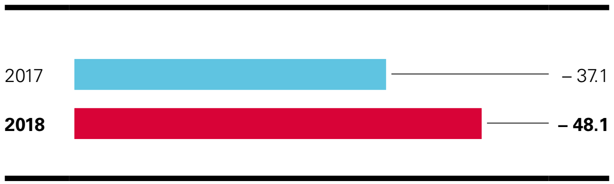
The balance sheet shows the Pfeiffer Vacuum Group's continued sound financial position. The equity base again improved over the previous year.

Equity grew by € 51.3 million from € 320.9 million at the end of 2017 to € 372.2 million on December 31, 2018. The **equity ratio** rose accordingly from 58.0 % to 59.6 % at the end of the reporting period. **Financial liabilities** amounted to € 60.3 million on the reporting date of December 31, 2018 SEE NOTE 23 and SEE NOTE 30. This corresponded to only about 10.0 % of the balance sheet total and was offset by cash and cash equivalents of € 108.4 million, which means that the Group continues to be debt-free on a net basis.

The **operating cash flow** declined from € 71.4 million in the previous year to € 62.5 million in the year under review despite the significant improvement in the operating profit. This was due in particular to the growth in inventories and trade accounts receivable in line with business development. With the inventory level, we have created the prerequisites for short lead times and fast reaction times to the needs of our customers.

Overall, the key balance sheet figures for us also developed very positively compared with the previous year's reporting date.

NET DEBT
in € millions



TOTAL EQUITY
in € millions

OPERATING CASH FLOW
in € millions

Investment program initiated with a volume of € 150 million

In March 2018, we approved an **investment program** with a volume of € 150 million, which is to be used primarily for the expansion and modernization of production capacities over the next three years. Funds will also be made available for research and development and IT to improve operational efficiency and achieve digital transformation.

As part of our ongoing investments, we opened a **new production site** in Cluj, Romania, at the end of September 2018. With 320,000 inhabitants, Romania's second largest city offers excellent working conditions. In addition to components for vacuum pumps, highly efficient processes also run on the 4,300 square meter production area. Besides to the new plant in Romania, capacity was also expanded at the production sites in Asslar (Germany), Annecy (France), and Ho Chi Minh City (Vietnam). In addition, a new office building was opened on October 25, 2018 in Nashua, USA, in the state of New Hampshire. Since then, the North American headquarters for administration, sales, product management, marketing and customer support is located on an area of around 2,500 square meters. The existing building, that was freed up as a result, now houses all service activities and repairs for a major part of Pfeiffer Vacuum's product portfolio.

Numerous **new products** came onto the market during the past financial year: On the occasion of the ACHEMA trade fair in June, various vacuum solutions for the chemical industry were presented, including Roots pumps from the OktaLine ATEX series or the ASM 390 leak detector, which can be used both in serial production and also for maintenance work. In October, Pascal 2021 HW, a two-stage rotary vane pump with the highest steam capacity in its class, was also presented.

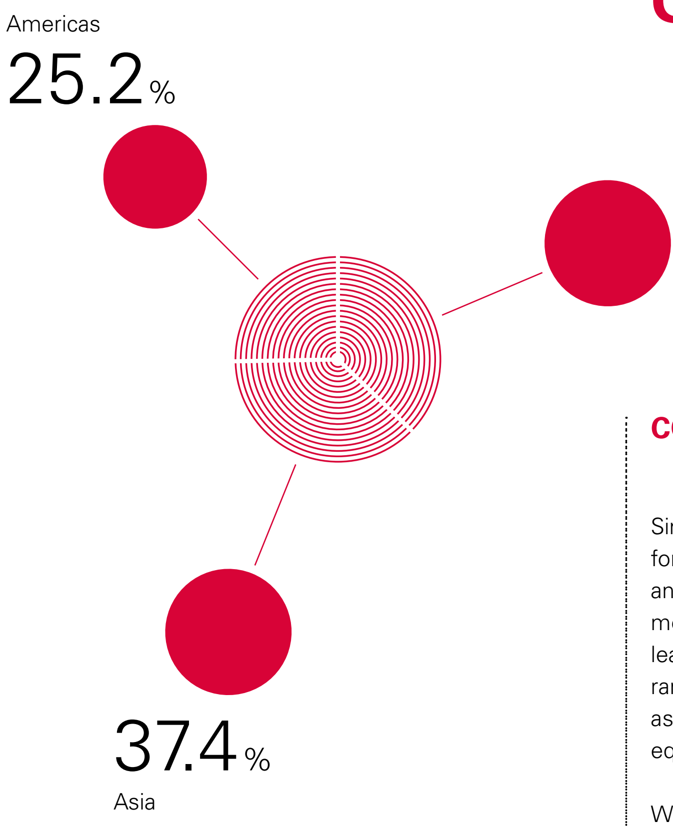
Further growth and significant improvement in operating profit margin planned

Our **growth strategy** envisages average organic sales growth in the high single-digit percentage range per year. At the same time, the EBIT margin is expected to rise to more than 20 percent in the medium term. Pfeiffer Vacuum's strategy is thus clearly focused on further growth. In addition to developing new products, this also includes expanding the Company's global presence. The focus is on selected Asian countries, above all China, which is growing strongly.

We are currently negotiating a **strategic cooperation** with the Busch Group in order to improve our competitive position in the vacuum technology industry. Busch SE, Maulburg, Germany, is the parent company of the Busch Group and holds a majority interest in Pfeiffer Vacuum through a subsidiary and has a complementary product portfolio of vacuum pumps and solutions for the rough vacuum market. This cooperation could lead to cost advantages in various areas of the Company.

In order to implement the growth strategy as rapidly as possible, the Management Board was reshaped and the functions reorganized as of January 1, 2019 (see also the explanations in the section "Corporate Governance Report"). A new position of Chief Operations Officer (COO) was created, with responsibility for the performance, efficiency and flexibility of the global operational infrastructure and processes. The position of COO was filled by an external consultant on an interim basis. At the same time, the search was initiated for a suitable candidate for permanent appointment to this position.

SALES BY REGION



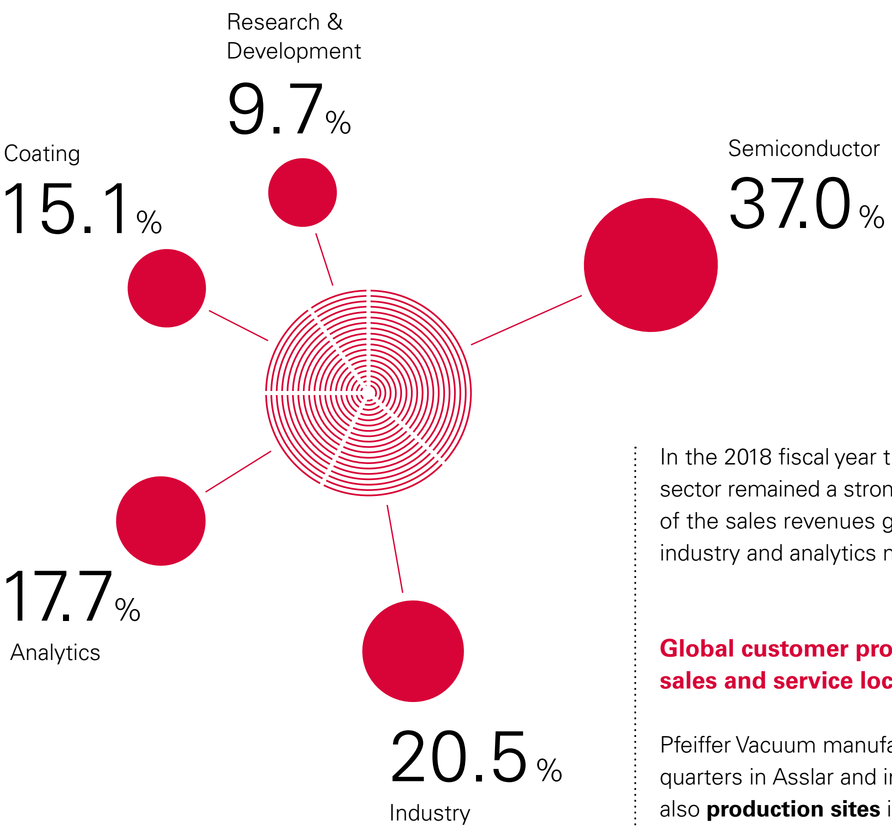
THE PFEIFFER VACUUM GROUP

CORPORATE PROFILE

Since 1890 and thus for more than 125 years, we have stood for innovative vacuum technology, superior quality products and first-class service. Since the invention of the turbopump more than 50 years ago, we have been one of the world's leading suppliers of vacuum solutions. Our product portfolio ranges from hybrid and magnetically levitated turbopumps, as well as backing pumps and measurement and analysis equipment, right up to complex vacuum systems.

We manufacture our high-tech products at eight locations in Europe, Asia and North America. The Group currently has 20 sales and service companies. With their expertise and commitment, our employees meet the requirements of our customers from a wide variety of industries and our sales markets in analytics, industry, research and development, coating and semiconductors.

SALES BY MARKET



In the 2018 fiscal year that has ended, the semiconductor sector remained a strong market for Pfeiffer Vacuum in terms of the sales revenues generated. This was followed by the industry and analytics markets.

Global customer proximity with manufacturing, sales and service locations worldwide

Pfeiffer Vacuum manufactures in Germany, both at its Headquarters in Asslar and in Göttingen. Within Europe, there are also **production sites** in Annecy, France, and Cluj, Romania. In Asia, we are represented by our Asan production site in the Republic of Korea and in Ho Chi Minh City in Vietnam. In the USA, there are production sites in Indianapolis and Yreka. We added the production sites in Vietnam and the USA through acquisitions.

In addition, we are present with **sales and service branches** at more than 20 locations around the globe.

Globally, 3,204 employees (December 31, 2018) are engaged in taking Pfeiffer Vacuum one step forward each day.

Markets and market position

Strong market position in the relevant markets

Products from Pfeiffer Vacuum are employed in numerous branches of industry. Over 14,000 customers trust in the reliability of our products. In terms of the overarching industrial sector, Pfeiffer Vacuum divides these customers into the following markets: semiconductor, industry, analytics, research & development (R&D) and coating. It is not possible to conclusively determine Pfeiffer Vacuum's position in these markets as there is insufficient data available on the size of the overall market and the various market segments. Based on surveys conducted by the Mechanical Engineering Industry Association (VDMA) and the International Statistics on Vacuum Technology (ISVT), as well as our own estimates, we expect to take the leading market position in the analytics and research & development market segments. In addition, our internal analyses show that we also achieve excellent market penetration and a top ranking in the industry, coating and semiconductor market segments in the fields we serve.

LOCATIONS AND WORKFORCE WORLDWIDE

THE AMERICAS

399
Employees

165.9
Sales in € millions

EUROPE AND AFRICA

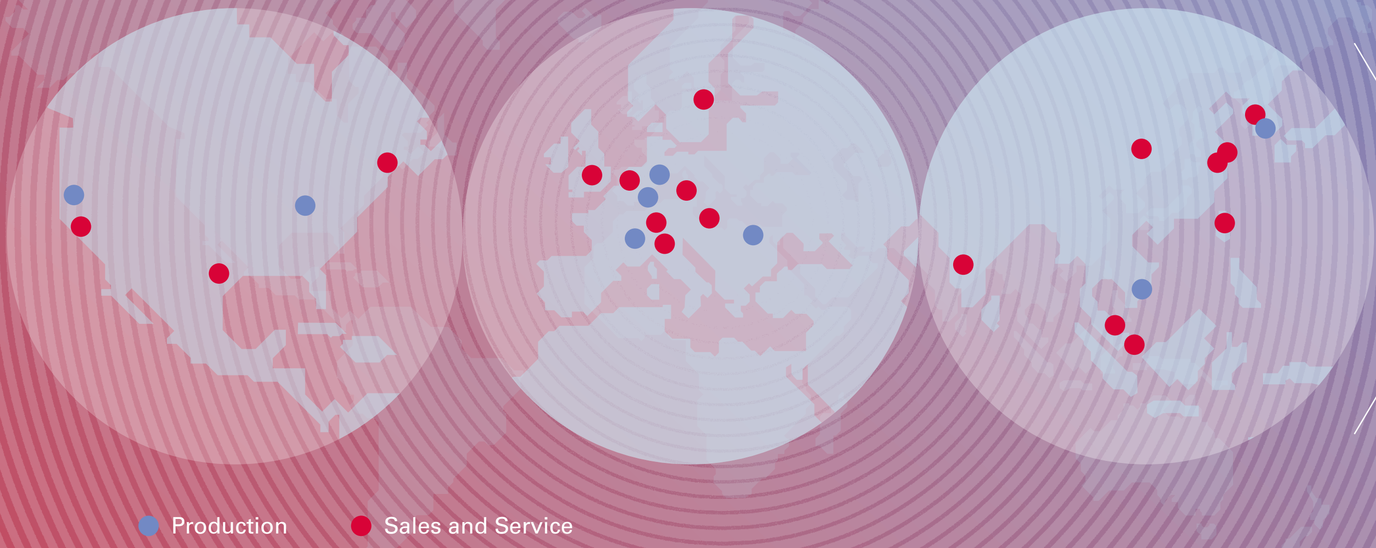
1,968
Employees

247.0
Sales in € millions

ASIA

837
Employees

246.6
Sales in € millions



TOTAL

3,204
Employees

659.7
Sales in € millions (incl. € 0.2 millions Rest of World)

Pfeiffer Vacuum's products and solutions are used in key markets of the future. Already today, many innovative processes, such as in nanotechnology, in the manufacture of LEDs or in research, are inconceivable without the use of vacuum technology. Technological progress resulting from research and development activities in these fields of technology leads to innovative products and manufacturing processes. The dynamic development of people's private and professional communication behavior is leading to ever new applications based on new technologies in the semiconductor industry. The increasing demand for energy combined with the need to conserve resources is changing the way energy is generated. These trends, as well as other social and industrial trends, offer Pfeiffer Vacuum additional sales opportunities. One of our strengths is that we serve all markets and are therefore largely independent of developments in individual market segments.

APPLICATION EXAMPLES

Semiconductor	Industry	Analytics	R & D	Coating
Lithography	General applications	Mass spectrometers	Renewable energies	Solar cell technology
Metrology	Electron beam welding	Electron microscopy	Nanotechnology	Display coating (LED, OLED)
CVD (Chemical Vapor Deposition)	Freeze drying	Surface analysis	Particle accelerators	Data storage
PVD (Physical Vapor Deposition)	Vacuum drying	Gas analysis	Space simulation	Glass coating
Etching	Steel degassing	Biotechnology	Plasma physics	Surface protection
Ion implanter	Leak detection	Life science	Materials science	Tool coating

Broad range of applications for future technologies

Semiconductor

Our vacuum pumps are used in the semiconductor industry for the production of microprocessors and handling systems. Customers primarily use a large number of medium and large backing pumps, but also turbopumps and measurement instruments. With our decontamination systems, chip manufacturers can significantly increase their yield. A key growth driver in the semiconductor industry is the rapid development of communications technology. New applications for vacuum technology are arising in areas such as nanotechnology. Our semiconductor customers are mainly located in Asia, the USA and, to a lesser extent, Europe.

Industry

In this segment, we unite a heterogeneous group of industrial customers who require our vacuum solutions for certain stages of production. Industrial trends such as quality improvements, energy saving and generation, mobility or environmental protection are opening up new fields of application. Examples of applications include metallurgy, tube production and air-conditioning and refrigeration technology. A further field of application is the still young solar thermal technology. The absorber tubes need for this technology are evacuated using our pumping stations and are continuously tested for leaks with our leak detectors. Our customers in the "Industry" segment come primarily from Europe, the USA and, increasingly, also from Asia.

Analytics

Our largest customers in this market are OEM (original equipment manufacturer) customers, i.e. suppliers of industrial systems or analytical instruments. Complex analytical devices such as scanning electron microscopes are primarily used for industrial quality assurance. This sector is characterized in particular by megatrends in the fields of life science, biotechnology and security. Ever smaller and lighter portable analyzers are needed in environmental technology, security technology or for doping analyses. The analytics industry therefore mostly demands small and medium-sized turbopumps, backing pumps and measurement instruments. Our most important customers for analytics products come from the USA, Japan, the United Kingdom and Germany.

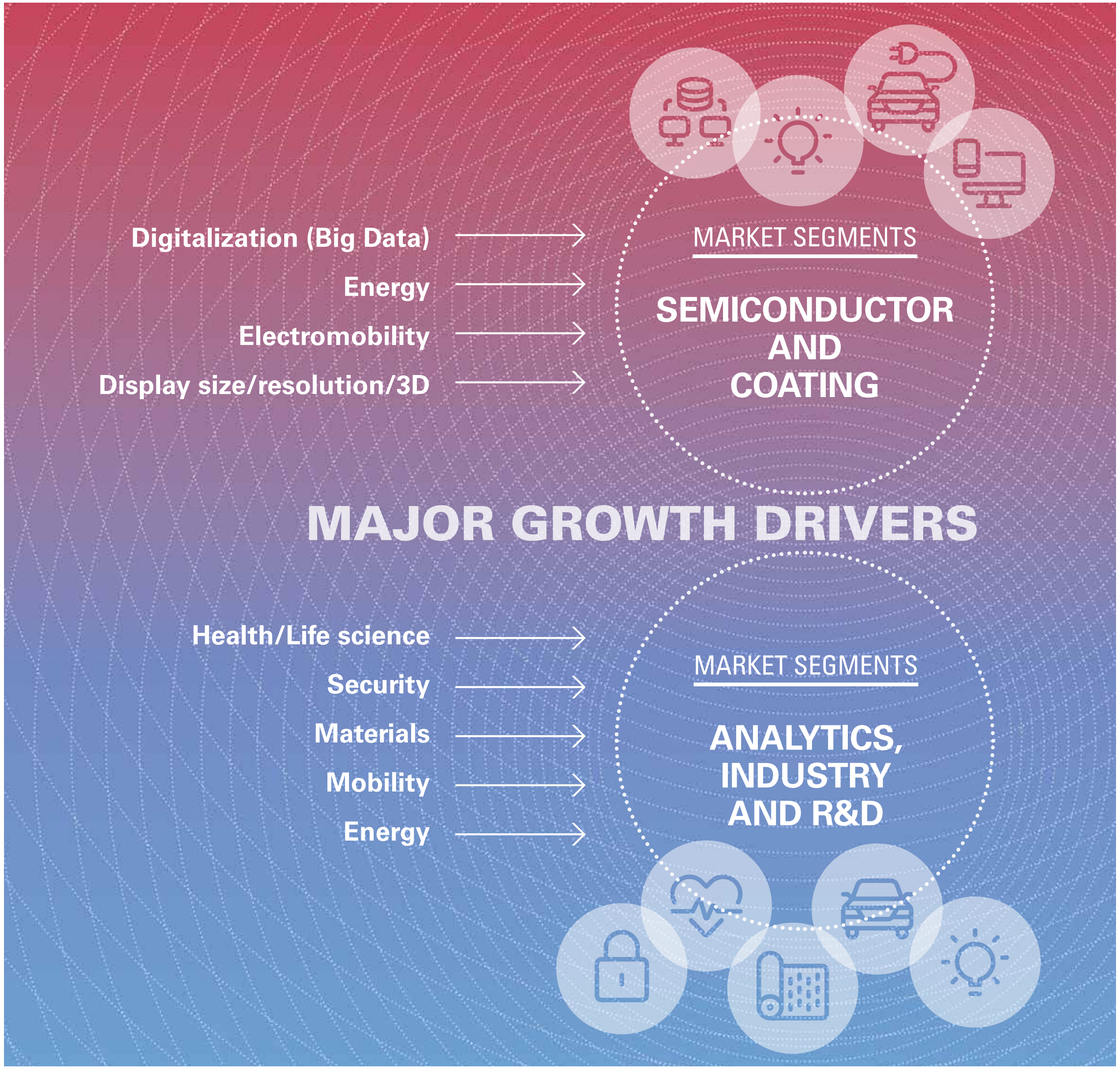
Research & Development

Cooperation with research institutes has a long tradition at Pfeiffer Vacuum. Whether physics or chemistry laboratories at universities, renowned research institutions such as the

Fraunhofer Institute and the Max Planck Institute or large multinational research institutions – they all rely on the quality and reliability of our mass spectrometers, leak detectors or vacuum solutions. In close cooperation with research institutions in Europe, the USA and Asia, new applications are constantly emerging, for example in the field of energy generation or healthcare technology.

Coating

Without vacuum, many things that are used in daily life could not be produced in the desired quality. The anti-reflective coatings on eyeglass lenses, the production of flat screens, the coating of Blu-ray discs or high-quality bathroom fittings, as well as solar cells or architectural glass are all produced in vacuum chambers, for example. High-quality tools are coated and hardened under vacuum to make them even more durable. Systems for generating renewable energy are among the megatrends that promise further growth. The coating industry mainly requires medium and large backing pumps and turbopumps, but also measurement equipment and complete vacuum systems. Customers who use our coating technology come from all industrial nations around the globe.



COMPANY STRATEGY

Innovation as the basis for growth: Market share shall rise to over 20 percent

Pfeiffer Vacuum develops, produces and markets high-quality and technologically sophisticated vacuum solutions. Reliability, durability and performance are attributes that our customers associate with all products from the Pfeiffer Vacuum Group. The Company sees itself as a quality market leader and has a long-term strategic goal to sell its products through quality, not price. This sales strategy also includes emphasizing the long-term cost advantages over the life of a Pfeiffer Vacuum product (the total cost of ownership) for customers. These advantages result, among other things, from lower maintenance and repair costs, longer service lives and lower energy consumption in comparison with rival products.

Pfeiffer Vacuum's mission statement remains to always be close to its customers. With a worldwide presence, we live up to this claim and ensure that our customers are always the focus of our actions.

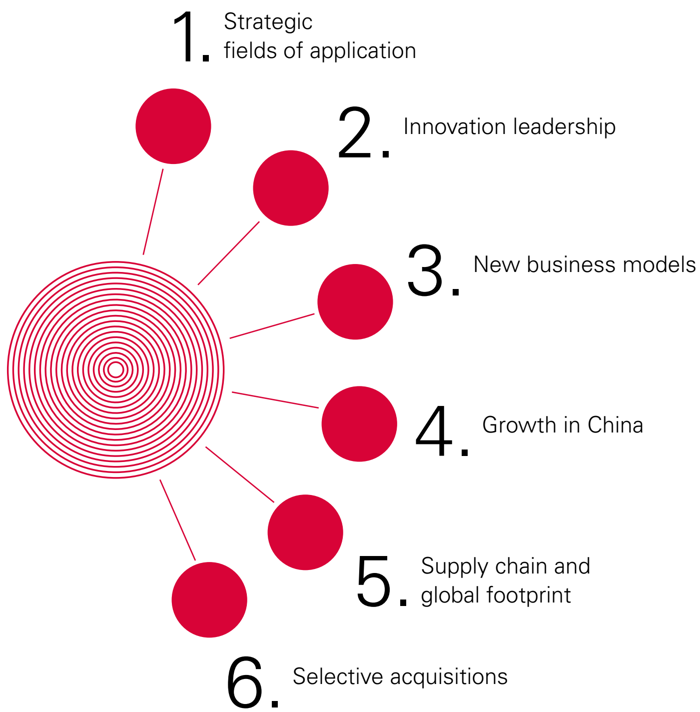
Pfeiffer Vacuum has set itself the goal of expanding its market share from currently around 13 percent to over 20 percent and significantly strengthening its position as number two in the global vacuum industry. The market position is to be strengthened on the basis of innovation leadership and growth with new products, new solutions and a broader range of services.

Pfeiffer Vacuum's strategy is clearly focused on further growth. In this context, the global presence of the Company is to be expanded. The focus is clearly on selected Asian countries, and particularly, above all, on China with its exceptionally high growth rates.

The Company's management is convinced that all market segments of Pfeiffer Vacuum – Semiconductor, Coating, Analytics, Industry and Research & Development – will benefit from the megatrends today and in the future. In the fields of semiconductors and coatings, these trends include digitization, the expansion of renewable energies, electro mobility

STRATEGIC FOCUS PFEIFFER VACUUM

Six elements characterize Pfeiffer Vacuum's growth strategy



and the ever larger high-resolution displays. The rapid developments in the life science industry, nanotechnology and the security industry offer additional growth opportunities for the market segments Analytics, Industry and Research & Development.

The various market segments of Pfeiffer Vacuum will benefit in particular from a number of megatrends.

Extensive growth investments in the next three years

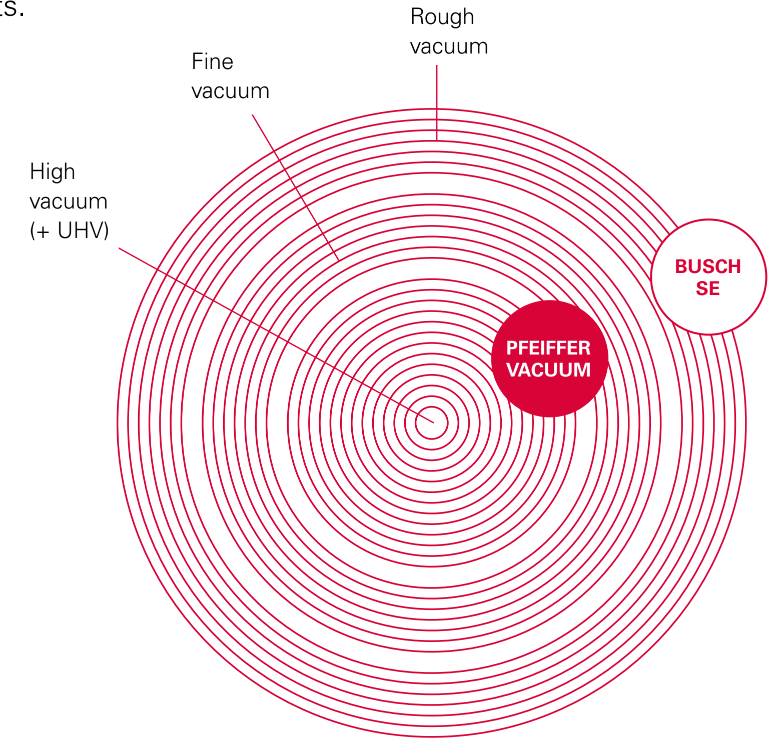
To further drive Pfeiffer Vacuum's dynamic development, the Management Board launched a € 150 million investment program for the next three years during the first quarter of 2018. The funds will be used for the expansion and modernization of production capacities. In addition, expenditure on new research and development and IT projects will be increased over the next three to five years. The primary goal is to improve operational efficiency and achieve digital transformation. The measures introduced are expected to increase the EBIT margin to over 20 percent in the medium term SEE OUTLOOK PAGE 74.

A complementary measure to improve the competitive position in the vacuum technology industry is the targeted strategic cooperation with the Busch Group. The Busch Group in Maulburg, Germany, holds a majority interest in Pfeiffer Vacuum through a subsidiary and has a complementary product portfolio of vacuum pumps and solutions for the rough vacuum market. The cooperation would enable both companies to leverage synergies in the central areas of purchasing, sales and services, IT and research and development.

Pfeiffer Vacuum and the Busch Group complement each other in terms of their market position.

POSITIONING/CLASSIFICATION PFEIFFER VACUUM AND BUSCH

Pfeiffer Vacuum and Busch have different target markets and a complementary product portfolio – a cooperation is thus a great opportunity to realize growth and gain access to new markets.



MANAGEMENT SYSTEM

Tight control through annual sales and profitability targets

The Management Board of Pfeiffer Vacuum Technology AG assumes responsibility for the strategic leadership of the Corporate Group.

All companies are managed by Group Headquarters in Asslar by setting annual sales and profitability targets (management by objectives). The Group companies were assigned to the "Semiconductor & Coating" or "Analytics & Industry" business units in accordance with the focus of their operations and the market potential. They are thus directly subordinated to the respective business unit, while their comprehensive regional responsibility for all market segments continues to apply as before. All subsidiaries in the Group therefore continue to have their self-directed management and essentially make their own decisions within central guidelines on how to attain the targets defined by Corporate Headquarters (sales, operating profit and operating profit margin as well as earnings before taxes). The supervisory bodies of the subsidiaries, including the members of the Management Board of Pfeiffer Vacuum Technology AG, the heads of the business units and the Headquarters in Asslar must be involved in major decisions.

Target achievement is attained through detailed target/actual comparisons and variance analyses as part of the monthly reporting system, which is supplemented by market information. This ensures that undesirable developments can be identified and corrected at an early stage. In addition, monthly conference calls and physical-presence conferences with the management of the operating subsidiaries ensure that all business development issues are discussed. In addition, face-to-face meetings are held by Group management with staff at the local site.

For countries in which Pfeiffer Vacuum is not represented directly through a subsidiary, sales targets are agreed with the local sales partner. Here, too, the achievement of sales targets is measured by target/actual comparisons. A further steering instrument is the variable remuneration of the local management and the sales staff of the foreign subsidiaries. This sensitizes employees to cost structures, and thus to the long-term success of the Company, even if they do not work in areas of the Company which have a direct influence on sales.

In order to implement the individual areas of the strategy outlined above and the associated goals more quickly and with greater focus, a new division of responsibilities within the Management Board was decided with effect from January 1, 2019. The Management Board and Supervisory Board have decided that the Company will be organized in future in accordance with its global business functions
SEE ALSO PAGE 78.

GROUP STRUCTURE

Pfeiffer Vacuum – global presence

As of December 31, 2018, the Pfeiffer Vacuum Group still comprised a total of 32 companies.

Central roles in the Corporate Group are assumed by Pfeiffer Vacuum GmbH, Asslar, Germany, and Pfeiffer Vacuum SAS, Annecy, France. Pfeiffer Vacuum GmbH is responsible for the development and production of all Pfeiffer Vacuum products, as well as for sales in Germany, and central investment management for the Group. This company had a total of 808 employees as of December 31, 2018 (December 31, 2017: 728). To a certain extent, Pfeiffer Vacuum SAS is the French counterpart to Pfeiffer Vacuum GmbH. The company employed 718 people at year-end (December 31, 2017: 667), is the central development and production facility for adixen products and is responsible for sales in France. With a total of 1,526 employees, these two companies employ almost half of the Group's workforce (3,204 at the end of 2018).

As further Group companies with their own production facilities, Pfeiffer Vacuum Components & Solutions GmbH, Pfeiffer Vacuum Semi Korea Ltd., Pfeiffer Vacuum Romania S.r.l., Nor-Cal Products, Inc. and Advanced Test Concepts, LLC., as well as Nor-Cal Products Viet Nam Co., Ltd., are entrusted with the manufacture and assembly of their own products.

The other Group companies are legally independent corporations that perform sales and service tasks. In legal terms, all companies are essentially organized in a legal form comparable to the German limited liability company (GmbH).

The complete structure of the Group as of December 31, 2018 is as follows:

THE PFEIFFER VACUUM CORPORATE GROUP AS OF DECEMBER 31, 2018

	Headquarters	Share (in %)
Pfeiffer Vacuum Technology AG	Germany	
Pfeiffer Vacuum GmbH	Germany	100.0
Pfeiffer Vacuum Austria GmbH	Austria	100.0
Pfeiffer Vacuum (Schweiz) AG	Switzerland	99.4
Pfeiffer Vacuum (Shanghai) Co., Ltd.	China	100.0
Pfeiffer Vacuum (India) Private Ltd.	India	27.0 [1]
Pfeiffer Vacuum Ltd.	Great Britain	100.0
Pfeiffer Vacuum Scandinavia AB	Sweden	100.0
Pfeiffer Vacuum Singapore Pte. Ltd.	Singapore	100.0
Pfeiffer Vacuum Taiwan Corporation Ltd.	Taiwan	100.0
Pfeiffer Vacuum Benelux B.V.	The Netherlands	100.0
Pfeiffer Vacuum (Xi'an) Co., Ltd.	China	100.0
Pfeiffer Vacuum Malaysia SDN. BHD.	Malaysia	100.0
Pfeiffer Vacuum Inc.	USA	100.0
Advanced Test Concepts, LLC.	USA	100.0
Nor-Cal Products Holdings, Inc.	USA	100.0
Nor-Cal Products, Inc.	USA	100.0
Nor-Cal Products Viet Nam Co., Ltd.	Vietnam	100.0
Nor-Cal Products Europe Ltd.	Great Britain	100.0
Nor-Cal Products Korea Co., Ltd.	Republic of Korea	100.0
Nor-Cal Products Asia Pacific Pte. Ltd.	Singapore	100.0
Pfeiffer Vacuum California Realty Holdings, LLC.	USA	100.0
Pfeiffer Vacuum Indiana Realty Holdings, LLC.	USA	100.0
Pfeiffer Vacuum New Hampshire Realty Holdings, LLC.	USA	100.0
Pfeiffer Vacuum Holding B.V.	The Netherlands	100.0
Pfeiffer Vacuum Italia S.p.A.	Italy	100.0
Pfeiffer Vacuum (India) Private Ltd.	India	73.0 [1]
Pfeiffer Vacuum Korea Ltd.	Republic of Korea	75.5 [1]
Pfeiffer Vacuum Components & Solutions GmbH	Germany	100.0
Pfeiffer Vacuum SAS	France	100.0
Pfeiffer Vacuum Romania S.r.l.	Romania	100.0
Pfeiffer Vacuum Semi Korea, Ltd.	Republic of Korea	100.0
Pfeiffer Vacuum Korea Ltd.	Republic of Korea	24.5 [1]
Dreebit GmbH	Germany	100.0

[1] Group shareholding in total 100.0%

RESEARCH AND DEVELOPMENT

Our claim: technological leadership

As a technology leader in the vacuum industry, our primary goal is to offer our customers innovative products and solutions with the highest process efficiency. Our innovative strength is the decisive key to our future business success. In addition to its own research and development (R&D) activities at three locations worldwide, Pfeiffer Vacuum works closely with customers and suppliers on projects to jointly advance new technologies to market maturity at an early stage. In addition, we have an established network with various national and international universities and research institutions.

The core topics of Pfeiffer Vacuum's R&D are derived from the needs of our customers, most of whom operate globally and in very different markets in some cases. They can be assigned to megatrends such as energy, healthcare and the environment, and frequently concern the fields Industry 4.0, the internet of things, digitization and predictive maintenance.

Important R&D projects in the 2018 fiscal year were aimed at supplementing the portfolio of missing product groups and renewing existing ones. In the OEM business, we were able to win new lines from important customers with our customer-specific pumps and increase the volume of existing lines.

Our claim to be a technology leader is supported by the fact that a good 10 % of our employees are active in engineering and engineering-related activities for us. Of these, again 214 employees could be assigned to R&D in 2018. As a result of its R&D activities, Pfeiffer Vacuum filed a total of 55 (previous year: 75) new patent applications in fiscal 2018.

In the 2018 fiscal year, research and development expenses amounted to € 28.7 million (previous year: € 27.8 million). The R&D ratio of 4.3 % was slightly below the previous year's level (4.7 %) due to the very good sales development SEE ALSO PAGE 57.

BUSINESS REPORT

OVERALL ECONOMIC AND INDUSTRY-SPECIFIC DEVELOPMENT

Overall economic development

Global economy losing some momentum

The global economy continued its upswing in 2018. However, growth was somewhat lower than in the previous year. According to the latest estimates of the International Monetary Fund (IMF), the global economy grew by 3.7 % in 2018, slightly below the level of the previous year (2017: 3.8 %). For the emerging and developing countries, the IMF expects the economy to grow by 4.6 % (previous year: 4.7 %). With regard to the industrial nations, the experts assume that the year 2018 will end with an increase in the gross domestic product of 2.3 % (previous year: 2.4 %).

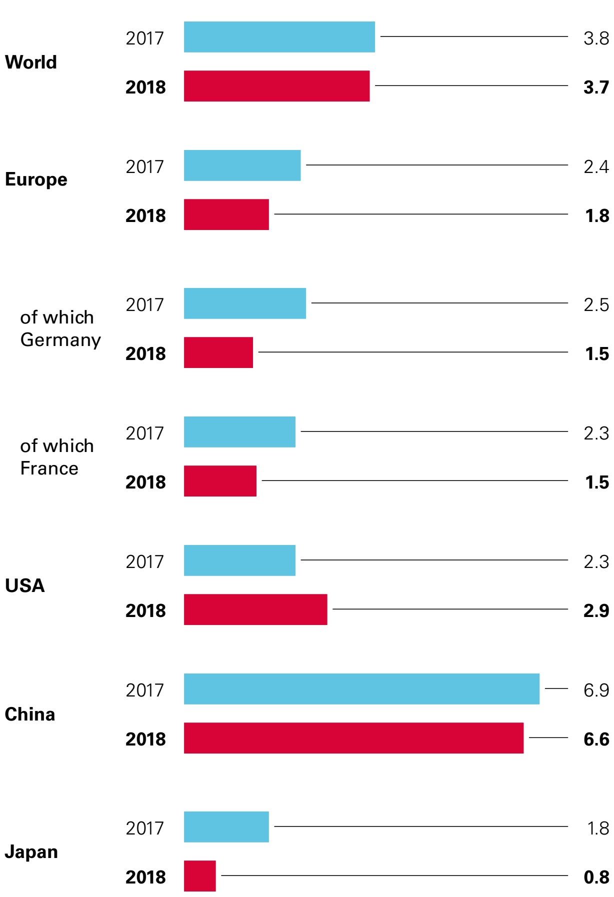
Europe

In view of weaker developments in some eurozone countries during the second half of 2018, the IMF has revised its original forecasts for the past year downwards. Overall, economic output in Europe rose by 1.8 % (2017: 2.4 %).

In the two largest economies of the eurozone, Germany and France, gross domestic product (GDP) increased in each case by 1.5 % (2017: 2.5 % and 2.3 %, respectively). In Italy and Spain, GDP rose by 1.0 % (2017: 1.6 %) and 2.5 % (2017: 3.0 %), respectively. In Germany, declining private consumption, lower industrial production – above all in the automotive industry – and lower external demand were among the factors responsible for the weaker development. Italy was burdened by low domestic demand and high credit costs. France's positive development was overshadowed by the street protests that had been going on for months and the uncertainties in connection with an unregulated withdrawal of Britain from the European Union and led to the pessimistic assessment of the experts at the Monetary Fund.

GROSS DOMESTIC PRODUCT

(real change compared with previous year[1]) in %



[1] Data relating to the previous year may differ from the previous year's report due to statistical revisions.

USA

For the U.S. economy, the IMF expects economic output to rise by 2.9 % in 2018 – an increase of 0.6 % compared with 2017. The already prosperous economy has been given an additional boost by US President Donald Trump's tax reduction package with a volume of US dollar 1.5 trillion. In addition, the progressive dismantling of regulations has stimulated the willingness of companies to invest, thereby increasing investments by 7 % compared to the previous year. Household demand increased by around 3 %. In addition, the sharp rise in the price of oil up till the beginning of October has caused additional euphoria in the energy sector, which is important for the USA.

Asia

In 2018 the strained trade relations with the USA impaired the growth of China, the world's second-largest economy, which grew by 6.6 %, following 6.9 % in the previous year. Japan's economy is expected by the IMF to close 2018 with growth of 0.8 %. IMF experts believe that the Indian economy has considerable growth potential. For 2018, they expect growth of 7.3 % on the subcontinent.

Mechanical engineering and the vacuum industry – Consolidation at a high level

According to the Mechanical Engineering Industry Association (VDMA), Germany-wide production in the mechanical engineering sector in the first nine months of 2018 exceeded the previous year's level by 2.6 % on a price-adjusted basis. Whether the Association's growth forecast of 5.0 % for the year as a whole can still be achieved, however, is not yet certain. The reason for the somewhat weaker development lies in bottlenecks in technical capacities and materials as well as the existing shortage of labor.

However, order intake between the beginning of January and the end of November 2018 rose by 6.0 % compared with the above-average result of the prior-year period. This means that the order books of German mechanical engineering companies remain well filled. Figures for exports of machinery and equipment from Germany for the year as a whole were not available at the time this report was compiled. According to the industry association VDMA and the German Federal Statistical Office, during the first eleven months of 2018 they increased by a nominal 5.3 % compared with the same period of the previous year. The real increase amounted to 4.0 %. Deliveries to other European countries (5.7 %), China (10.5 %) and the USA (7.7 %) increased at an above-average rate. The positive development is likely to have continued over the year as a whole. According to the Federal Statistical Office, the number of people employed in German mechanical engineering rose by 3.7 % year-on-year to around 1,003,000 in November 2018.

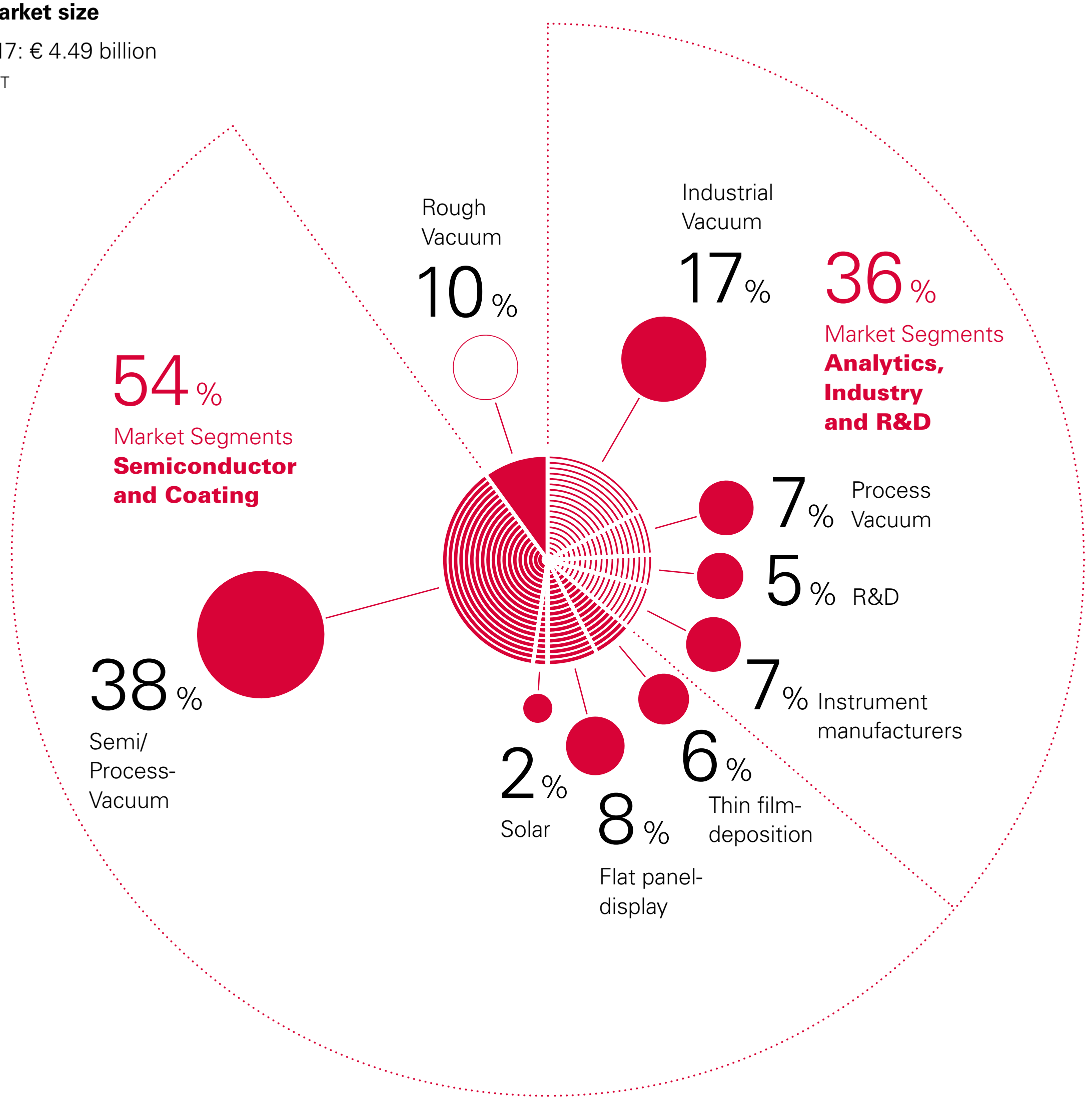
Vacuum technology is used in many branches of industry. Accordingly, the vacuum industry must also be seen against the background of the global economic development. The various market segments of the vacuum industry developed very differently. According to the German Electrical and Electronic Manufacturers' Association (ZVEI), the global semi-

THE VACUUM TECHNOLOGY MARKET

Total market size

12M 2017: € 4.49 billion

Source: ISVT



conductor market will close 2018 with growth of around 15 % and sales of just under US dollar 474 billion. This was due in particular to the sustained high demand for data storage. The largest growth continues to come from Asia. With growth rates of around 8 % and 13 % respectively, the German and European semiconductor markets lagged behind the global market. As in the previous year, the coating and analytics market segments also recorded an overall pleasing development, while research & development and industry largely followed the general economic conditions.

COURSE OF BUSINESS

Against the backdrop of generally positive economic momentum, Pfeiffer Vacuum closed fiscal 2018 with outstanding results. As anticipated in last year's forecast, sales increased noticeably. In addition to the effects of the full consolidation of the companies acquired during 2017, organic growth was also achieved to a greater extent. As a result of a stronger than expected increase in demand towards the end of the fiscal year in particular, the concretization of this forecast with a sales volume of between € 640 and € 660 million, which we recently anticipated, at the lower end of the range, was also slightly exceeded with total sales of € 659.7 million.

As a result of the very pleasing sales development, earnings also developed very satisfactorily and the expected noticeable improvement in earnings was achieved. With an operating profit of € 95.1 million and a resulting operating profit margin, or EBIT margin, of 14.4 %, the margin forecast specified at the last Annual General Meeting with a range of 14 to 16 % was therefore also met. As a consequence of the unchanged interest rate level and the resulting largely constant financial results compared to the previous year, earnings before taxes also increased noticeably as expected. With the tax ratio rising as expected, net income of € 68.9 million was achieved in 2018 – a record level in the Company's history

A glance at the balance sheet of the Pfeiffer Vacuum Group reveals that Pfeiffer Vacuum's asset position remains fundamentally sound. The Group is debt-free on a net basis and has long reported a high equity ratio, which was further improved in 2018. The very good liquidity situation puts us in a position to take the necessary steps for the successful further development of the Group on our own. We intend to finance the three-year investment program with a total volume of € 150 million of cash flow from operating activities and still distribute a dividend to our shareholders. With a result of € 33.7 million, we have not quite reached the planned investment volume of € 40 million for 2018, mainly due to longer delivery times. Nevertheless, we are remaining committed to our overall planning, as these steps will set the course for a continued successful development in the coming years.

PROFITABILITY, FINANCIAL POSITION, AND LIQUIDITY

Profitability: Sales grew by 12.4% to € 659.7 million

With a sales volume of € 659.7 million in the fiscal year, we achieved an increase by € 72.7 million or 12.4 % from the already very high level of € 587.0 million in the previous year. This development is attributable both to organic growth – primarily in the areas of analytics and coatings- and to growth as a result of company acquisitions. The external growth is primarily due to the full inclusion of Nor-Cal, which was acquired in mid-2017, in the reporting year 2018, which had a positive effect of € 24.9 million on sales when viewed in isolation.

In the following, we explain the sales generated in 2018 by segment, region, product and market. With regard to the sales by segment, it should be noted that the registered office of the company that invoiced the sales is decisive for the allocation of sales. Therefore, the segment-related presentation shows the sales by subsidiaries. In contrast, sales by region include all sales in a specific region, regardless of which company of the Pfeiffer Vacuum Group invoiced the sales. Sales by segment and sales by region differ from each other to a greater or lesser extent. Sales in the Asia segment, for example, differ significantly from those in the Asia region, since the Asia segment contains only the direct sales of our Asian subsidiaries. In contrast, the Asia region also includes sales generated directly by our companies producing outside of Asia with Asian customers, for example, with customers in Japan or China. In terms of sales by segment, sales by the German company are significantly higher than sales in Germany by region due to direct deliveries to agencies or customers outside Germany. After completing the integration of the companies acquired in the previous year, the delineation of segments was specified in 2018. In order to ensure the comparability of presentation, the previous year's figures were adjusted accordingly.

Sales by segment

Germany

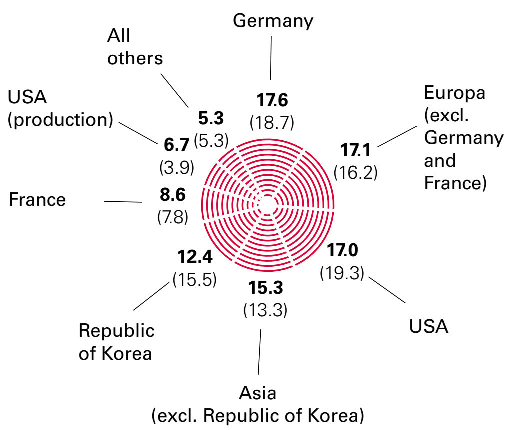
In the year under review, sales in the Germany segment improved significantly again after a very successful 2017. Significant impulses came from Pfeiffer Vacuum GmbH, which in addition to its sales in Germany, also substantially increased business in Japan in the year under review.

Europe (excluding Germany and France)

The basis for the growth in sales achieved in Europe (excluding Germany and France) is broad-based and all companies allocated here showed sales growth. It is important to note the development of the sales companies in Austria and England. Beyond the consequences of a potential negative development in the exchange rate of the pound sterling, we still do not see any negative impact on sales as a result of the U.K. leaving the EU.

SALES BY SEGMENT

in %, (previous year)



USA

After a very successful 2017, the sales achieved by our sales units in the USA in 2018 were only marginally below this high level. In order to increase transparency and due to the different risk structure, we have decided to differentiate between purely distributing and producing companies in the U.S. companies that were still shown aggregated in the previous year. The previous year's figures were adjusted accordingly.

Asia (excluding Republic of Korea)

The development in the Asia segment (excluding Republic of Korea) continues to be characterized by our local sales unit in China, which developed very well in the year under review. Even if all market segments showed growth here, higher momentum in the coating industry must be mentioned here as a major driver. In addition, sales growth in Asia is not limited locally and all sales entities recorded encouraging growth.

SALES BY SEGMENT

	2018	2017	Change	
	in € millions	in € millions	in € millions	in %
Germany	116.0	110.0	6.0	5.4
Europe (excluding Germany and France)	112.8	95.1	17.7	18.7
USA	112.2	113.1	– 0.9	– 0.8
Asia (excluding Republic of Korea)	101.2	78.0	23.2	29.7
Republic of Korea	81.6	91.4	– 9.8	– 10.7
France	57.0	45.6	11.4	25.2
USA (production)	44.5	22.8	21.7	95.0
All others	34.4	31.0	3.4	10.9
Total	**659.7**	**587.0**	**72.7**	**12.4**

Republic of Korea

The production and sales companies listed in the South Korea segment generally have a strong focus on the semiconductor market. Although the semiconductor industry developed quite positively overall in the 2018 financial year, there was a decline here due to the customer structure in Korea.

France

With an increase of € 11.5 million, sales in France in 2018 also recorded a quite satisfactory development. In addition to the increase in demand in France itself, the foreign business, predominantly in China, which was conducted directly out of France, was a major factor.

USA (production)

Due to the full inclusion of Nor-Cal Products Inc., acquired in the previous year, for the first time in 2018, the development of this segment in 2018 mainly reflected inorganic growth. At the same time, the development here was also slightly negatively impacted by the exchange rate.

All others

Herein those Group companies are summarized which differ from the other segments due to the segment-related characteristics (such as economic conditions, range of functions, product portfolio, sales markets, distribution channels) and thus cannot be assigned to any other segment. Accordingly, this segment has a very heterogeneous composition. The increase of € 3.4 million is therefore characterized by a variety of different factors and largely follows the overall positive development of Pfeiffer Vacuum in the 2018 fiscal year.

Sales by Region: Disproportional growth in the Americas

Europe

In 2018, sales in Europe again developed very satisfactorily. Growth was recorded in all regions, with the development in the Netherlands and Austria being particularly noteworthy. Additionally, developments in the United Kingdom showed satisfactory growth rates, while only slight improvements were achieved in Sweden and Italy.

Asia

The stable growth path that the Asia region has been pursuing since 2014 continued in 2018. The regional focus changed slightly in 2018. The South Korean region, for example, recorded a slight decline in sales revenues. On the other hand, we achieved double-digit growth rates in all other countries, especially China. In addition to the semiconductor industry, customers from the coating market were also key to this development. Overall, Asia is practically on a par with Europe in terms of its share of total sales.

The Americas

With an increase of 15.4 %, this region recorded the strongest relative improvement in 2018. This was mainly due to the full inclusion of Nor-Cal, in particular, in 2018 since this

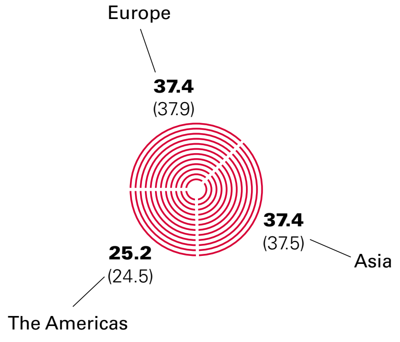
SALES BY REGION

	2018	2017	Change	
	in € millions	in € millions	in € millions	in %
Europe	247.0	222.5	24.5	11.0
Asia	246.6	220.3	26.3	11.9
The Americas	165.9	143.8	22.1	15.4
Rest of World	0.2	0.4	– 0.2	– 38.0
Total	**659.7**	**587.0**	**72.7**	**12.4**

unit was not acquired until mid-2017. The development of sales in the North and South America region continues to be influenced to a large extent by developments in the USA. In line with the sales development in the Americas, the share of total sales also rose slightly from 24.5 % in the previous year to 25.2 % in 2018.

SALES BY REGION

in %, (previous year)



Sales by Product: Growth trends remain intact

Instruments and components

With another very strong increase of € 33.1 million, the instruments and components product group recorded the largest increase in absolute terms in the past fiscal year. This was due in particular to the acquisition of Nor-Cal, which took full effect in the fiscal year. At the same time, however, we again recorded very pleasing organic growth in 2018 for the products of Pfeiffer Vacuum Components & Solutions GmbH and for leak detectors. With a significantly increased share of 29.4 % of total sales (previous year: 27.4 %), instruments and components developed into the strongest product group.

Turbopumps

The analytics market segment traditionally accounts for the largest share of turbopump sales and in 2018 recorded a renewed increase in demand and larges absolute growth. In relative terms, however, sales of turbopumps in the coating segment grew more strongly, particularly in China and the USA. Turbopumps continued to be a very important product group in 2018, accounting for 29.1 % of total sales (previous year: 29.5 %), even though this product group fell slightly below the sales volume of instruments and components.

Backing pumps

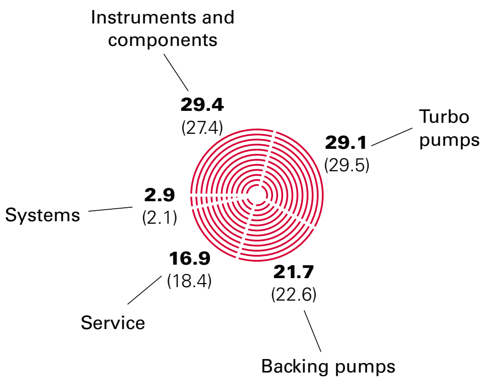
With a sales volume of € 143.4 million, backing pumps continue to contributed to the very balanced overall distribution of sales within the Pfeiffer Vacuum Group. After two good years, however, growth rates in 2018 were less dynamic, but at 8.0 % they are still at a high level. As in the previous year, the regional increase was mainly attributable to the Asian economic region. As a result of the overall disproportionately low increase compared to the development of sales, the share of total sales also declined slightly again from 22.6 % to 21.7 %.

SALES BY PRODUCT

	2018	2017	Change	
	in € millions	in € millions	in € millions	in %
Instruments and components	193.7	160.6	33.1	20.6
Turbopumps	192.1	173.4	18.7	10.8
Backing pumps	143.4	132.8	10.6	8.0
Service	111.6	107.8	3.8	3.5
Systems	18.9	12.4	6.5	52.7
Total	**659.7**	**587.0**	**72.7**	**12.4**

SALES BY PRODUCT

in %, (previous year)



Service

The installed basis of products from the Pfeiffer Vacuum Group creates a sound foundation for our service activities. The, in part, aggressive and corrosive process conditions under which the pumps are used, particularly in the semiconductor industry, make regular maintenance an absolute necessity. As is often the case in years with good business development in the area of product sales, the increase in service revenue in 2018 was also disproportionately lower than the development of sales revenue. While service revenues stagnated at a comparatively high level in many regions, this product group also recorded significant growth in China, resulting in an overall increase of 3.5 %.

Systems

Sales in this project-driven sector rose from € 12.4 million in the previous year to € 18.9 million in the past fiscal year and are mainly attributable to customers from the semiconductor industry.

Sales by Market: Largest growth momentum in the coatings market

Semiconductor

The semiconductor industry continued to develop dynamically throughout 2018, but recorded the weakening in growth rates expected in the second half of the year. Developments in this market in the past fiscal year were also positively influenced by the full inclusion of Nor-Cal. In regional terms, the increase was thus also influenced in particular by developments in the USA, but satisfactory growth was also recorded in Europe. Sales to semiconductor customers in Asia stagnated at a high level, with the aforementioned decline in the Republic of Korea largely offset by improvements in other Asian countries.

Industry

Our most heterogeneous market segment includes a broad spectrum of customers ranging from the automotive and metalworking industries to the food industry. In general, this market is developing largely in line with economic trends and showed a positive development in 2018 with growth of 4.8 %. Due to its heterogeneity, positive and negative trends balanced each other out extremely well, both in individual sectors and regionally.

Analytics

Building on a very good position with our analytical customers, we were again able to significantly increase sales in 2018. Regionally, this development was broadly based, but somewhat more pronounced in Europe than in the USA or in Asia.

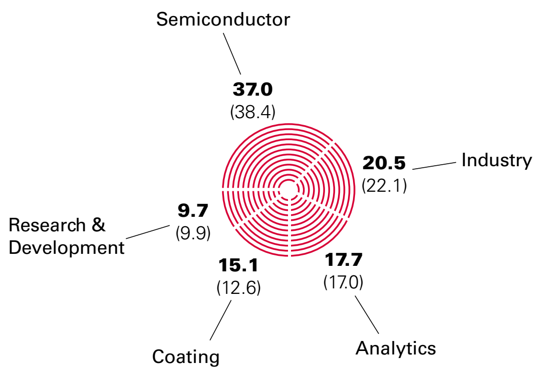
SALES BY MARKET

	2018	2017	Change	
	in € millions	in € millions	in € millions	in %
Semiconductor	243.9	225.4	18.5	8.2
Industry	135.3	129.1	6.2	4.8
Analytics	116.7	100.1	16.6	16.6
Coating	99.6	74.2	25.4	34.2
Research & Development	64.2	58.2	6.0	10.4
Total	**659.7**	**587.0**	**72.7**	**12.4**

Our customers in this sector use the entire product range, although there is a focus on turbopumps. The development of sales of turbopumps is therefore significantly influenced by this market segment.

SALES BY MARKET

in %, (previous year)



Coating

In both absolute and relative terms, the strongest growth was achieved in the coating market in 2018. The solar industry continued to be of great importance for the coating market in general. After Germany recorded very good development in the previous year, sales here declined in 2018. All other regions, on the other hand, performed very satisfactorily in this market segment. Sales in China almost doubled, and very high growth rates were also achieved in the USA.

Research & Development

At € 64.2 million, sales in the research & development market segment were € 6.0 million higher than in the previous year (€ 58.2 million). Due to the high number of state-owned and partly state-owned research institutes, this segment develops largely independently of economic influences. Also typical is the development within the fiscal year, with a somewhat more restrained start to the year and a stronger fourth quarter, which was also observed in 2018.

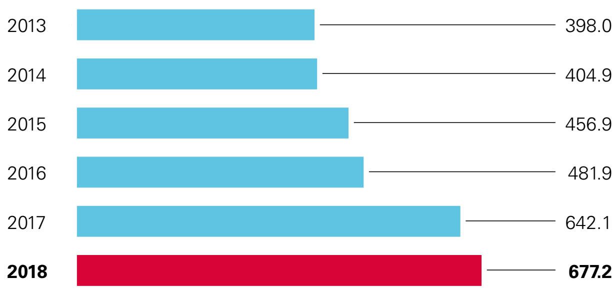
New orders and orders on hand: Book-to-bill ratio at excellent 1.03

After new orders of € 642.1 million in 2017, this figure rose to € 677.2 million in 2018. This corresponds to a significant increase of € 35.1 million or 5.5 %. Against the background of the previous year's value that was strongly influenced by the newly acquired companies, we were quite satisfied with this development in 2018, as growth was recorded in practically all product areas. In the course of the year, after a very strong first half-year, there was a slight easing off in summer, while the concluding fourth quarter again showed improved momentum. According to findings from the first weeks of 2019 so far, this trend is set to continue. The book-to-bill ratio, the ratio between new orders and sales, remained at a very good 1.03 in 2018 after a strong figure of 1.09 in the previous year that was also supported by acquisitions.

The order volume on hand as of December 31, 2018, amounted to € 144.9 million and was thus 13.7 % higher than the previous year's figure of € 127.4 million. As in earlier years, the visibility of orders on the basis of average sales in 2018 remains unchanged at about two months.

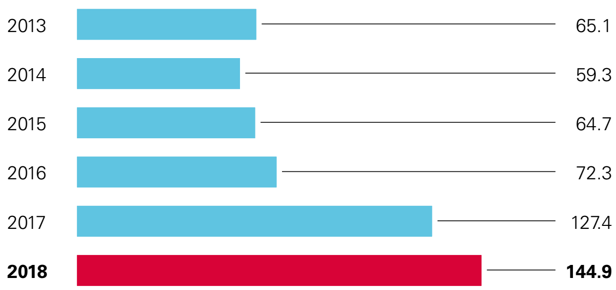
DEVELOPMENT OF ORDER INTAKE

in € millions



DEVELOPMENT OF ORDER BACKLOG

in € millions



Gross profit grows 12.0 % despite negative currency effects

After € 376.9 million in the previous year, the cost of sales in 2018 totaled € 424.5 million, corresponding to an increase of € 47.6 million or 12.6 %. This growth was largely attributable to the increase in sales, which made it possible to exploit economies of scale in 2018. However, the full inclusion of the newly acquired companies in the consolidated financial statements led to a relative increase in the cost of sales, in particular due to the PPA effects. The additional PPA effects included in the cost of sales in 2018 totaled € 3.1 million. Moreover, the change in the customer mix led to an additional increase in the cost of sales. Overall, however, these effects largely offset each other, resulting in only a marginal reduction in the gross margin – the ratio of gross profit to sales revenues. After 35.8 % in the previous year, this figure was currently 35.7 %.

In absolute terms, the gross profit of € 210.0 million in the previous year increased to € 235.2 million in 2018. This corresponds to an increase by € 25.2 million or 12.0 %. In addition to the effects referred to previously from the customer mix, economies of scale and PPA, the stronger euro during the course of the year also had a negative impact on the development of the gross profit and gross margin, as in the previous year.

GROSS PROFIT

in € millions

GROSS MARGIN

in %

Disproportionately low increase in selling and administrative expenses

After € 112.3 million, total selling and administrative expenses in 2018 amounted to € 117.5 million, which represents a slight increase by 4.6 % or € 5.2 million. While administrative and general costs in the previous year were influenced by one-off consultancy costs in connection with the takeover bids and the company acquisitions made, there was virtually no increase here in 2018, even taking into account the full inclusion of the newly acquired companies. Sales and marketing costs rose as a result of the increased business volume. However, the growth of sales and marketing costs was also disproportionally low compared to the increase in sales. All in all, it was possible to achieve positive economies of scale in this area, and the share of selling and administrative expenses in total sales fell from 19.1 % in the previous year to 17.8 % in fiscal 2018.

Research and development expenses remain at a high level

We are continuously committed to advancing the development of vacuum technology through our own research projects and by consistently fostering teaching and science. We view research and development expenses as an indispensable investment for the future. Accordingly, research and development expenses in 2018 were again higher than in the previous year. Following € 27.8 million in 2017, a total of € 28.7 million was expended here in 2018. Due to the excellent development of sales, the percentage share of research and development costs still amounted to a very strong 4.3 % (previous year: 4.7 %).

Adjusted for subsidies for expenses for research and development services included in other operating income in the amount of € 3.6 million (previous year: € 3.1 million), the net research and development expenses totaled € 25.1 million (previous year: € 24.7 million).

Other operating income and expenses

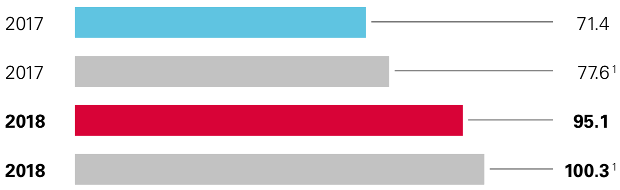
As in previous years, other operating income and other operating expenses SEE NOTE 9 principally included the Group's foreign exchange gains and losses. The other operating income of € 11.3 million (previous year: € 10.3 million) in addition contained subsidies for expenses of € 3.6 million (previous year: € 3.1 million) and miscellaneous income of € 2.3 million, principally resulting from gains on disposals (previous year: € 1.4 million). In 2018, the other operating expenses of € 5.2 million (previous year: € 8.9 million) also contained virtually only the foreign exchange losses recorded. After € – 3.0 million in the previous year, the net foreign exchange results in 2018 stood at € + 0.8 million.

Operating profit at € 95.1 million achieves new record level

Having already achieved the highest operating result in the Company's long history the previous year, the Company succeeded in increasing this figure again noticeably to € 95.1 million in 2018. After € 71.4 million in the previous year, this represents a very pleasing increase by € 23.7 million or 33.3%. Starting from record sales of € 659.7 million and with a constant gross margin, economies of scale in the selling and administrative expenses as well as an improved currency result contributed in particular to the development. The customer mix had a negative impact on earnings. The operating profit of € 95.1 million corresponded to an operating profit margin or EBIT margin of 14.4 % (previous year: 12.2 %). Adjusted for the additional PPA effects included in the operating profit amounting to € 5.2 million overall, the operating profit for 2018 would have amounted to € 100.3 million overall and resulted in an EBIT margin of 15.2 %.

OPERATING PROFIT

in € millions



[1] without PPA effects

EBIT MARGIN

in %

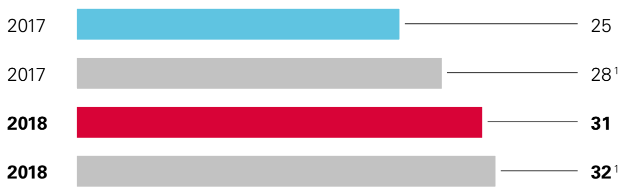
[1] without PPA effects

With regard to the segments it can be noticed that the large production sites in Germany and France accounted for 47.0 % and 16.7 % and thus the biggest portions of the total operating profit recorded in 2018 (previous year: 43.6 % and 19.4 %, respectively). Moreover, the use of scale economies led to increasing portions of operating profit in Asia (excluding Republic of Korea) and in the USA, where 12.1 % and 6.1 % were recorded (previous year: 7.9 % and 3.7 %, respectively).

With a portion of 9.7 % of the operating profit Europe (excluding Germany and France) remained at the previous year's high level (9.5%) while the decreasing sales in the Republic of Korea caused a decline in the percentage of the Group's operating profit from 15.6% to 6.3%. Despite the earnings development being burdened by PPA effects the segment USA (production) showed significant profitability increases.

OPERATING PROFIT PER EMPLOYEE

in K€



[1] without PPA effects

Considering depreciation and amortization (for tangible and intangible assets) included in operating profit, amounting to € 18.6 million (previous year: € 20.8 million), this resulted in an operating profit before depreciation and amortization (earnings before interest, taxes, depreciation and amortization, EBITDA) of € 113.7 million. After € 92.2 million in the previous year, this also represented a significant increase by € 21.5 million or 23.3%. The operating profit per employee also rose significantly from K€ 25 to K€ 31.

Financial income

As a consequence of persistently low interest rates, the financial income of € – 0.5 million was virtually at the level of the previous year (€ – 0.4 million) SEE NOTE 10. There were no significant changes in the composition of financial income and financial expenses.

Income taxes – tax ratio rose as expected

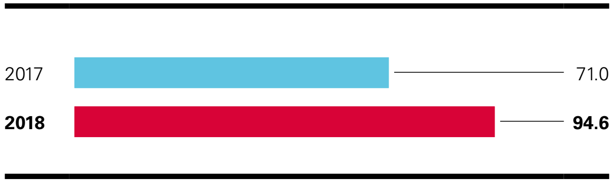
As expected, the tax ratio, which was very low in the previous year due to one-off effects in connection with the tax reform in the USA, rose in 2018 to 27.2 % (previous year: 24.2 %). As a result of the increased relative burden, but also of the significantly higher earnings before taxes in absolute terms, tax expenses rose significantly by € 8.5 million from € 17.2 million to € 25.7 million SEE NOTE 24.

Net income grew by 27.9 %

In a long series of consistently increased after-tax earnings, the € 68.9 million achieved in 2018 represents a provisional high and an increase by € 15.1 million or 27.9 % compared with 2017 (previous year: € 53.8 million). At the same time, the net return on sales, the ratio of net income to sales, rose from 9.2 % in the previous year to 10.4 % in 2018.

INCOME BEFORE TAXES

in € millions



NET INCOME

in € millions

Earnings per share improved significantly to € 6.98

Parallel to the net income, the earnings per share also improved significantly. Following the record value of € 5.46 in the previous year, a figure of € 6.98 was achieved in 2018. There were no changes in the number of shares outstanding SEE NOTE 35.

EARNINGS PER SHARE

in €

Financial position

Increased volume of business led to higher inventories and trade accounts receivable

In the development of the Pfeiffer Vacuum Group's financial position, two aspects in particular are to be emphasized. On the one hand, the strongly expanded business volume led to an increase in inventories by € 19.8 million SEE NOTE 15 and in trade receivables by € 12.1 million SEE NOTE 16 to a total of € 133.2 million and € 92.2 million respectively (previous year: € 113.4 million and € 80.1 million respectively). On the other hand, property, plant and equipment increased net by € 19.2 million to € 126.1 million (previous year: € 106.9 million) SEE NOTE 12 as a result of the investment program decided in spring 2018. Cash and cash equivalents increased from € 97.4 million at the end of fiscal 2017 to € 108.4 million on December 31, 2018. A detailed analysis of the development of cash and cash equivalents can be found in the section "Liquidity" below SEE PAGE 60.

Equity increased by € 51.3 million to € 372.2 million

On the liabilities side of the balance sheet, the most significant change compared with the previous year was in equity SEE NOTE 19. This increased by € 51.3 million from € 320.9 million to € 372.2 million. The increase was primarily due to the net income (€ 68.9 million) generated in the year under review and the dividend payment to the shareholders of Pfeiffer Vacuum Technology AG (€ 19.7 million) as well as the net increase of € 2.1 million in other equity components. The development of other equity components was mainly due to the effects of foreign exchange conversion and the valuation of pension provisions recorded directly in equity on the balance sheet date. The equity ratio rose from 58.0 % to 59.6 % as a result of the increase in the balance sheet total and a slightly disproportionate increase in equity. The Pfeiffer Vacuum Group has thus been able to further improve its already exceptionally high equity base. The existing financial liabilities SEE NOTE 23 are below average compared to the balance sheet total and do not limit the Group's financial flexibility. Due to the increase in the volume of business, that has been referred to a number of times, prepayments received/contract liabilities also increased significantly from € 7.7 million to € 16.7 million SEE NOTE 26 and SEE NOTE 27. Organic growth was also the main driver for the increase in net working capital by € 33.1 million to € 185.8 million.

Liquidity

After € 71.4 million in 2017, the operating cash flow in fiscal 2018 was recorded at € 62.5 million. This corresponded to a decline of € 8.9 million or 12.4 %. Although earnings before taxes rose significantly year-on-year (+ € 23.6 million), the increase in inventories and receivables also led to a significantly higher cash outflow. As a result of the very good earnings development, income tax payments increased significantly compared to the previous year. On the other hand, the increase in liabilities resulted in only a minimally higher inflow of funds. The cash flow per share fell from € 7.24 in 2017 to € 6.34 in the past fiscal year. The nevertheless unchanged high level of this indicator continues to represent the ability of the Pfeiffer Vacuum Group to generate disproportionately high cash inflows as part of its operating activities.

PFEIFFER VACUUM CONSOLIDATED BALANCE SHEETS (ABSTRACT)

	Dec. 31, 2018	Dec. 31, 2017	Change
	in € millions	in € millions	in € millions
Total non-current assets	**268.4**	245.1	23.3
Cash and cash equivalents	108.4	97.4	11.0
Other current assets	247.4	210.9	36.5
Total current assets	**355.8**	308.3	47.5
Total assets	**624.2**	553.4	70.8
Equity	**372.2**	320.9	51.3
Total current liabilities	**130.9**	114.3	16.6
Total non-current liabilities	**121.1**	118.2	2.9
Total liabilities	**252.0**	232.5	19.5
Total shareholders' equity and liabilities	**624.2**	553.4	70.8

CHANGE IN NET WORKING CAPITAL

	Dec. 31, 2018	Dec. 31, 2017	Change
	in € millions	in € millions	in € millions
Inventories	133.2	113.4	19.8
Trade accounts receivable	92.5	80.1	12.4
Trade accounts payable	– 39.9	– 40.8	0.9
Net working capital	**185.8**	152.7	33.1

CASH FLOW MARGIN

in %

CASH FLOW PER SHARE

in €

As a result of the investment program announced in the spring of 2018, which is to result in a total of € 150 million being invested in the Pfeiffer Vacuum Group in the coming years, capital expenditures in 2018 rose from € 27.7 million to € 33.7 million and were thus the key determinant of the cash outflow from investment activities in this period. Further details on the composition of the investment volume can be found in the section "Capital expenditures and financing" below SEE PAGE 62. Capital expenditure was offset by proceeds from the sale of property, plant and equipment amounting to € 2.2 million (previous year: € 0.2 million), resulting in an overall cash outflow from investment activities of € 31.5 million (previous year: € 102.0 million). In the previous year, net outflows amounting to € 74.6 million from company acquisitions were also recorded in this connection.

The dividend payment to the shareholders of Pfeiffer Vacuum Technology AG amounting to € 19.7 million (previous year: € 35.5 million) SEE NOTE 20 was virtually the sole factor for the cash flow from financing activities, which thus resulted in a total cash outflow of € 19.8 million. In the previous year, the incurrence of financial liabilities in the amount of € 70.0 million in connection with the company acquisitions and the repayment of financial liabilities amounting to € 15.2 million were further factors for cash flow from financing activities. In 2017, a total cash inflow of € 19.3 million was therefore recorded.

In 2018, the cash inflow after currency effects totaled € 11.0 million (previous year: cash outflow of € 12.6 million) and led to an 11.3% increase in cash and cash equivalents to € 108.4 million.

At the balance sheet date, Pfeiffer Vacuum also had unused credit lines amounting to € 13.9 million (previous year: € 13.6 million). Free liquidity is invested in interest-bearing financial instruments. A cash management system is in place in the Group companies in Asslar and Annecy to bundle liquidity. Conservative and largely short-term investment vehicles, such as money market or time deposits at financial institutions, dominate where financial investments are concerned. Speculative transactions are not conducted. Both liquidity management as well as steering of the interest-rate change risk are thus primarily handled at Corporate Headquarters, taking into consideration all relevant matters within the corporate Group SEE NOTE 34.

REPRESENTATION OF CASH FLOW FROM OPERATING ACTIVITIES (ABSTRACT)

	2018	2017
	in € millions	in € millions
Earnings before taxes	94.6	71.0
Income taxes paid	– 22.7	– 17.4
Depreciation/amortization	18.6	20.8
Other non-cash income and expenses	0.1	3.0
Effects of changes in assets and liabilities	– 28.1	– 6.0
Net cash provided by operating activities (operating cash flow)	**62.5**	71.4

Capital expenditures and financing: Strong capital base creates independence

As in previous years, the operating business, capital expenditure and dividend payment were financed solely by the Group's own funds. It is currently planned to finance the three-year, strategy-supporting investment plan approved by the Board of Management and the Supervisory Board, in the years 2018 to 2020 with a total volume of € 150 million, purely from internal funds. In the past, financial liabilities were only taken out to finance major acquisitions, which, at € 60.3 million as of the balance sheet date of December 31, 2018, were exactly at the previous year's level of € 60.3 million. Capital expenditure of € 33.7 million was attributable, among other things, to capacity expansions at the production sites in Asslar (Germany), Annecy (France), Cluj (Romania) and Ho Chi Minh City (Vietnam). In addition, necessary re-investments were made for machinery and plant and equipment. Although the investment volume of € 33.7 million was significantly higher than in the previous year (€ 27.7 million), the actually forecasted capital expenditures of € 40 million were not achieved due to long delivery times for additions and extensions to machinery, among other things. In connection with the three-year investment plan, we refer to the relevant comments in the Outlook.

Allocation of capital expenditures for tangible and intangible assets to the reported segments compared to the previous year is comprised as follows:

CAPITAL EXPENDITURES BY SEGMENT

	2018	2017
	in € millions	in € millions
France	8.0	8.9
Germany	7.3	4.3
USA	5.0	7.0
Asia (excluding Republic of Korea)	2.8	2.0
Republic of Korea	1.9	1.8
Europe (excluding Germany and France)	0.5	0.4
USA (Production)	0.3	0.2
All others	7.9	3.1
Total	**33.7**	27.7

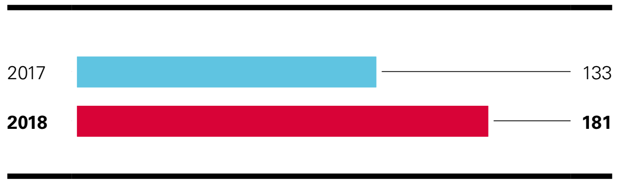
The balance sheet of the Pfeiffer Vacuum Group has long demonstrated a very sound equity base, which has again improved slightly compared to 2017. The equity ratio rose from 58.0 % at the end of the previous year to 59.6 % and remains above average for the mechanical engineering sector. The ratio of current assets to current liabilities amounted to 272 % (previous year: 261 %) and continued to reflect the further improved financing concept and high credit rating of Pfeiffer Vacuum. The increased capital expenditures of € 33.7 million and a slightly declining depreciation/amortization volume of € 18.6 million in 2018 resulted in a depreciation expense ratio (ratio of capital expenditure to depreciation/amortization) of 181 % compared to 133 % in the previous year.

CURRENT ASSETS RATIO

in %

DEPRECIATION EXPENSE RATIO

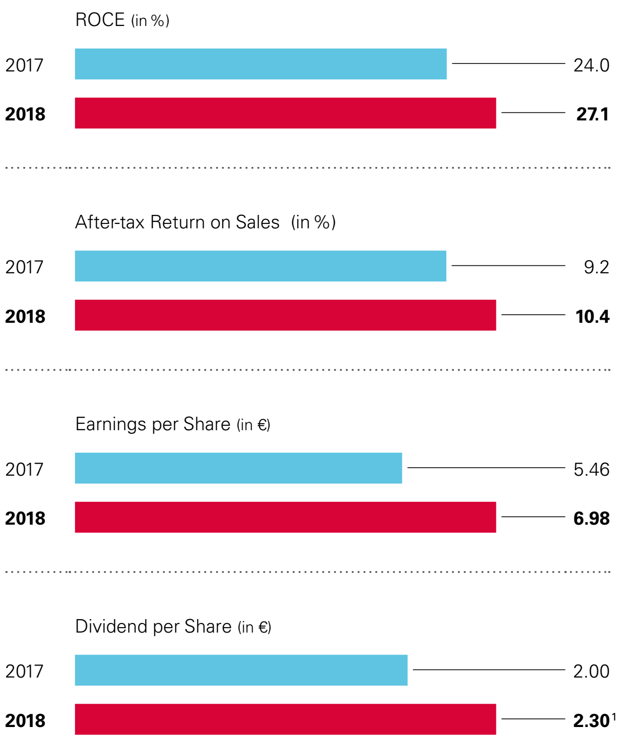
in %



Value Reporting: ROCE increases to 27.1 %

The concept of value-based steering of the Company remains an integral element of the management approach that exists within the Pfeiffer Vacuum Corporate Group. All important decisions at Pfeiffer Vacuum are taken with due consideration of all material financial aspects. The following diagram provides an overview of various financial performance indicators which are important for us. In addition to ROCE (Return On Capital Employed; operating profit relative to the total of fixed assets and working capital) as a parameter for the yield on capital employed, the Company's return on sales, earnings per share, and the paid or proposed dividend are also presented here. Due to the very good business development in 2018 all performance indicators named in this context showed significant improvements compared to the previous year. The Management Board would like to continue to let the shareholders participate in the Company' success. Accordingly, the dividend proposal provides for a dividend of € 2.30 per share. This would correspond to a payout ratio of 33.0 % (previous year: 36.6 %) and a 15 % increase in the dividend SEE OUTLOOK PAGE 74 and SEE NOTE 20.

KEY VALUE REPORTING INDICATORS



[1] Subject to approval by the Supervisory Board and the Annual General Meeting

NON-FINANCIAL PERFORMANCE INDICATORS

Employees

Pfeiffer Vacuum employed a total of 3,204 people at the end of 2018 SEE NOTE 39. This represents an increase of 8.8 % over the previous year's figure of 2,945 employees. This development can be observed in all regions in which Pfeiffer Vacuum operates and results from the expanded business activities as well as preparations for implementing the growth strategy.

COMPOSITION OF WORKFORCE BY REGIONS

	2018	in %	2017	in %
Europe	1,968	61	1,793	61
Asia	837	26	764	26
The Americas	399	13	388	13
Total	**3,204**	**100**	2,945	100

Diversity – Pluralism as a strategic goal of personnel recruitment

Pfeiffer Vacuum has a global standing and so unites a multitude of people of different origin under one umbrella brand. Our employees are proud of the successful cooperation between different cultures and nationalities. For several years now, Pfeiffer Vacuum has belonged to the "Diversity Charter", an initiative by the German Federal Government.

The "Diversity Charter" represents a fundamental commitment to fairness and appreciation of people in companies. Of the 3,204 employees, 558 are female and 2,646 are male. Therefore, the proportion of women constitutes 17.4 % of the entire workforce. Vacuum technology is a specific field of mechanical engineering in which there are generally only very few potential young females with adequate training. Nevertheless, it is the firm intention of company policy to increase the proportion of women in this traditionally male-dominated area of work. The French subsidiary of Pfeiffer Vacuum has concluded a formal agreement with all labor unions involved with the specific purpose of promoting women. The Supervisory Board of Pfeiffer Vacuum Technology AG has been under female chairmanship since October 2017. With the appointment of Ms. Nathalie Benedikt as Chief Financial Officer in 2017, the Management Board of Pfeiffer Vacuum has a female quota of 25 %. In its subsidiary companies, however, several management and key positions in the areas of Purchasing, Compliance, IT, Communications, Marketing, Human Resources as well as Sales are occupied by female managers.

Training: Pfeiffer Vacuum offers training in a variety of vocations

The promotion of young talent is of great importance at Pfeiffer Vacuum. At various locations, we offer company apprenticeships for industrial mechanics, in the business administration area, as well as in warehouse logistics. In fiscal 2018, Pfeiffer Vacuum made available a total of 96 apprenticeships worldwide (previous year: 113). In addition to the company apprenticeship, Pfeiffer Vacuum in Germany participates very successfully in the "Studium Plus" project, a dual degree program of the Technical University of Mittelhessen. Furthermore, a partnership exists with the Georg-August University Göttingen in relation to the company apprenticeships. In this way, we secure our young talent in industrial and mechanical engineering as well as in the area of business informatics. Also, many of our subsidiaries offer temporary internships for graduates and students and/or temporary positions for students who work during their vacation. This enables young people to gain an insight into operational processes and to qualify themselves as potential employees. In cooperation with different schools and universities, we perform guided tours of the Company and present ourselves to the public at career fairs. Mentoring of bachelor and master theses as well as our global trainee program complete our apprenticeship offerings. In France especially, several of our skilled workers give lectures on vacuum technology and corporate governance at universities. In addition, the name recognition that Pfeiffer Vacuum enjoys among natural science graduates due to the presence of its products in research laboratories is not to be underestimated.

Qualifications of skilled workers and executives

The success of Pfeiffer Vacuum is decisively based on the expertise, the loyalty, and the high motivation of our employees. The expert knowledge of our service and sales employees, in particular, plays an important role in cooperation with our customers. They benefit from the many years of experience which our experts can draw upon in relation to physical and chemical reactions of the most diverse molecules and substances under vacuum conditions.

Most projects are developed by our customers together with our Sales and Market teams which, in turn, also consult the relevant experts from the areas of Research & Development as well as Production and Service as necessary. The skilled knowledge of our employees is also of major importance in the manufacture and installation of our products. The ultimate goal is to offer our customers a perfect vacuum solution for their application.

PROFESSIONAL QUALIFICATIONS OF THE WORKFORCE

	2018
Development and Production, Total	**1,778**
Graduates of universities, colleges, and universities of applied sciences	405
Employees with professional training	945
Employees without professional training	363
Apprentices	65
Administration, Services and Sales, Total	**1,426**
Graduates of universities, colleges, and universities of applied sciences	796
Employees with professional training	503
Employees without professional training	96
Apprentices	31

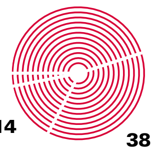
Good training and the readiness to adapt to changes in market forces by continuous development are thus the best prerequisites for all employees, regardless of age, in order to secure jobs and sustain professional success. Further training plays a critical role in our Company in all locations. New employees complete an introductory course in the basic principles of Vacuum Technology, while sales and service employees receive advanced training courses about products and service measures. Practical programs exist for the qualification of executives, and foremen and group leaders are trained in leadership and management techniques. Furthermore, the Company pays attention to specialized advanced training to transfer technical innovations to the Company. Chinese, German, English or French language courses are offered depending on location and need.

The provision of further training options is generally linked to the local conditions and requirements. For example, the French subsidiary fulfills the relevant statutory requirements with more than twice the expenditure than would be required by law. Here, the focus is on training and further training measures in the area of "quality". The management also operates a software system for competence management of the employees to better identify and implement existing expertise and to be able to match training courses specifically.

The topics of employee development, leadership and work-life balance will play an important strategic role in the coming years. Pfeiffer Vacuum adopted a global human resources strategy (HR strategy) for this purpose for the first time in 2018.

PROPORTIONAL DISTRIBUTION OF PROFESSIONAL QUALIFICATIONS OF ALL EMPLOYEES

in %



Remuneration and incentive schemes

The personnel costs in fiscal 2018 amounted to € 212.0 million compared with € 191.0 million in fiscal 2017 SEE NOTE 38. The incentive scheme of Pfeiffer Vacuum also differs according to local conditions and customs. The sales personnel basically receive performance-related incentives via a bonus scheme oriented to sales growth and profit. Added to that – depending on the location – are other bonus, incentive or employee participation schemes as well as bonuses for outstanding individual achievements.

AGE STRUCTURE OF THE WORKFORCE

	2018		2017	
		in %		in %
Under 30 years of age	604	19	549	19
30 to 50 years of age	1,687	53	1,620	55
Over 50 years of age	913	28	776	26
Total	**3,204**	**100**	2,945	100

Pension scheme

The pension scheme is similarly varied in the individual locations. Apart from a purely public scheme in France funded by the French subsidiary, the worldwide pension scheme includes additional measures and payments into pension funds, the offer of a pension plan and direct insurance with the additional option of deferred compensation SEE NOTE 25.

Social responsibility

We take our social responsibility towards our employees seriously. We therefore endeavor to ensure that the relevant quota of disabled employees in the various countries is met. We also believe that a family-friendly working environment is very important. Varying from region to region, this includes models for flexible working hours, provision of home office connections, models for re-entering the working world with flexible working hours and job sharing, specifically for young mothers and fathers.

The illness rates in Asslar and Göttingen amounted to 6.3 % and 10.1 %, respectively, compared to the average illness rate of 4.28 % in the statutory health insurance. In Annecy, the illness rate was significantly lower with 3.7 %. The rate of staff fluctuation also differed depending on the geographical location, with a figure of 4.5 % in Asslar in the past fiscal year, and thus slightly lower than in the previous year, and an increase to 6.7 % in Göttingen in the past fiscal year, following a figure of 3.8 % in 2017. In Annecy, the rate of staff fluctuation in the course of 2018 rose to 7.8 %, following a very low level in 2017.

Workplace safety

Issues of workplace safety mainly relate to the production facilities of Pfeiffer Vacuum. In Asslar, there were 15 reported accidents in fiscal 2018 (previous year: 13). This is equivalent to 18.6 accidents per 1,000 employees (previous year: 18.0). With 9 reportable accidents in Göttingen, the ratio amounted to 51.7 accidents per 1,000 employees compared to 31.8 in the prior year. These figures are in relation to the corresponding average of 18.1 for 2017 cited by the German Workers' Compensation Insurance Company (ETEM, figures for 2018 were not yet available). The corresponding ratio for France was 8.4 with 6 reportable accidents (previous year: 16.5).

Non-financial Group report

The Pfeiffer Vacuum Group is subject to EU Directive 2014/95/EU and/or the CSR (Corporate Social Responsibility) Directive Implementation Act of April 11, 2017 on strengthening non-financial reporting.

For the 2018 fiscal year, Pfeiffer Vacuum is thus again publishing a non-financial group report according to §315b, German Commercial Code (HGB), which will be available on ↗ NON-FINANCIAL REPORT 2018 from April 30, 2019 onwards.

RISK AND OPPORTUNITIES REPORT

The purpose of entrepreneurialism is to specifically utilize opportunities that have been identified in order to increase the value of the Company. However, this intrinsically involves taking risks. The opportunity and risk management system that we employ serves to optimize the relationship between risks and opportunities with a view to sustainable business success. To assure this, we use and evolve suitable instruments, such as an appropriate handbook and/or a risk inventory, to identify, analyze, assess, and control opportunities and risks. In the following, opportunities and risks are presented on a gross basis.

Risk management system

The Pfeiffer Vacuum risk management system includes all levels of the Corporate Group. The system is described in a risk handbook that is available to all employees and updated on an as-needed basis. Our flat hierarchy and fast communication channels aid in swiftly identifying risks at every level of the Company and using suitable measures to combat them. The risk coordinator monitors the proper implementation of risk management and the full risk inventory. The risk inventory is performed by the department heads at the large production sites and by the managing directors at the remaining subsidiaries. Consolidating all inventories at an aggregate level produces a differentiated overall picture of the Corporate Group's risk position.

During the year, risk inventories are updated if necessary; what we define, in addition to a concrete description of the risks, is the potential quantitative impact on operating profit, the likelihood of occurrence and suitable countermeasures. At year end, a complete risk inventory is made, which is reviewed by both the risk coordinator as well as the Management Board. In addition, we have defined the areas of risk management within the individual market segments and have put in place the necessary processes as well as early-warning and monitoring systems. The monthly Corporate Group reporting system supports the risk management process with a variety of parameters and reports that serve as an essential basis for the Management and Supervisory Boards upon which to regularly deliberate on current business. The monthly meetings of senior executives and monthly conference calls are also firmly established institutions that enable the department heads and our subsidiaries to share information with the Management Board relating to potential risks and how to handle them.

In addition to monthly reporting, our internal controlling system (ICS) helps us to identify risks in daily processes and thus avoid potential errors. The processes reviewed in this connection are first and foremost ones that have a major impact on Pfeiffer Vacuum's financial position. Regularly conducted inspections protect against human error, system errors, and breaches of internal regulations.

Risk management as it relates to consolidated accounting pursuant to § 315, Sub-Para. 4, German Commercial Code ("HGB")

The purpose of an internal consolidated accounting control system is to ensure adequate certainty by implementing controls that – despite identified risks – enable consolidated financial statements to be prepared in accordance with applicable standards. The Management Board bears overall responsibility for the internal control and risk management system in respect to the consolidated accounting process. All companies included in the Consolidated Financial Statements are covered by a strictly defined management and reporting organization. The principles, the organizational and procedural structures, as well as the processes of the individual control and risk management systems relating to consolidated accounting, are stipulated throughout the entire Corporate Group in guidelines and organizational procedures that are adapted if needed to reflect current external and internal developments. Our internal experts also work together with external counterparts on a case-by-case basis. This enables us to ensure that our accounting is in compliance with IFRS accounting and valuation regulations.

In respect of the consolidated accounting process, we consider those characteristics of the internal control and risk management system to be key that can have a decisive influence on consolidated accounting and on the overall view presented in the Consolidated Financial Statements. In particular, these are the following elements:

- Identification of the major fields of risk and areas of control that are relevant to the consolidated accounting process,
- Monitoring controls for enabling the consolidated accounting process to be supervised by the Management Board,
- Preventive control measures in the finance and accounting systems of the Corporate Group and the companies included in the Consolidated Financial Statements, as well as in operational corporate processes that generate key information for drawing up the Consolidated Financial Statements, including the Management Report for the Corporate Group (including separation of functions),
- Measures that assure proper IT-based processing of facts and data that relate to consolidated accounting.

Opportunity management system

The Pfeiffer Vacuum opportunity management system is closely linked to the risk management system, as many risks also offer opportunities that should be utilized where appropriate. This is why the risks identified in the risk inventory are simultaneously examined with a view to potential opportunities, which produces a correlation. In extensive decision-making processes, we analyze the question of whether the potential opportunities or risks predominate, which means that we only engage in risks that appear to be manageable and are compensated for by the opportunities they offer.

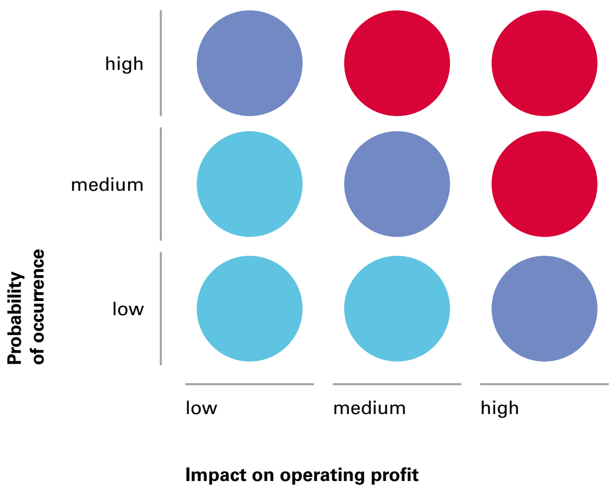
We conduct market and competition analyses in order to be able to explicitly make optimum use of industry and overall economic opportunities. This provides us with a good overview to further broaden our market share by specifically utilizing our potential. Close contact with our customers additionally aids us in identifying trends early on, thus enabling us to actively shape changes in the marketplace.

With variance analyses and development forecasts, our highly refined reporting system also identifies opportunities in our regional structure. Our global sales and marketing network enables us to swiftly and purposefully take advantage of these opportunities.

Risk classification

The risk classification of the risks presented below was effected according to a matrix, taking into consideration the probability of occurrence and the potential impact on the operating profit.

RISK CLASSIFICATION



Risk classification
- low
- medium
- high

RISKS

Overall economy
(risk class: low)

As a globally operating Group, we are dependent upon global economic developments. Nor can Pfeiffer Vacuum avoid the effects of a decline in world economic growth, and would have to expect to see a direct impact on our sales and profitability. However, the regional and market segment mix of sales is very balanced at Pfeiffer Vacuum, and its overall structure compensates for revenues in economically weak and economically growing markets and industries. Because it is seldom that all regions and market segments are equally affected by a deteriorating economic development. Despite the overall compensating developments, there may be an impact on the economic success of individual segments. The semiconductor market represents a significant share of sales and Pfeiffer Vacuum is therefore exposed to a greater extent to the fluctuations of this market. Managing the economic risk essentially involves steering capacities and costs. Flexible working time models enable us to swiftly and easily adapt production capacities to reflect the development of the order situation.

Market segments
(risk class: medium)

Sales in Pfeiffer Vacuum's individual market segments are closely linked to global economic developments. The research & development market, for example, is dependent upon government spending and focuses in connection with research projects. The semiconductor market follows its own cycles, which offers enormous opportunities during boom phases and involves major risks during phases of weakness. The coating market is closely linked to developments in the photovoltaic industry and showed improved momentum during the last two years. The heterogeneous industrial market segment follows overall economic trends in its general development. The development work in the product categories goes hand in hand with the trends in the individual market segments. This means that smaller turbopumps and analysis instruments are more likely to be required in the analytical industry, which tends to respond on an early cyclical basis. Large quantities of backing pumps are employed in the semiconductor market, but also in other industries whose developments generally conform to those in mechanical engineering.

In order to combat the risks stemming from dependence upon individual market segments and products, Pfeiffer Vacuum places a great deal of value on its broad-based alignment. At the same time, a disproportionately high share of revenue derives from the semiconductor industry, which presents both an opportunity as well as a risk due to the cyclical nature of this industry's development. Pfeiffer Vacuum's strategy for lowering this risk is to increasingly market products in other industries through our distribution channels, thus lowering the share of total revenues accounted for by the semiconductor industry. Current studies on the semiconductor industry show that this market will grow strongly beyond the cycles.

Acquisition and integration
(risk class: low)

The integration of companies into the purchaser's corporate group always poses a special challenge. In order to preclude as far as possible the risk that the expectations which are placed upon the acquisition might not fully materialize, we conduct detailed due diligence reviews in advance of a corporate acquisition. Analyzed in particular in this connection are the legal situation, technical equipment, production planning, and the current and expected financial position of the Company to be acquired. To minimize legal and financial risks in particular, we draw upon the counsel of reputable law firms and tax advisors with substantial experience of acquisitions on this scale during the period of preparing and realizing the acquisition. Taken as a whole, these measures ensure that all aspects of a corporate acquisition are taken into consideration, and enable conclusions to be drawn regarding the potential synergies that will result from an acquisition. This significantly reduces the risk of unanticipated developments. However, this risk can never be entirely excluded because a successful acquisition depends upon many other additional factors. This also applies for the integration which follows after acquisition.

To restrict integration-related risks, proven Pfeiffer Vacuum guidelines, which ensure structured and successful business operations, are implemented within newly acquired companies. Directly after acquisition, newly acquired companies are also integrated into the reporting system in the Pfeiffer Vacuum Group to allow targeted management of the individual companies. Besides extensive reporting, this also includes monthly conference calls and regular meetings on site in the countries concerned. In addition, the standardized risk management system will be installed at all new Group companies. The risk of intransparency is thus eliminated.

Technology
(risk class: medium)

Products and services that do not meet customer expectations lead directly to declining sales, and thus to a loss of market share and reputation. Therefore, the key risk factors for Pfeiffer Vacuum include a lack of innovative strength and the loss of quality of products and services. We combat these risks through ongoing customer contact and the resulting market intimacy. The information thus obtained about the needs of our customers enables us to develop and offer products that are suited to their demands. This allows us to expand both our competitive position as well as our name recognition. We will continue to combat the risk of a lack of innovation through our development investments. In addition, maintaining high standards of quality is a top priority for us. We received certification to ISO 9001:2008 for the first time in 1995, and this has since been sustained without interruption.

Purchasing and manufacturing
(risk class: low)

The risks in the sourcing market occur, in particular, in the form of supply bottlenecks and dependency upon individual vendors. Downtimes are viewed as a key risk from a production standpoint. We primarily combat the risk of supply bottlenecks and vendor dependence by continuously reviewing alternative supplier options. Anticipated market shortages of raw materials, such as steel and aluminum, and the price risks which these entail, are combated through long-term framework contracts. In general, however, it can be said that the effects of changes in the price of raw materials do not have any significant influence on profitability. Business interruption insurance is in force to cover the effects of downtimes resulting from fire, storm or flood damage, for example. Qualified technicians and modern production machinery keep technically related downtimes to a low level. Regular servicing and preventive maintenance for our machinery and equipment also help to avoid downtimes.

Human resources
(risk class: low)

As a provider of vacuum solutions, i.e. a subset of mechanical engineering, we are dependent upon the high level of education, training and commitment of our employees. We use various measures to combat the risk of losing these people and/or insufficient recruiting possibilities for suitable new talent. An attrition rate that continues to be low documents the acceptance of this on the part of our people.

Information technology
(risk class: low)

Because our business processes are mapped by means of software support, Pfeiffer Vacuum's corporate data is subject to a general information technology risk. This includes, first and foremost, the risks of system outages, data losses, virus or hacker attacks that could lead to an interruption of business operations. We keep the risk of data losses to a minimum by performing daily backups of our complete enterprise data. Our enterprise database, in particular, with which manufacturing operations, materials management, order handling, financial and cost accounting are handled, is subject to a high security standard. All files created by our employees within the server environment are also backed up on a daily basis. Our backup tapes are stored in secure, fireproof locations. The activities of our in-house support team reduce system outages to a low level. The Company also uses regularly updated virus scanners and modern firewalls to protect its hardware and software against the risk of computer viruses and hacking.

Exchange rates
(risk class: low)

As a result of our pronounced international operations and the high percentage of export business that this involves, we are subject to a foreign exchange risk. A distinction must be made with respect to the way foreign exchange risks are controlled; the Company conducts active currency management for all intra-group sales invoiced in U.S. dollars or Korean won. In order to minimize the impact of exchange rates on future sales of this kind, we enter into forward exchange contracts and occasionally forward exchange options for the aforementioned currencies. Moreover, there is a valuation risk in some companies at the close of the fiscal year that stems from intercompany accounts receivable denominated in foreign currencies. Both, gains and losses from realized options and futures contracts, as well as the valuation results stemming from foreign currency accounts receivable, can be controlled to a certain extent. These are reflected in the Consolidated Statements of Income.

In addition to this, the Consolidated Statements of Income also include the income and expenses of non-German subsidiaries that do not report in euros and must therefore first be converted into euros. The line items in the Statements of Income are converted into euros at the annual average exchange rate and then adjusted for intercompany sales and services. Preliminarily leaving selling and general administrative costs out of consideration, the Company's sales are listed in the foreign currency with corresponding manufacturing costs listed predominantly in euros. Sales invoiced in U.S. dollars, for example, are subject to a foreign exchange risk (currency risk) while manufacturing costs are mainly incurred in euros and are not influenced by exchange rate fluctuations. The magnitude of sales and gross profit are therefore influenced directly by the exchange rate and are externally stipulated and non-hedgeable. A certain degree of compensation for this effect results from the fact that the subsidiaries outside of the eurozone record their own selling and general administrative costs, which change counter to sales (natural hedge). As a function of the development of the euro relative to the respective foreign currency – there can be both positive as well as negative effects on sales and operating profit.

Liquidity position
(risk class: low)

The risk of a customer's insolvency always exists, independently of the economic situation (default risk). There are general liquidity risks of being unable to satisfy required payment obligations in a timely manner. The rigorous system of accounts receivable management that has long been practiced at Pfeiffer Vacuum, along with monitoring of our customers' payment patterns, minimizes creditworthiness risks and thus accounts receivable losses. Moreover, our dependence upon individual customers is limited.

The liquidity situation of the Pfeiffer Vacuum Group has been exceptionally good. The financial liabilities which amounted to € 60.3 million (equivalent to a share of 9.7% of the balance sheet total) as of December 31, 2018 were taken on to finance an acquisition SEE NOTE 23. Unchanged from previous years, with liquid assets of € 108.4 million, there exists no debt on a net basis. This means that there is sufficient room for maneuver financially to assure the survival of the Company, even in difficult economic times. Our operative business generates sufficient liquid assets to enable the Company to continue to grow from within.

Legal risks
(risk class: low)

As a result of Pfeiffer Vacuum's international business operations, the Company is subject to a variety of legal risks. National and international contract law and taxation are of particular significance in this connection. These areas can have a direct bearing on the Company's earnings and financial position. Standardized terms and conditions of contract and business are always employed to minimize the risk stemming from contracts entered into for products and services. In the case of special contracts, the contract instrument is first reviewed in-house and then by external legal counsel, if necessary. The expertise required for assessing the Company's daily business is provided by our qualified staff. We draw upon the assistance of external tax advisors in connection with complex issues that relate to national and international taxation. Product liability risks are covered by appropriate insurance. No legal disputes are currently pending whose outcome could have a material impact on the Company's earnings or financial position.

Brexit
(risk class: low)

Pfeiffer Vacuum also supplies customers in the United Kingdom through a sales subsidiary in England. Due to the customs formalities that would be required, the withdrawal of the United Kingdom from the European Union (Brexit) would primarily incur longer transportation times, which we could compensate for by appropriately increasing inventories. Currently, no competitor in the vacuum industry manufactures its products within the United Kingdom, so that even if import duties were levied on the market, there would be no competitive disadvantage. On the procurement side, the Pfeiffer Vacuum Group would be in a position to compensate for extended delivery times and/or higher prices, due to customs duties, for goods procured from the United Kingdom by purchasing from alternative suppliers within the EU. We continue to rate the long-standing currency risk as low, not least because a significant portion of our business is already conducted in euros.

OPPORTUNITIES

Macroeconomic and sector-specific opportunities

The global economic development in the past fiscal year was marked by moderate growth. The Chinese economy recorded growth rates at a higher than average level. Positive growth trends are expected to continue in the United States and Germany, even if not at the comparatively high level of 2018. This will stabilize our position in this region at a good level. Our good position and global presence give us the opportunity to even improve our position in relative terms. The economic cycle phases, particularly the cyclical nature of the semiconductor industry that has been referred to a number of times, are both an opportunity and a risk.

Technology

Through its many years of experience, Pfeiffer Vacuum is highly successful in developing viable, high-quality products and bringing them to market. The foundation for this consists of our close collaboration with our customers in a spirit of trust, which enables us to anticipate their needs and thus gain a head start over our competitors. With innovative products and by steadily broadening our product portfolio, there are opportunities for better satisfying the demands of existing markets and generating opportunities for additional sales volumes by gaining market shares. This enables us to offer our customers a broader spectrum of products. The most recent acquisitions in 2017 have also expanded the product portfolio in the areas of component business, service, and leak detection systems.

Sales

One of the Company’s key competitive advantages has always been its lack of dependence upon individual regions, products or markets. We therefore view the expansion of our sales and marketing network as representing an opportunity to increase our market share. The globally active sales teams are interlinked, and uniform Pfeiffer Vacuum sales rules have been put in place. Regular training is also given on the permanently expanding spectrum of products, to enable sales staff to make use of opportunities for increasing sales to existing and prospective customers.

Production and logistics

Through the optimization of our production and logistics processes, we have laid the foundation in recent fiscal years for further improving our profitability. We therefore see this as an opportunity for being even faster in offering high-quality solutions to our customers in future as well. We have rigorously aligned the flows of materials in manufacturing towards our modern logistics processes. Reorganizing and fundamentally modernizing manufacturing operations led to additional productivity gains. As a solutions provider, we focus squarely on the needs of our customers. And through the reorganization of our manufacturing processes, we are now being guided even more by the needs of our customers rather than by rigid planning dictates. Moreover, a cutting-edge warehouse system and a standardized system of product shipping increase efficiency. We are confident that the interplay between these modernization measures will help us to reduce throughput times in the future. Pfeiffer Vacuum has a total of three major production sites in Asslar, Göttingen, and Annecy. Furthermore, as part of the Nor-Cal acquisition, a larger production site in Yreka, USA, has been added. Further production sites are located in Cluj, Romania, Ho Chi Minh City, Vietnam, Indianapolis, USA and Asan, Republic of Korea.

Human resources

The development of viable new products, the on-going improvement of our existing product portfolio, the high level of precision of the production processes, the sale and distribution of our products in a technologically very challenging competitive environment, and the administration of an internationally operating, publicly traded Corporate Group necessitate a highly qualified and motivated workforce. We therefore utilize the opportunity of assuring the long-term loyalty of the Company's existing talent while simultaneously being an attractive employer for new people. Attractive pay concepts have been in place for years at Pfeiffer Vacuum. We therefore view ourselves as being well equipped to cover our future needs for qualified skilled labor and university graduates in the future and to assure the loyalty of our talent to the Company – both are absolute prerequisites for the successful further development of the Company.

Cooperation with the Busch Group

Pfeiffer Vacuum is currently negotiating a strategic cooperation agreement with Busch SE (Busch Group) in order to cooperate more closely in the future, particularly in the areas of purchasing, sales and service, research & development and IT. The objectives of the planned cooperation are to strengthen the competitive position in the market for vacuum technology, to make better use of the growth opportunities that present themselves and to improve cost structures. Through strategic cooperation with the Busch Group, for example in research and development projects as well as procurement and sales processes, accelerated growth and an improved competitive position could be achieved in the coming years. In terms of the consolidation taking place in the vacuum industry as well, this cooperation would support Pfeiffer Vacuum's goal of positioning itself as a technology leader and strong number two in the global vacuum business. The starting point for the considerations for strategic cooperation is the multitude of similarities between the two companies as international vacuum technology groups, which have a complementary product range with solutions for different target markets. One common objective of the cooperation agreement is to create the conditions for leveraging synergies in the areas of purchasing, sales and service, research & development and IT. Price advantages could be realized by bundling the purchasing volume. Complementary product and service offerings could optimize the value chain of both companies and expand their market presence. Cooperation in individual research and development projects should lead to greater innovative strength and higher profitability.

General comments on the risk management system and the presentation of the risk and opportunities situation

We are of the opinion that the risk management system is suitable for identifying, analyzing, and quantifying existing risks in order to adequately steer them. Our auditor has reviewed the early risk detection system that is in place in connection with the audit of the Consolidated Financial Statements. This review did not result in any objections. Despite the number of risks disclosed being higher than the number of identified opportunities, Pfeiffer Vacuum considers the allocation of risks and opportunities as balanced overall. This particularly applies as the Group's economic success is based on a broad range of products for various industries. As those industries vary in terms of structure and economic cycles, this diversification contributes to a risk reduction. No risks are identifiable that could endanger the Company's survival, neither for the year covered by this Report nor for the following years.

Rating

Pfeiffer Vacuum Technology AG is not subject to any official rating by Moody's, Standard & Poor's or similar agencies.

SUBSEQUENT EVENTS

There were no significant changes in the Company situation or the sector environment since the beginning of the 2019 fiscal year.

OUTLOOK

General economic development remains robust

The International Monetary Fund (IMF) forecasts global economic growth of 3.5 % for 2019. Compared to the previous year, this represents a decrease of 0.2 percentage points. For 2020, the IMF expects an increase of 3.6 %. In its latest forecast in October 2018, the organization had still expected an increase of 3.7 %. The reduction was mainly due to the unresolved trade conflicts, fluctuations in the financial markets as well as an unregulated exit of Britain from the European Union. These factors could continue to weigh on the global economy.

The IMF expects growth for the eurozone of 1.6 % for 2019. This lowered expectations by 0.3 percentage points compared to October. The forecast decline for Germany was even more pronounced: At 1.3 %, growth forecast is currently 0.6 percentage points below the level of fall 2018. The development is mainly due to the production difficulties in the automotive industry and a decreasing external demand.

After a 2.9 % increase in economic output in 2018, experts believe that the U.S. will see growth of 2.5 % for the current year, but it should weaken further to 1.8 % in 2020. The reasons for the slowdown were, besides the downturn in impulses due to the tax reform introduced by President Trump, the continuing disputes over the national budget and international trade relations.

Slower growth is also predicted for China, the world's second largest economy – although at a higher level: After 6.6 % in 2018, it is expected to rise by 6.2 % annually up to 2020. For the emerging and developing countries as a whole, the IMF still expects a stable economic performance with a growth rate of 4.5 % for 2019, which is expected to rise to 4.9 % the following year.

Mechanical engineering is generally optimistic

The German Mechanical Engineering Industry Association (Verband Deutscher Maschinen- und Anlagenbau – VDMA) assumes that production in this country will rise by 2 % in 2019. Due to various factors of uncertainty for the global economy, including the trade dispute between the USA and China, Brexit and the economic difficulties in Italy, the VDMA economists expect slower global economic growth in 2019, which will also have an effect on Germany. Nevertheless, they expect slightly positive accents from the two most important foreign markets in China and the USA. For domestic business, the experts at the VDMA are also optimistic and expect a slight increase compared to the result for 2018.

This optimistic outlook is not least due to the fact that the visibility of orders in this German sector stands currently at 8.6 months. Many of the existing orders at the end of 2018 therefore reach far into 2019.

The USA remains the industry's most important market. Between January and November 2018, around € 17.7 billion were invested there – an increase of about 7.7 % compared to the previous year. Just short of this is the Chinese market with a volume of € 17.4 billion, which corresponds to an increase of 10.5 %.

The OECD leading indicator points to a slowing growth dynamic. This would also affect the mechanical engineering sector. Especially for the USA and Germany, there were signs of weaker momentum. In November 2018, the leading indicator for the entire OECD area decreased by 0.1 to 99.3 points.

Overall, the forecasts for the mechanical engineering sector point to a cautiously positive development of the order and sales situation, which stands at a high level.

Long-term growth trend of relevant markets intact

Pfeiffer Vacuum structures its customers into the semiconductor, industrial, analytics, research & development and coating markets. Although the **semiconductor** market segment is generally regarded as cyclical, it has experienced a recovery since 2015, which was accompanied by strong demand. Despite subdued expectations from many manufacturers and OEMs [Original Equipment Manufacturers], 2018 saw further growth rates. Beginning with the third quarter, initial delays in manufacturers and OEM orders continued beyond the fourth quarter. Due to this deterioration, we see a slowdown in growth, but no downturn. We still consider the market dynamics to be intact and expect the delays to be resolved by the second half of 2019 at the latest. There are unchanged good opportunities for the future: Pfeiffer Vacuum strongly believes that the demand for products from the semiconductor industry will generally grow with the increasing complexity of digital innovations and grow above average in almost all areas of daily life, even if this development is typically characterized by a strong cyclical nature.

In the **industry** market segment, order growth is mainly driven by new product developments and materials as well as the general trend towards energy efficiency and resource conservation. Unchanged from previous years, Pfeiffer Vacuum also expects a comparatively stable growth trend in the medium term. For the **analytics** market segment, Pfeiffer Vacuum expects moderate growth from the already high level of the previous year. Analytical instruments are used in research and quality assurance activities in general industry and, particularly, in the semiconductor sector. The **research & development** market segment is dependent on political decisions concerning the funding of projects and research institutions. Here, we also anticipate slight growth in sales in 2019.

The **coating** market segment includes customers in the fields of display (LED, OLED), architectural glass, solar and many other areas of surface finishing. In 2018, demand continued to grow here, even though with decreasing momentum and, based on our estimates, it will stagnate at a high level in 2019.

Overall, we see the market development of the highly differentiated customer markets relevant to Pfeiffer Vacuum as intact over the long term and accompanied by further growth.

Further sales growth expected for 2019

Based on expected annual organic sales growth in the high single-digit percentage range over the period of the three-year investment program, we anticipate sales growth slightly below this average in the 2019 fiscal year.

Medium-term increase in EBIT margin to more than 20 %

Following the implementation and realization of the strategic measures adopted in the 2018 financial year, we expect the EBIT margin to increase to more than 20% in the medium term. However, in the short term this implementation will initially weigh on earnings, on the one hand due to the expected increase in operating expenses and, on the other hand, as a result of the increase in amortization amounts. By contrast, we expect initial effects from the strategic partnership with the Busch Group and thus positive effects on margins and earnings. Both aspects cannot yet be conclusively assessed in terms of their earnings impact. Overall, however, we assume that the operating profit margin in 2019 will be similar to the level of 2018, and will at best be slightly above this. Due to the continuing low level of interest rates, we expect the development of earnings before taxes to be largely in line with the operating profit. The investments currently planned for the 2019 fiscal year as part of the 3-year investment program are likely to be in a range between € 40 and € 60 million, depending on which measures can be implemented in 2019 and which will be realized in the following year. The objectives of the investment program continue to include investments in the expansion and modernization of production capacities, the intensification of research and development, the promotion of Industry 4.0 objectives, and the expansion of the Company's presence in Asia as a whole and China in particular.

Dividend to increase by € 0.30 to € 2.30

Due to the good operating profit and the confidence of the management in the Company's further growth, the Management Board proposes to pay out an increased dividend of € 2.30 per share for the 2018 fiscal year (previous year: € 2.00 per share). With a distribution volume of € 22.7 million, this would result in 33.0% of net profit of the Group being paid out to shareholders SEE NOTE 20.

DIVIDEND FIGURES

		2018	2017
Payout ratio[1]	in %	33.0	36.6
Dividend per share	in €	2.30[2]	2.00
Dividend yield	in %	2.1[2]	1.3

[1] proposed distribution in comparison to the net income of the respective year
[2] subject to the approval of the Supervisory Board and the Annual General Meeting

Forward-looking statements

The statements, estimations and other information in this outlook are based upon assumptions relating to the development of the future overall economy and the industry. These assumptions are based on the current status at the time of preparing the Group Management Report. There are risks and uncertainties relating to the probability of the statements and estimations made here, meaning that the actual developments may deviate significantly.

Assuming no major deterioration in global economic development, Pfeiffer Vacuum is convinced that it will be able to further increase sales and earnings in the 2019 fiscal year. All things considered, we are convinced that we are able to achieve these goals on the basis of the three-year investment plan, a new, global organizational structure and the strategic partnership with the Busch Group. However, uncertainties about geopolitical developments and the resulting decline in demand and currency volatility pose a risk to achieve these goals.

OTHER INFORMATION

Takeover-relevant information pursuant to § 315a Sub-Para. 1 of the German Commercial Code (“HGB”)

The subscribed capital of Pfeiffer Vacuum Technology AG as of December 31, 2018, remained unchanged at K€ 25,261 and consists of a total of 9,867,659 no-par value shares. There are no different classes of shares currently or previously existent, so all shares have the same rights, in particular the same voting and dividend entitlement rights. Accordingly, the calculated share of the subscribed capital amounts to € 2.56.

As of December 31, 2018, Dr. Karl Busch, Ms. Ayhan Busch, Ms. Ayla Busch, Mr. Sami Busch and Mr. Kaya Busch, all of Germany, according to their own statements, held a total of 50.02 % of the voting rights in the Company (previous year: 38.96 %). No further information is available to us. The shares are held indirectly through Pangea GmbH, Maulburg, Germany, and other independent legal entities belonging to the family-run Busch Group, and are deemed to be held by the persons named. To the best of our knowledge, there were no other shareholders with a holding of more than 10.0 % as of December 31, 2018 and also as of December 31, 2017.

Amendments to the Articles of Association can be adopted by the Annual General Meeting by a simple majority of the voters present at the Annual General Meeting, unless the law requires a larger majority. To the best of our knowledge, there are no restrictions on voting rights or the transfer of shares. According to the Articles of Association of the Company and §§ 84 and 85 of the German Stock Corporation Act (“AktG”), Management Board members are appointed by the Supervisory Board for a maximum of five years. Reappointments or extensions to the term of office are permitted for a maximum of five years in each case.

Through a resolution of the Annual General Meeting on May 23, 2018, the Management Board was authorized to increase the subscribed capital one or more times by € 12,630,602.24 or 4,933,829 shares in exchange for cash and/or contributions in kind (authorized capital). This authorization is valid until May 23, 2023 and requires the approval of the Supervisory Board.

According to the resolution of the Annual General Meeting on May 22, 2014, the Management Board is authorized to issue fractional bonds with option or conversion rights or conversion obligations, profit participation rights or participating bonds (or combinations of these instruments) with an aggregate nominal value of up to € 200,000,000.00 and to grant the holders conversion rights for up to 2,466,914 no-par bearer shares of the Company having a pro-rata amount of the share capital of up to € 6,315,299.84. This authorization is valid until Tuesday, May 21, 2019 and requires the approval of the Supervisory Board.

At the Annual General Meeting on May 21, 2015, the shareholders authorized the Management Board to repurchase treasury shares pursuant to § 71 Sub-Para. 1, No. 8, German Stock Corporation Act (“AktG”). This authorization covers the buyback of a proportionate amount of the Company’s share capital of up to € 2,526,120.70 (986,766 shares corresponding to 10 % of the share capital at the time the resolution was adopted), requires the approval of the Supervisory Board and is valid through May 20, 2020. The Corporate Group does not own treasury shares as of December 31, 2018 and 2017.

For information relating to the employment contracts of the members of the Management Board, please refer to the corresponding paragraphs in the compensation report SEE PAGE 82.

There are no further aspects that would require discussion within the context of § 315a Sub-Para. 1, German Commercial Code (“HGB”).

CORPORATE GOVERNANCE REPORT AND DECLARATION ON CORPORATE GOVERNANCE

Pfeiffer Vacuum complies with virtually all Code recommendations

On December 5, 2018, the Management and Supervisory Boards of Pfeiffer Vacuum Technology AG submitted the Statement of Compliance for the year 2018 required pursuant to § 161 of the Germany Stock Corporation Act ("AktG"). It was made permanently accessible to shareholders on the Corporation's website (group.pfeiffer-vacuum.com).

Since the submission of the last statement of compliance on January 24, 2018, Pfeiffer Vacuum Technology AG complies with all recommendations of the German Corporate Governance Code, as amended in February 2017, with the following two exceptions:

- The German Corporate Governance Code recommends a deductible for the Supervisory Board's D&O insurance (Paragraph 3.8). The Supervisory Board's actual D&O insurance does not contain a deductible. A deductible would not improve the Supervisory Board's overall motivation and sense of responsibility as the members work for the benefit of the Group.
- The German Corporate Governance Code recommends that a term limit is established for the period on the Supervisory Board (Paragraph 5.4.1). In the financial year 2018, the Supervisory Board has set a specified limit of 15 years for the period of membership on the Supervisory Board. All members of the Supervisory Board fulfil this requirement, with the exception of Mr. Götz Timmerbeil; the Supervisory Board made an exception for him, since he possesses a high level of expertise and many years of knowledge of the Company, which the Supervisory Board would not like to forgo at this point in time and after the resolved changes to the Supervisory Board in the past three years.

Dual management system: Management Board and Supervisory Board

As a stock corporation based in Asslar, Germany, Pfeiffer Vacuum Technology AG is also subject to the provisions of the German Stock Corporation Act ("AktG"). One of the basic principles enshrined in this is the dual management system, which assigns the management of the Company to the Management Board and the appointment, advice and supervision of the Management Board to the Supervisory Board. These two bodies are strictly separated as corporate organs, both in terms of their members and their responsibilities. Both bodies work together closely in the interests of the Company.

Management Board

Since November 27, 2017, the Management Board has consisted of

- Dr. Eric Taberlet, Chief Executive Officer (CEO), Diploma in Engineering,
- Nathalie Benedikt, Chief Financial Officer (CFO), Diploma in Business Administration,
- Dr. Ulrich von Hülsen, Diploma in Physics, and
- Dr. Matthias Wiemer, Diploma in Engineering.

The members of the Management Board are responsible for the further development and strategy of the Company. They are also involved in the day-to-day running of the Company and bear operational responsibility.

The responsibilities of the current members of the Management Board were as follows in the 2018 fiscal year:

PFEIFFER VACUUM TECHNOLOGY AG MANAGEMENT BOARD

Dr. Eric Taberlet
(CEO)

Business Unit Semiconductor & Coating
Sales & Marketing
Production/Quality
Training/Service
Supply Chain
R&D

Nathalie Benedikt
(CFO)

Central Functions
Controlling & Finance
Corporate Communications
IT
Human Resources
Investor Relations

Dr. Ulrich von Hülsen

Business Unit Analytics & Industry
Sales & Marketing
Production/Quality
Training/Service
Supply Chain
R&D

Dr. Matthias Wiemer

Global Operations & Components
Global Sourcing
Global Production Footprint
Components Business

In order to implement the individual areas of the growth strategy – gaining market share, strengthening the global production and value chain, expanding R&D activities – in a faster and more focused way, it was decided at the beginning of November 2018 to redefine the allocation of responsibilities in the Management Board with effect from January 1, 2019. According to the decision of the Management Board and Supervisory Board, the Company is to be organized in the future according to its global business functions.

Starting January 1, 2019, the new functions of the Board of Management members are as follows:

FUNCTIONS OF THE MANAGEMENT BOARD MEMBERS

CEO = Chief Executive Officer, CSO = Chief Sales Officer,
CTO = Chief Technology Officer, CFO = Chief Financial Officer,
COO = Chief Operations Officer

The COO will be responsible for the performance, efficiency and flexibility of the global operational infrastructure and processes. The position of COO is filled by an external consultant on an interim basis. At the same time, the search was initiated for a suitable candidate for permanent appointment to this position.

Dr. Matthias Wiemer will serve as a member of the Management Board with a remit for special tasks until his contract expires on December 31, 2019.

The four-eyes principle applies in exercising the duties and responsibilities of the Management Board. Major decisions are always made jointly. Personal expenditures, such as travel and entertainment expenses, require the approval of another Management Board member. In addition to close cooperation and reciprocal information on a daily basis, board meetings are held weekly.

The Management Board works exclusively for Pfeiffer Vacuum. In this context, the Management Board members are also members of supervisory organs of various subsidiaries of the Company. They are not members of any regulatory bodies outside the Pfeiffer Vacuum Group.

Supervisory Board

Pursuant to the statutory requirements and the Articles of Association of Pfeiffer Vacuum Technology AG, the Supervisory Board consists of a total of six persons. Four persons represent the shareholders and two persons represent the employees of the Company.

The Supervisory Board members elected by the shareholders Dr. Michael Oltmanns and Dr. Wolfgang Lust resigned from their Supervisory Board mandate with effect from October 25, 2017 and left the Supervisory Board at that time. By decision of the Wetzlar District Court on October 5, 2017, Ayla Busch was legally appointed to the Supervisory Board for the period from October 26, 2017 until the end of the next ordinary Annual General Meeting. Ayla Busch was elected as Chairwoman of the Supervisory Board at the Supervisory Board meeting on October 26, 2017. By resolution of the Wetzlar District Court dated March 19, 2018, Henrik Newerla was legally appointed as a member of the Supervisory Board for the period from March 19, 2018 until the end of the next Annual General Meeting.

Accordingly, new elections to the Supervisory Board took place at the last Annual General Meeting on May 23, 2018. The Annual General Meeting approved the proposal of the Supervisory Board and elected Ayla Busch and Henrik Newerla as full members of the Supervisory Board. In turn, at the constituent meeting of the Supervisory Board on May 23, 2018, Ms. Busch was appointed Chairwoman of the Supervisory Board.

Membership over the course of the year 2018 was as follows:

- Ayla Busch (Chairwoman), Co-CEO Busch SE, Maulburg
- Götz Timmerbeil (Vice Chairman), Auditor and Tax Consultant
- Filippo Th. Beck, Attorney at Law of Swiss Law
- Helmut Bernhardt (Employee Representative), Development Engineer
- Manfred Gath (Employee Representative), Chairman of the Employee Council
- Henrik Newerla, Retiree from March 19, 2018

The Supervisory Board members elected by the shareholders, Götz Timmerbeil and Filippo Th. Beck, were voted during the Annual General Meeting to a term of office of five years in May 2016. The term of office of the subsequently elected Supervisory Board members Ayla Busch and Henrik Newerla also ends on the day of the Annual General Meeting, which resolves on the discharge for the financial year 2020.

For election as Supervisory Board Member, the Nominating Committee submits a nomination suggestion to the Supervisory Board. When selecting the candidates, care is taken to ensure that at all times there are members of the Supervisory Board who possess the requisite expertise, skills, and professional experience and are sufficiently independent. The international activities of the Group and potential conflicts of interest are also taken into account.

For its composition the Supervisory Board has determined the following specific objectives: internationality, avoidance of potential conflicts of interest, independence, temporal availability, age limit, term of membership, occupational diversity. These objectives have been taken into consideration in the past, and this is also intended for future nominations.

No compensations or benefits for personal service rendered, especially consultation and brokerage services, were paid or granted to the members of the Supervisory Board during the period under review. No potential conflicts of interest requiring immediate disclosure to the Supervisory Board arose for Management and Supervisory Board members in fiscal 2018. Finally, the Rules of Procedure for the Management Board provide that the Supervisory Board must grant its approval for significant business transactions.

According to the recommendations of the German Corporate Governance Code, no more than two previous Management Board members hold seats on the Pfeiffer Vacuum Supervisory Board. Furthermore, the Supervisory Board reviews the independence of its members. It has established standards for assessing this independence, which are based on the Code, in particular. According to these principles, the majority of current Supervisory Board members is considered independent, thus assuring independent advice and monitoring of the Management Board.

The establishment of an Audit Committee is a longstanding practice at Pfeiffer Vacuum. As a certified public accountant, the Chairman of the Audit Committee, Götz Timmerbeil, is particularly qualified to bear responsibility for the activities of the Audit Committee, in particular in connection with questions relating to financial accounting, compliance, and the risk management system.

The task of the Nominating Committee is to suggest suitable candidates to the Supervisory Board who can then recommend them for nomination to the Annual General Meeting.

The committee memberships of the Supervisory Board members can be seen in the following overview:

PERSONNEL COMPOSITION OF THE SUPERVISORY BOARD COMMITTEES

	Nominating Committee	Audit Committee	Management Board Committee
Frau Ayla Busch	Chairwoman	Yes	Chairwoman
Götz Timmerbeil	Yes	Chairman	Yes
Filippo Th. Beck	Yes	Yes	Yes
Helmut Bernhardt	—	—	—
Manfred Gath	—	—	—
Henrik Newerla (from March 19, 2018)	—	—	Yes

Additionally, a Management Committee was formed. In the past, the Management Committee has deliberated the personnel matters of the board members in detail before – in accordance with the requirements of the German Corporate Governance Code – being resolved by the full Supervisory Board. The determination of Management Board compensation is thus subject to the provisions of the German Act on the Appropriateness of Management Board Compensation.

The following members exercised further mandates. These are supervisory board mandates unless otherwise indicated:

- Ayla Busch
  – Busch Taiwan Corporation, New Taipei City, Taiwan, Supervisor, until January 17, 2019
  – Busch Clean Air S.A., Pruntrut, Switzerland, Member of the supervisory organ, until December 31, 2018
  – Busch Vakuumteknik A/S, Ry, Denmark, Member of the supervisory organ, until January 16, 2019
  – Busch Vacuum Israel Ltd., Kiryat Gat, Israel, Director, until December 31, 2018
  – Busch Vacuum India Pvt. Ltd., Manesar, India, Non-Executive Director, until December 31, 2018
  – Busch Consolidated Inc., Virginia Beach, United States, Non-Executive Director, until December 31, 2018
  – Busch Vacuum South Africa (Pty.) Ltd., Johannesburg, South Africa, Non-Executive Director, until December 31, 2018
- Götz Timmerbeil
  – Arena Gummersbach GmbH & Co. KG, Gummersbach (Deputy Chairman)
  – Richard Stein GmbH & Co. KG, Engelskirchen, (Chairman of the Advisory Board), from July 1, 2018
  – VfL Handball Gummersbach GmbH, Gummersbach (Chairman of the Advisory Board), until June 30, 2018
- Filippo Th. Beck
  – Candoria Group, Baar (Switzerland), member of the supervisory organ of Candoria Holding AG, president of the supervisory organ of Progresa Holding AG and Sendaya Holding SA (formerly: Candoria Luxembourg Holding SA), Luxembourg;
  – Tenro Group, Bottmingen (Switzerland), member of the supervisory organ of various companies in the group,
  – Biamathea AG, Basel (Switzerland), member of the supervisory organ,
  – Polyterra Liegenschaften AG in liquidation, Küsnacht (Switzerland), member of the supervisory organ and liquidator,
  – Tainn-Immobilien AG, Berne (Switzerland), member of the supervisory organ,
  – Bellavista Services AG, member of the supervisory organ, from April 10, 2018,
  – IKFE Properties I AG, Zurich (Switzerland), president of the supervisory organ, until November 1, 2018

The Company has taken out pecuniary loss liability insurance (so-called D&O insurance) for the members of the Management and Supervisory Boards.

Collaboration between the Management and Supervisory Boards

Close and trustful collaboration between the Management and Supervisory Boards is an essential prerequisite for good corporate governance and serves the good of the Company. Supervisory Board meetings are held at least twice a year in this context, for which the members of the Management Board report in detail on the course of business operations as well as on the implementation of the strategy agreed upon with the Supervisory Board.

If necessary, other executives also explain the current issues in their respective areas of responsibility. If needed, additional special meetings are held. The Management Board reports to the Supervisory Board on the general condition of the Company, including the risk situation, through a monthly reporting system.

Shareholders and Annual General Meeting

The Annual General Meeting is the supreme body of the corporation. At the Annual General Meeting, shareholders may exercise their voting rights themselves, through a proxy of their choice, or a proxy nominated by the Corporation who is bound to act on their instructions. The shareholders make key decisions at the Annual General Meeting about the allocation of profits, amendments to the Articles of Association, or the approval of share repurchase programs. All information and documents essential for the Annual General Meeting will be provided to the shareholders in a timely manner. The agenda and an explanation of the conditions of participation in addition to the shareholders' rights will generally be announced one and a half months before the Annual General Meeting date.

All documents and information for the Annual General Meeting are also available on our website. In addition, it is possible to electronically direct questions to the employees of our Investor Relations Department. Using our financial calendar, which is made public in the Annual Report, in the quarterly reports, and on our website, we inform shareholders and interested parties about key dates, publications, and events throughout the year. In addition, we maintain close ties with our shareholders through our active Investor Relations work. Moreover, it is also possible to contact the Company with questions at any time.

COMPENSATION REPORT

In the following section, the compensation for members of the Management and Supervisory Boards is detailed.

Compensation for the Management Board

Each Management Board member receives an annual fixed salary and benefits in kind, in particular, in the form of company cars are provided.

Each Management Board member continues to receive an annual bonus for the respective financial year depending on the achievement of pre-defined targets (short-term variable compensation). The bonus is K€ 140 when fully achieved and is paid after the Annual General Meeting for the previous year. For 2018, each Management Board member has been assigned three short-term goals corresponding to the respective area of responsibility.

In addition, each Management Board member receives long-term variable compensation depending on the achievement of defined goals during a three-year assessment period. Half of the long-term variable remuneration depends on the development of the Company's EBITDA and the other half on the achievement of a further target set by the Supervisory Board (so-called Key Performance Indicators or KPIs) or, alternatively, several further KPIs pre-defined by the Supervisory Board during a three-year assessment period. The amount of the annual bonuses and the long-term variable compensation are based on the degree to which the targets have been achieved and amount to K€ 160 when the targets have been fully met after three years. The target fulfillment achieved so far was recognized as a provision as of December 31, 2018.

BENEFITS GRANTED

Dr. Eric Taberlet, Chairman of the Management Board (Starting date: November 27, 2017)	**2018**	2018		2017
		Minimum value	Maximum value	
	in K€	in K€	in K€	in K€
Fixed compensation	251	251	251	27
Fringe benefits	38	38	38	0
Total	**289**	289	289	27
One-year variable compensation	140	0	140	29
Multi-year variable compensation (from 2018)	53	0	53	0
Total variable compensation	**193**	0	193	29
Other	0	0	0	0
Total compensation	**482**	289	482	56
Pension benefits	0	0	0	0
Comprehensive compensation	**482**	289	482	56

BENEFITS GRANTED

Nathalie Benedikt, Chief Financial Officer (Starting date: November 27, 2017)	**2018**	2018		2017
		Minimum value	Maximum value	
	in K€	in K€	in K€	in K€
Fixed compensation	220	220	220	20
Fringe benefits	20	20	20	0
Total	**240**	240	240	20
One-year variable compensation	140	0	140	13
Multi-year variable compensation (from 2018)	53	0	53	0
Total variable compensation	**193**	0	193	13
Other	0	0	0	0
Total compensation	**433**	240	433	33
Pension benefits	0	0	0	0
Comprehensive compensation	**433**	240	433	33

BENEFITS GRANTED

Dr. Ulrich von Hülsen, Member of the Management Board (Starting date: August 1, 2017)	2018	2018		2017
		Minimum value	Maximum value	
	in K€	in K€	in K€	in K€
Fixed compensation	220	220	220	92
Fringe benefits	8	8	8	3
Total	**228**	228	228	95
One-year variable compensation	140	0	140	125
Multi-year variable compensation (from 2018)	53	0	53	0
Total variable compensation	**193**	0	193	125
Other	0	0	0	0
Total compensation	**421**	228	421	220
Pension benefits	0	0	0	0
Comprehensive compensation	**421**	228	421	220

BENEFITS GRANTED

Dr. Matthias Wiemer, Member of the Management Board (Starting date: April 1, 2007)	2018	2018		2017
		Minimum value	Maximum value	
	in K€	in K€	in K€	in K€
Fixed compensation	350	350	350	290
Fringe benefits	14	14	14	23
Total	**364**	364	364	313
One-year variable compensation	140	0	140	300
Multi-year variable compensation (from 2018)	53	0	53	0
Total variable compensation	**193**	0	193	300
Other	0	0	0	0
Total compensation	**557**	364	557	613
Pension benefits	225	225	225	232
Comprehensive compensation	**782**	589	782	845

However, the long-term variable remuneration does not become due until two years later, and only in full if the average success of these two subsequent years is at least as high as the average success of the two previous years. If it falls below, the long-term incentive is reduced accordingly. The starting point of the calculation in both cases is an annual target amount, which is allocated for the long-term remuneration for the following three-year period. The payment of the long-term variable remuneration granted in 2018 can therefore be made for the first time after the end of the 2020 fiscal year.

The bonuses for the 2017 fiscal year were granted following a resolution of the Management Board Committee.

The aforementioned compensation is disclosed for the members of the Management Board active in 2018. There were no compensation elements granted or paid in 2018 for Manfred Bender who was dismissed as a member of the Management Board on November 27, 2017. In order to ensure the comparability of presentation of the active Board Member's compensation the previous year's figures with regard to Mr. Bender were adjusted accordingly.

Dr. Matthias Wiemer has received a pension commitment in the unchanged amount of 40% of the last fixed salary. In this context, net pension expenses pursuant to IFRS amounting to K€ 225 were recorded in the income statement in 2018 (previous year: K€ 232).

In addition, there are pension commitments to former Management Board members. The net pension costs of the completed fiscal year attributable to this group of persons amount to K€ 80 (previous year: K€ 327).

TOTAL BENEFITS GRANTED TO THE MANAGEMENT BOARD

	2018 in K€	2017 in K€
Fixed compensation	1,041	429
Fringe benefits	80	26
Total	**1,121**	455
One-year variable compensation	560	467
Multi-year variable compensation (from 2018)	212	0
Total variable compensation	**772**	467
Other	0	0
Total compensation	**1,893**	922
Pension benefits	225	232
Comprehensive compensation	**2,118**	1,154

After K€ 240 was paid into the Pfeiffer Vacuum Trust e.V. in 2017, repatriation totaling K€ 53 was made. The net pension obligation for Management Board members and former Management Board members amounts to K€ 6,869 (previous year: K€ 5,777). Current pensions in 2018 amounted to K€ 371 (previous year: K€ 358).

BENEFITS RECEIVED TO THE COMPENSATION OF THE MANAGEMENT BOARD

	Dr. Eric Taberlet Chairman of the Management Board		Nathalie Benedikt Chief Financial Officer		Dr. Ulrich von Hülsen Member of the Management Board		Dr. Matthias Wiemer Member of the Management Board		Total	
	Starting date: November 27, 2017		Starting date: November 27, 2017		Starting date: August 1, 2017		Starting date: April 1, 2017			
	2018 in K€	2017 in K€	2018 in K€	2017 in K€	2018 in K€	2017 in K€	2018 in K€	2017 in K€	2018 in K€	2017 in K€
Fixed compensation	278	0	240	0	220	92	350	290	1,088	382
Fringe benefits	38	0	20	0	8	3	14	23	80	26
Total	**316**	0	**260**	0	**228**	95	**364**	313	**1,168**	408
One-year variable compensation	29	0	29	0	109	0	300	337	467	337
Multi-year variable compensation (from 2018)	0	0	0	0	0	0	0	0	0	0
Total variable compensation	**29**	0	**29**	0	**109**	0	**300**	337	**467**	337
Other	0	0	0	0	0	0	0	0	0	0
Total	**345**	0	**289**	0	**337**	95	**664**	650	**1,635**	745
Pension benefits	0	0	0	0	0	0	0	0	0	0
Comprehensive compensation	**345**	0	**289**	0	**337**	95	**664**	650	**1,635**	745

Compensation for the Supervisory Board

The members of the Supervisory Board exclusively receive a fixed compensation determined by the Annual General Meeting. On May 24, 2016, the Annual General Meeting approved an increase in the Supervisory Board's compensation from the 2016 fiscal year onwards. If members of the Supervisory Board leave or are newly elected during the fiscal year, their remuneration will be paid on a pro rata temporis basis.

The composition of the remuneration for 2018 and 2017 is as follows:

FIXED COMPENSATION OF THE SUPERVISORY BOARD MEMBERS

	2018	2017
	in K€	in K€
Ayla Busch, Chairwoman of the Supervisory Board (from October 25, 2017)	105	19
Götz Timmerbeil, Deputy Chairman of the Supervisory Board	70	70
Filippo Th. Beck	35	35
Helmut Bernhardt	35	35
Manfred Gath	35	35
Henrik Newerla (from March 19, 2018)	28	—
Dr. Michael Oltmanns (until October 25, 2017)	—	86
Dr. Wolfgang Lust (until October 25, 2017)	—	29
Total	**308**	**309**

Proven expenses incurred by the Supervisory Board, such as travel expenses, will be reimbursed.

Negative statement

No further benefits were paid to Management or Supervisory Board members over and above the listed compensation components. In particular, no stock options were granted, no loan entitlements were established, and no liability commitments were pronounced. In addition, no special agreements were made further on in connection with the termination of the activities for the Management or Supervisory Boards or in connection with claw-back claims.

TRANSPARENCY

The claim to provide all target groups promptly with the same information at the same time is a high priority in our corporate communications. One of the ways that this is manifested is that all relevant information is published in German and in English. Shareholders and interested parties can directly obtain information on current developments within the Group on the Internet. All ad-hoc releases by the Pfeiffer Vacuum Technology AG shall be made available on the Company's website. The purchase and sale of Pfeiffer Vacuum shares by members of the Management and Supervisory Boards will be published immediately pursuant to Article 19 of European Regulation No. 596/2014 (Market Abuse Regulation), in Europe and on the Company's website at ↗ GROUP.PFEIFFER-VACUUM.COM.

EQUALITY

In January 2018, pursuant to § 111 Sub-Para. 5 of the German Stock Corporation Act ("AktG"), the Supervisory Board determined women's quota of 16.67% for the Supervisory Board and of 25% for the Management Board and a deadline for reaching the targets by December 31, 2020. These quotas are already achieved at the present time.

The provision contained in § 76, Sub-Para. 4, of the German Stock Corporation Act ("AktG"), refers to management levels at Pfeiffer Vacuum Technology AG only. Due to its function as a finance holding, this company only has very few employees and there are no further management levels below the Management Board, thus making it impossible to establish a target figure.

COMPLIANCE

Adherence to all internal rules and legal regulations applicable to Pfeiffer Vacuum Technology AG and its subsidiaries by management and employees (compliance) has long been a goal of the Company as well as an inherent part of our Company culture. This is especially expressed in our Code of Conduct, which applies for all employees. The Management Board is fundamentally committed to these tenets in addition to the "zero tolerance" principle. Our Code of Conduct defines, among other things, integrity and lawful conduct as basic standards and is the basis for the daily work of all employees in our Company. The Code of Conduct, which was updated and supplemented in 2018, is also available outside the Company via the Company's website in all languages that are relevant to the Group's employees. In it, options for employees to report possible violations of the law in the Corporate Group are described. These are also open to third parties outside of the Company.

Compliance with legal and internal Company regulations is a comprehensive task for which each area of the Company is fundamentally responsible. Committed employees educate themselves further when required and take part in training in order to recognize and address current developments in their respective areas of responsibility. All determined breaches of compliance will be sanctioned accordingly. With external support, an enhancement and adaptation of the Compliance Management System is currently taking place.

ACCOUNTING AND AUDITING

Pursuant to statutory provisions, the Consolidated Financial Statements of Pfeiffer Vacuum and the Quarterly Financial Reports are prepared in accordance with the current International Financial Reporting Standards (IFRS) as applicable in the European Union.

The Annual Financial Statements of Pfeiffer Vacuum Technology AG as the parent corporation are prepared in accordance with the provisions of the German Commercial Code ("HGB"). These Consolidated Financial Statements were audited pursuant to the resolution of the Annual General Meeting on May 23, 2018 by PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Germany. PricewaterhouseCoopers GmbH also audits the Annual Financial Statements of Pfeiffer Vacuum Technology AG as well as the report on relations with affiliated companies.

It was agreed with the auditors that the Chairman of the Audit Committee shall be immediately informed about any reasons for exclusion or prejudice arising during the audit, unless these are eliminated immediately. The auditor must also immediately report all findings and events of importance to the Supervisory Board that arise during the audit. In addition, the auditor must inform the Supervisory Board and note in the audit if the auditor determines facts during the course of the audit that are not compatible with the Statement of Compliance submitted by the Management and Supervisory Boards pursuant to § 161 of the German Stock Corporation Act ("AktG").

III

CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED STATEMENTS OF INCOME PFEIFFER VACUUM TECHNOLOGY AG

in K€	Note	2018	2017
Net sales	7, 32	659,725	586,962
Cost of sales	8, 15	– 424,517	– 376,945
Gross profit		235,208	**210,017**
Selling and marketing expenses	8	– 68,371	– 63,313
General and administrative expenses	8	– 49,106	– 48,976
Research and development expenses	8	– 28,663	— 27,763
Other operating income	9	11,302	10,345
Other operating expenses	9	– 5,240	– 8,924
Operating profit	32	**95,130**	**71,386**
Financial expenses	10, 33	– 727	– 693
Financial income	10, 13, 33	208	347
Earnings before taxes	24, 32	94,611	**71,040**
Income taxes	24	– 25,732	– 17,192
Net income		**68,879**	**53,848**
Earnings per share (in €):			
Basic	35	6.98	5.46
Diluted	35	6.98	5.46

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME PFEIFFER VACUUM TECHNOLOGY AG

in K€	Note	2018	2017
Net income		**68,879**	53,848
Other comprehensive income			
Amounts to be reclassified to income statement in future periods (if applicable)			
Currency changes	21	4,904	– 13,252
Results from cash flow hedges	21, 33	– 13	588
Related deferred income tax effects	21	4	– 176
		4,895	– 12,840
Amounts not to be reclassified to income statement in future periods			
Valuation of defined benefit plans	21, 25	– 4,125	394
Related deferred income tax effect	21	1,374	– 515
		– 2,751	– 121
Other comprehensive income net of tax		**2,144**	– 12,961
Total comprehensive income net of tax		**71,023**	40,887

CONSOLIDATED BALANCE SHEETS PFEIFFER VACUUM TECHNOLOGY AG

ASSETS

in K€	Note	Dec. 31, 2018	Dec. 31, 2017
ASSETS			
Intangible assets	11	109,460	110,814
Property, plant and equipment	12	126,143	106,949
Investment properties	13	424	448
Other financial assets	14	4,282	3,840
Other assets	14	3,200	—
Deferred tax assets	24	24,895	23,037
Total non-current assets		**268,404**	**245,088**
Inventories	15	133,191	113,384
Trade accounts receivable	16, 33	92,164	80,061
Contract assets	3, 16	298	—
Income tax receivables		3,726	3,159
Prepaid expenses		3,504	2,475
Other financial assets	14	609	—
Other accounts receivable	17	13,884	11,792
Cash and cash equivalents	18, 33	108,380	97,402
Total current assets		**355,756**	**308,273**
Total assets	32	**624,160**	**553,361**

SHAREHOLDERS' EQUITY AND LIABILITIES

in K€	Note	Dec. 31, 2018	Dec. 31, 2017
SHAREHOLDERS' EQUITY AND LIABILITIES			
Share capital	19	25,261	25,261
Additional paid-in capital	19	96,245	96,245
Retained earnings	20	278,891	229,747
Other equity components	21	– 28,172	– 30,316
Equity of Pfeiffer Vacuum Technology AG shareholders		**372,225**	320,937
Financial liabilities	23, 33	60,182	60,248
Provisions for pensions	25	55,638	50,034
Deferred tax liabilities	24	4,638	3,988
Contract liabilities	3, 27	630	—
Total non-current liabilities		**121,088**	114,270
Trade accounts payable	26, 33	38,054	40,814
Customer deposits	3, 27	—	7,678
Contract liabilities	3, 27	18,271	—
Other accounts payable	28	25,740	22,333
Provisions	3, 29	41,626	39,894
Income tax liabilities		7,061	7,354
Financial liabilities	30, 33	95	81
Total current liabilities		**130,847**	118,154
Total shareholders' equity and liabilities		**624,160**	553,361

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY PFEIFFER VACUUM TECHNOLOGY AG

in K€	Note	Share Capital	Additional Paid-in Capital	Retained Earnings	Other Equity Components	Equity of Pfeiffer Vacuum Technology AG Shareholders
Balance as at January 1, 2017		**25,261**	**96,245**	**211,423**	**– 17,355**	**315,574**
Net income		—	—	53,848	—	53,848
Earnings after taxes recorded directly in equity	21, 33	—	—	—	– 12,961	– 12,961
Total comprehensive income		—	—	**53,848**	**– 12,961**	**40,887**
Dividend payment	20	—	—	– 35,524	—	– 35,524
Balance as at December 31, 2017		**25,261**	**96,245**	**229,747**	**– 30,316**	**320,937**
Net income		—	—	68,879	—	68,879
Earnings after taxes recorded directly in equity	21, 33	—	—	—	2,144	2,144
Total comprehensive income		—	—	**68,879**	**2,144**	**71,023**
Dividend payment	20	—	—	– 19,735	—	– 19,735
Balance as at December 31, 2018		**25,261**	**96,245**	**278,891**	**– 28,172**	**372,225**

CONSOLIDATED STATEMENTS OF CASH FLOWS PFEIFFER VACUUM TECHNOLOGY AG

CASH FLOW FROM OPERATING ACTIVITIES

in K€	Note	2018	2017
Cash flow from operating activities:			
Earnings before taxes	32	94,611	71,040
Adjustment for financial income/financial expenses		519	346
Financial income received		177	350
Financial expenses paid		– 900	– 1,053
Income taxes paid		– 22,703	– 17,441
Depreciation/amortization	11, 12, 13, 32	18,591	20,824
Gain/loss from disposals of assets		– 1,532	– 31
Changes in allowances for doubtful accounts	16	590	528
Changes in inventory reserves	15	1,467	2,702
Other non-cash income and expenses		6	116
Effects of changes in assets and liabilities:			
Inventories		– 20,035	– 15,248
Receivables and other assets		– 19,329	– 7,005
Provisions, including pensions, and income tax liabilities		– 425	5,983
Payables		11,510	10,286
Net cash provided by operating activities		**62,547**	71,397

CASH FLOW FROM INVESTING ACTIVITIES | CASH FLOW FROM FINANCING ACTIVITIES

in K€	Note	2018	2017
Cash flow from investing activities:			
Payments for acquisitions	6	—	– 74,594
Capital expenditures	11, 12, 13, 32	– 33,669	– 27,678
Proceeds from disposals of fixed assets		2,177	249
Net cash used in investing activities		**– 31,492**	– 102,023
Cash flow from financing activities:			
Proceeds from increase of financial liabilities	33	23	70,000
Dividend payments	20	– 19,735	– 35,524
Redemptions of financial liabilities	33	– 87	– 15,182
Net cash provided by/used in financing activities		**– 19,799**	19,294
Effects of foreign exchange rate changes on cash and cash equivalents		– 278	– 1,298
Net changes in cash and cash equivalents		**10,978**	– 12,630
Cash and cash equivalents at beginning of period		97,402	110,032
Cash and cash equivalents at end of period	18	**108,380**	97,402

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

REMARKS RELATING TO THE COMPANY AND ITS ACCOUNTING AND VALUATION METHODS

1. General remarks relating to the Company

The parent company within the Pfeiffer Vacuum Group ("the Company" or "Pfeiffer Vacuum") is Pfeiffer Vacuum Technology AG, domiciled at Berliner Strasse 43, 35614 Asslar, Germany. Pfeiffer Vacuum Technology AG is a stock corporation organized under German law and recorded in the Register of Companies at the Local Court of Wetzlar under Number HRB 44. The Company is listed in the Prime Standard of Deutsche Börse Stock Exchange in Frankfurt am Main, Germany, where it is included in the TecDAX index.

Pfeiffer Vacuum is one of the leading full-line vacuum technology manufacturers, offering custom solutions for a wide range of needs in connection with the generation, control, and measurement of vacuum. The products developed and manufactured at the Company's production facilities in Asslar and Göttingen, Germany, as well as in Annecy, France and Asan, Republic of Korea, Indianapolis and Yreka in the United States, as well as Ho-Chi-Minh-City, Vietnam, include turbopumps, a range of backing pumps, such as rotary vane, Roots and dry pumps, complete pumping stations, as well as custom vacuum systems, leak detectors and components.

Pfeiffer Vacuum markets and distributes its products through its own network of sales companies and independent marketing agents. Moreover, there are service support centers in all major industrial locations throughout the world. The Company's primary markets are located in Europe, the United States, and Asia.

2. Basis for preparing Consolidated Financial Statements

Statement of compliance with IFRS

The Consolidated Financial Statements of Pfeiffer Vacuum Technology AG for the fiscal year from January 1 to December 31, 2018, have been prepared in accordance with International Financial Reporting Standards (IFRS) and the interpretations of the IFRS Interpretations Committee (IFRS IC) as applicable in the European Union (EU). This includes the International Accounting Standards (IAS), which continue to retain their validity, the interpretations of the Standing Interpretations Committee (SIC) and the interpretations of the International Financial Reporting Interpretations Committee (IFRIC). Those standards that have been published but whose application is not yet mandatory have not been adopted at an earlier stage. The Notes to the Consolidated Financial Statements additionally include the information required by § 315e, Sub-Para. 1, of the German Commercial Code ("HGB").

Basic valuation principles

The Consolidated Financial Statements were prepared on the basis of historical acquisition and production costs. This does not include derivative financial instruments and plan assets in connection with defined benefit plans, which are measured at fair value. Pfeiffer Vacuum prepares its Consolidated Financial Statements in euros (€). Unless otherwise indicated, the presentation is in thousands of euros (K€). For mathematical reasons, the numbers presented in the Consolidated Financial Statements may include rounding differences.

Consolidated companies and principles of consolidation

All companies which Pfeiffer Vacuum directly or indirectly controls are consolidated. The Company is considered to control an entity if it is exposed to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Inclusion in the Consolidated Financial Statements is made on the basis of individual financial statements prepared in accordance with consistent accounting and valuation principles. The balance sheet date of the individual financial statements of the included companies is the same as the balance sheet date of the Consolidated Financial Statements.

There were no investments in joint ventures or joint operations as of December 31, 2018, or in previous years. Nor were there any investments in unconsolidated structured entities.

Consolidation of investments is effected at the acquisition date in accordance with the acquisition method. In this connection, all assets (including, if applicable, intangible assets to be recognized additionally) and liabilities are first valued at their attributable fair values. The acquisition costs of the equity investment, i.e. the total compensation transferred, valued in accordance with attributable fair values, are then offset against the acquired, newly valued shareholders' equity. Any resulting positive difference is recognized as goodwill and written down in future periods only in the event of an impairment (impairment-only approach).

All intercompany receivables and liabilities, gains and losses, revenues and expenses are eliminated in connection with the consolidation process.

Foreign currency translation

The annual financial statements of subsidiaries domiciled outside the European Currency Union have been translated into euros (€) in accordance with IAS 21, "The Effects of Changes in Foreign Exchange Rates." Each company within the Corporate Group stipulates its own functional currency. The functional currency of the subsidiaries is the respective local currency. When translating financial statements presented in foreign functional currencies, year-end exchange rates are applied to assets and liabilities, while average annual exchange rates are applied to income statement accounts. The resulting translation adjustments are recorded in other equity components.

In the consolidated financial statements, foreign-currency transaction gains and losses from regular operations of consolidated companies are recorded as other operating income and expenses in the income statement.

3. Application of amended or new standards

The accounting and valuation principles used are essentially the same as those used the year before. In variance thereto, in 2018 the Company has applied the following new or amended IASB announcements that have been endorsed by the European Union (EU) for the first time, as their application was mandatory in fiscal 2018.

The first-time application of these IASB pronouncements had the following impacts on the presentation of Pfeiffer Vacuum's Consolidated Financial Statements.

First-time application of IFRS 9

On July 24, 2014, the IASB issued the final version of IFRS 9 "Financial Instruments". With its adoption, IFRS 9 replaces the previous provisions of IAS 39 "Financial Instruments: Recognition and Measurement". IFRS 9 introduces a uniform approach to the classification and measurement of financial assets. As a basis, the standard refers to the cash flow characteristics and the business model according to which they are managed. Upon initial recognition, financial assets need to be classified in the categories "fair value through profit or loss" or "fair value through other comprehensive income" or "amortized cost". It also provides for a new impairment model based on expected credit defaults. IFRS 9 also contains new rules on the application of hedge accounting to better present an entity's risk management activities,

NEW ANNOUNCEMENTS

	Issued by IASB/IFRS IC	Applicability[1]
Amendments to IAS 40: Transfers of Investment Property	December 2016	January 1, 2018
Amendments to IFRS 2: Classification and Measurement of Share-based Payment Transactions	June 2016	January 1, 2018
Amendments to IFRS 4: Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts	September 2016	January 1, 2018
Annual Improvements to IFRSs 2014 – 2016 Cycle	December 2016	January 1, 2018
IFRS 9 Financial Instruments	July 2014	January 1, 2018
IFRS 15 Revenue from Contracts with Customers (including amendments to IFRS 15: Effective date of IFRS 15)	May 2014	January 1, 2018
Clarifications to IFRS 15 Revenue from Contracts with Customers	April 2016	January 1, 2018
IFRIC Interpretation 22 Foreign Currency Transactions and Advance Consideration	December 2016	January 1, 2018

[1] Fiscal years beginning on or after the indicated date according to EU regulation

particularly with regard to managing non-financial risks. The classification of financial liabilities has not changed compared to IAS 39. With respect to financial liabilities, the amendments to IFRS 9 do not have any impact on the Pfeiffer Vacuum Group.

The new rules for the recognition of impairment losses contained in IFRS 9 will in future focus on expected loss models instead of incurred loss models. In contrast to the incurred loss model, the expected loss model takes expected losses into account without the existence of specific loss indicators. Accordingly, IFRS 9 specifies that a loss allowance for expected payment defaults must already now be set up. IFRS 9 provides for a 3-step model for determining the extent of loss allowance. Accordingly, from the time of initial recognition in principle the 12-month loss expectations are to be considered, and in the event of a significant deterioration in credit risk the expected total losses. In addition to the general approach for measuring expected losses, IFRS 9 permits a simplified approach for trade accounts receivable, lease receivables and contract assets as defined by IFRS 15. In the simplified approach, a loss allowance for possible defaults must be set up in the amount of the expected losses over the remaining term.

The application of the simplified approach model to trade account receivables and contract assets in accordance with IFRS 15 did not have any material impact on Pfeiffer Vacuum. There were also no impairment losses on cash and cash equivalents and other financial assets.

Instead of applying the hedge accounting provisions of IFRS 9, Pfeiffer Vacuum is voluntarily exercising its option and continues to apply the corresponding provisions of IAS 39.

Basically, the first-time application of IFRS 9 must be applied retrospectively.

The following overview shows a reconciliation of the financial assets and liabilities from the IAS 39 measurement categories to the IFRS 9 measurement categories as of January 1, 2018:

The book values equal their respective fair values.

The reconciliation of financial assets and liabilities from the IAS 39 measurement categories to the IFRS 9 measurement categories as of December 31, 2017/January 1, 2018 did not result in any measurement adjustments.

RECONCILIATION OF FINANCIAL INSTRUMENTS BY VALUATION CATEGORY (IAS 39/IFRS 9) AS AT JANUARY 1, 2018

in K€	Measurement category as per IAS 39	Carrying amount as at Dec. 31, 2017	Measurement category as per IFRS 9	**Carrying amount as at Jan. 1, 2018**
Assets				
Cash and cash equivalents	LaR	97,402	AC	97,402
Trade accounts receivable	LaR	80,061	AC	80,061
Other financial assets	LaR	3,840	AC	3,840
Derivative financial instruments (hedges)	n.a.	—	FVOCI	—
Liabilities				
Trade accounts payable	FLAC	40,814	AC	40,814
Financial liabilities	FLAC	60,329	AC	60,329
Derivative financial instruments (incl. hedges)	n.a.	—	FVOCI	—
Derivative financial instruments (excl. hedges)	n.a.	6	FVPL	6

LaR = Loans and Receivables; FLAC = Financial Liabilities Measured at Amortized Cost;
AC = Amortized Costs; FVOCI = Fair Value through other Comprehensive Income;
FVPL = Fair Value through Profit or Loss

First-time application of IFRS 15

IFRS 15 "Revenue from Contracts with Customers" was published by the IASB in May 2014 and endorsed by the EU in October 2016. The "Clarifications to IFRS 15 Revenue from Contracts with Customers" published by the IASB in April 2016 were transformed into EU law in November 2017. The new standard IFRS 15 replaced IAS 11 "Construction Contracts", IAS 18 "Revenue" and the related interpretations.

IFRS 15 provides for a uniform, principle-based, five-level model for the calculation and recognition of revenues from contracts with customers. The core principle of the standard is that revenue should be recognized when control of goods or services is transferred to the customer.

With respect to the first-time application of the standard, Pfeiffer Vacuum chose the modified retrospective method.

The first-time application of IFRS 15 in fiscal 2018 had the following impacts on the presentation of Pfeiffer Vacuum's Consolidated Financial Statements:

- In the case of certain product sales with extended warranty terms, this separate performance obligation leads to temporarily delayed revenue recognition. The result of the associated deferred income had no material impact on the profitability, financial position and liquidity of Pfeiffer Vacuum's Consolidated Financial Statements in the current reporting period. The mandatory first-time application did not lead to any adjustment effects on equity as of January 1, 2018, as the sales revenues of the relevant customer contracts were either already fully recognized at that date or were only to be fully recognized after that date. Pfeiffer Vacuum made use of a simplification option offered by IFRS 15 for this purpose.

- Revenues from contracts with vacuum solutions are recognized over a certain period of time based on the stage of completion, based on the ratio of costs already incurred at the balance sheet date to the estimated total costs (input-based method).

- When the contractual obligations of a party to a contract have been fulfilled, the entity shall present that transaction in accordance with IFRS 15. For this purpose, the items "contract assets" and "contract liabilities" were newly included in the Consolidated Balance Sheets. A contract asset is the right to receive consideration in exchange for goods or services that have been transferred to the customer. A contract liability is an obligation to transfer goods or services to a customer for which the customer has paid consideration.

- Payments made by customers prior to the transfer of goods or the provision of services to the customer are recognized as contract liabilities in the Consolidated Balance Sheet. This eliminates the item "customer deposits".

The following overview summarizes the disclosure and valuation differences in the balance sheet and income statement as of December 31, 2018 that would have arisen if IAS 18 "Revenue" which was applicable only December 31, was still applied in 2018:

RECONCILIATION OF ADJUSTMENT EFFECTS OF IFRS 15 AS OF DECEMBER 31, 2018

in K€	Dec. 31, 2018 before adjustment	IFRS 15 adjustment	Impact on deferred tax assets	**Dec. 31, 2018 after adjustment**
Consolidated Balance Sheets				
Assets				
Inventories[1]	134,323	– 1,132	—	133,191
Contract assets[2]	—	298	—	298
Deferred tax assets[3]	24,769	—	126	24,895
Other long-term and short-term assets	465,776	—	—	465,776
Total assets	624,868	– 834	126	**624,160**
Shareholders' equity and liabilities				
Retained earnings	279,212	– 388	67	278,891
Other equity	93,334	—	—	93,334
Total equity	372,546	– 388	67	**372,225**
Customer deposits[4]	17,736	– 17,736	—	—
Contract liabilities[5]	—	18,901	—	18,901
Other liabilities[6]	25,572	168	—	25,740
Provisions[7]	43,405	– 1,779	—	41,626
Deferred tax liabilities[3]	4,579	—	59	4,638
Other long-term and short-term liabilities	161,030	—	—	161,030
Total shareholders' equity and liabilities	624,868	– 834	126	**624,160**
Consolidated Statements of Income				
Net sales[8]	660,325	– 600	—	659,725
Cost of sales[8]	– 424,729	212	—	– 424,517
Gross profit	235,596	– 388	—	**235,208**
Operating expenses	– 140,078	—	—	– 140,078
Operating profit	95,518	– 388	—	**95,130**
Financial income	– 519	—	—	– 519
Earnings before taxes	94,999	– 388	—	**94,611**
Income taxes[3]	– 25,799	—	67	– 25,732
Net income	69,200	– 388	67	**68,879**
Earnings per share (in €)	7.01	– 0.04	0.01	**6.98**

[1] The difference in inventories corresponds to the proportion of cost of sales attributable to the period-related revenue recognition of certain vacuum solutions.
[2] Contract assets represent contractual entitlements to receive payments from customers for whom Pfeiffer Vacuum's contractual performance obligations under IFRS 15 have been met.
[3] The differences in deferred tax assets and liabilities relate to the tax effects on the recognition of contract assets and liabilities.
[4] The adjustment of customer deposits received is mainly due to the new disclosure requirement of IFRS 15 to record them under the contract liabilities item of the balance sheet. In addition, contract assets are reduced by customer payments that have already been made.
[5] The contractual liabilities essentially represent payments from customers for the products to be delivered and services to be rendered. In addition, the adjustment amount relates to performance obligations in connection with extended warranty promises for which the customer has already paid a consideration.
[6] The adjustment is to be seen together with the reclassification of deferred sales lines to contract liabilities. In addition, further deferrals for variable consideration that have formerly been recorded under provisions are shown here.
[7] Warranty provisions for the expected amounts for claims under product warranties were formed for sales revenues from the sale of vacuum products and the provision of services as of the balance sheet date and recorded under cost of sales. In accordance with IFRS 15, warranty promises that go beyond the statutory warranty promises („assurance-type warranties") for which the customer has already paid a consideration are deferred as separate performance obligations under contract liabilities to reduce sales.
[8] The adjustments to revenues and cost of sales result from the aforementioned adjustments following the new revenue recognition over time according to IFRS 15 and the adjustment of sales revenues due to not yet fulfilled performance obligations (warranty promises).

The balance sheet item "Customer deposits" (K€ 7,678) shown as at December 31, 2017 was reclassified to "Contract liabilities" as at January 1, 2018 due to the first time application of IFRS 15. In addition, the accrued variable consideration elements formerly shown under "Provisions" (K€ 908) was reclassified to "Other liabilities".

The first-time application of the other IASB pronouncements did not have any impact on the profitability, financial position and liquidity of Pfeiffer Vacuum's Consolidated Financial Statements.

The following IASB announcements were endorsed by the EU as European law, but their application was not mandatory in fiscal 2018. Pfeiffer Vacuum will only start applying these pronouncements from fiscal years in which their application is mandatory within the EU:

NEW ANNOUNCEMENTS

	Issued by IASB/IFRS IC	Applicability[1]
IFRS 16 Leases	January 2016	January 1, 2019
IFRIC Interpretation 23 Uncertainty over Income Tax Treatments	June 2017	January 1, 2019
Amendments to IFRS 9 Prepayment Features with Negative Compensation	October 2017	January 1, 2019
Amendments to IAS 28 Long-term Interests in Associates and Joint Ventures	October 2017	January 1, 2019

[1] Fiscal years beginning on or after the indicated date according to EU regulation

"IFRIC Interpretation 23", the "Amendments to IFRS 9" and the "Amendments to IAS 28" are not relevant for Pfeiffer Vacuum.

IFRS 16 "Leases"

In January 2016 the IASB published the accounting standard IFRS 16 "Leases", which was endorsed by the EU on November 9, 2017. IFRS 16 replaces the existing rules on leases, including IAS 17 "Leases", IFRIC 4 "Determining whether an Arrangement Contains a Lease", SIC 15" Operating Leases" and SIC 27 "Evaluating the Substance of Transactions in the Legal Form of a Lease".

This standard is mandatorily applicable for fiscal years beginning on or after January 1, 2019. An early adoption is permitted in case IFRS 15 is adopted before or at the same time as the initial adoption of IFRS 16. Pfeiffer Vacuum has not adopted this standard early.

IFRS 16 stipulates that all leases and the associated contractual rights and obligations must generally be shown in the lessee's balance sheet. A lessee recognizes a lease liability at the present value of the lease payments. The right to use the leased asset is generally measured at an amount equal to the lease liability plus initial direct costs. There are exceptions for, amongst others, short-term leases and leases involving low-value assets. Pfeiffer Vacuum does not make use of the exemption provisions for low-value assets or for short-term leases with respect to these options. Furthermore, the lessee can decide whether to subdivide the payment into leasing and non-leasing components. Here, Pfeiffer Vacuum decides not to subdivide the payment, but to treat the entire payment as a leasing component.

Pfeiffer Vacuum will apply IFRS 16 for the first time as of January 1, 2019, applying the modified retrospective approach. The comparative information for the 2018 fiscal year will therefore not be adjusted in the 2019 fiscal year.

On transition to IFRS 16, the Group may choose whether to:

- apply the definition in IFRS 16 for a lease to all its contracts;

  or to

- make use of an exception and therefore not reassess whether the contract is, or contains, a lease, if this was already analyzed and classified according to IAS 17.

The Group will make use of the exemption to maintain the definition of a lease on transition. This means that the Group will apply IFRS 16 to all contracts entered into before January 1, 2019 and identified as leases in accordance with IAS 17 and IFRIC 4.

In addition, Pfeiffer Vacuum has decided not to take initial costs into account when measuring the right of use at the time of first-time application.

For leases that expire within 12 months of the date of initial application, Pfeiffer Vacuum will report the costs associated with these leases as short-term lease expenses in fiscal 2019.

Lessor accounting is similar to the current standard – which means that lessors continue to classify leases as finance or operating leases.

The Group has largely completed its assessment of the potential impact on its Consolidated Financial Statements. This analysis as part of the Group-wide first-time adoption project has identified the following categories of leases for which the transition to IFRS 16 as of January 1, 2019 results in the recognition of leases previously classified as operating leases as leases defined by the new standard: land and buildings, vehicles and other leased assets. As a result of the first-time recognition of rights of use and leasing liabilities in accordance with IFRS 16, the balance sheet total will increase by 2–3 % according to provisional calculations. A significant effect on equity is not expected. Based on the leases existing as of January 1, 2019, the operating profit is not expected to change significantly. Moreover, there will also result a slight improvement in cash flow from operating activities and a corresponding reduction in cash flow from financing activities.

In addition, the nature of the expenses associated with these leases will change as IFRS 16 replaces the straight-line expenses for operating leases with a depreciation expense for rights of use and interest expenses for lease liabilities.

The following announcements were issued by the IASB or the IFRS IC but not yet endorsed by the EU:

NEW ANNOUNCEMENTS

	Issued by IASB/IFRS IC	Applicability
IFRS 17 Insurance Contracts	Mai 2017	January 1, 2021
Amendments to IAS 19 Plan Amendment, Curtailment or Settlement	February 2018	January 1, 2019
Annual Improvements to IFRSs 2015 – 2017 Cycle	December 2017	January 1, 2019
Amendments to References to the Conceptual Framework in IFRS Standards	March 2018	January 1, 2020
Amendment to IFRS 3: Definition of a Business	October 2018	January 1, 2020
Amendments to IAS 1 and IAS 8: Definition of Material	October 2018	January 1, 2020

Pfeiffer Vacuum intends apply the announcements mentioned above as of the effective date of mandatory application within the EU. The impact on the Consolidated Financial Statements resulting from the application of these not yet endorsed pronouncements are currently being analyzed.

4. Accounting and valuation methods

Income recognition

Revenue is recorded when control over the distinct goods or services is transferred to the customer, i.e. when the customer has the ability to control the use of the transferred goods or services and substantially obtains all of the benefits that remain from them. The prerequisite for this is that a contract with enforceable rights and obligations exists and that, among other things, it is probable that the consideration will be received, taking into account the creditworthiness of the customer. Most contracts with customers are fixed-price agreements in which Pfeiffer Vacuum acts as principal. Sales revenues correspond to the transaction prices according to the contracts with customers to which the Group is expected to be entitled.

In the case of individual contracts with variable consideration included in the transaction price, the amount of the variable consideration is determined either according to the expected value method or with the most probable amount and recorded as a reduction in sales revenue. Basically, transaction prices do not include any financing components, as the expected period between the transfer of the goods or services to the customer and the payment date does not exceed twelve months. If a contract includes several distinct performance obligations, the transaction price is allocated to the performance obligations on the basis of the relative individual selling prices. If individual selling prices are not directly observable, they are estimated on the basis of the "expected-cost-plus-a-margin" approach. Revenues within the meaning of IFRS 15 are recognized at Pfeiffer Vacuum either at a specific point in time or over a specific period of time, with revenue recognition based on the point in time prevailing.

Revenues from the sale of vacuum products are recognized at the time when control is transferred to the customer, generally upon delivery of the goods. Revenues from contracts with customer-specific vacuum solutions are recognized over a certain period of time based on the stage of completion, based on the ratio of costs already incurred at the balance sheet date to the estimated total costs (input-based method). In connection with the sale of vacuum products, Pfeiffer Vacuum in some cases offers extended warranty terms ("service & process-type warranties")that go beyond the statutory warranty obligations ("assurance-type warranties"). Performance obligations in connection with extended warranty terms, for which the customer has already paid a consideration, are recognized as contract liabilities and recognized over the period in which the services are rendered based on the time elapsed.

Revenues from the rendering of services are recognized after execution. They include invoiced working hours of service staff, spare parts and replacement parts. Interest income is realized when the interest has accrued. Rental income from investment property is recognized on a straight-line basis over the term of the contracts.

Cost of Sales

Cost of sales include the manufacturing costs for the products sold as well as the costs for the services rendered. This includes all directly attributable material and production costs as well as indirect costs including depreciation/amortization on production buildings and machines. In addition, freight costs, expenses for inventory valuation, and warranty expenses are included in here. Based on historical experience, warranty provisions for recognized revenues are recorded as of year-end.

Research and development expenses

Research and development costs are generally expensed as incurred. Development costs are capitalized, if the capitalization prerequisites in IAS 38, "Intangible Assets," are fully satisfied. In fiscal years 2018 and 2017, research and development costs were not capitalized.

Property, plant and equipment and intangible assets

Property, plant and equipment and intangible assets are stated at cost and depreciated/amortized on a straight-line basis over the customary useful lives of the assets. At the close of each fiscal year, the useful lives and depreciation/amortization methods, as well as the residual values in the case of property, plant and equipment, are reviewed and adjusted where necessary. The following useful lives are assumed:

ESTIMATED USEFUL LIFE

Production halls, production and administration buildings and similar facilities	20–40 years
Machinery and equipment (including IT equipment)	3–15 years
Intangible assets[1]	2–5 years

[1] With the exception of goodwill and a trademark recognized in connection with a purchase price allocation, there are no intangible assets with indefinite useful lives

Intangible assets recognized in connection with acquisitions, i.e. trademark rights or customer base, may have different, longer estimated useful lives of up to 20 years. Determination is made on an individual basis.

Scheduled depreciation and amortization are allocated to the expense lines in the income statement on the basis of the input involved. Repair and maintenance costs are expensed as incurred.

The Company reviews long-lived assets for impairment whenever events or changes in circumstances suggest that the carrying amount of an asset may not be recoverable. Should impairment indicators exist, the Company performs the analyses required under IAS 36, "Impairment of Assets," with the carrying amount of the asset being compared to the recoverable amount. The recoverable amount of an asset or a cash-generating unit is the greater of the fair value less its selling costs and value in use. The resulting amount must be determined for each individual asset, unless an asset generates cash flows that are dependent upon those from other assets or other asset groups. Should the carrying amount of an asset be higher than its recoverable amount, the asset is viewed as being impaired and is written down to its recoverable amount. To determine the value in use of an asset, the anticipated future cash flows are discounted to their cash value, taking into consideration a before-tax discount rate that reflects current market expectations with respect to the interest rate effect and the specific risks of the asset in question. An appropriate valuation model is employed to determine the fair value less selling costs. This model is based on valuation multiples and other available indicators for the fair value. Any required reversals of impairment losses are recorded in future-period income statements up to the amount of the impairment loss reversal limit. This limit is determined by the amount that would have resulted at the close of the respective fiscal year given scheduled depreciation of the asset.

At least once a year, the Company reviews goodwill for possible impairments. For the purpose of the impairment test, goodwill acquired within the context of a corporate merger is allocated at the acquisition date to those cash generating units of the Corporate Group that can be expected to be able to benefit from the corporate merger. This review is always made whenever events or changes in circumstances suggest that the carrying amount may not be recoverable. In this case, the above described process for impairments under IAS 36, "Impairment of Assets," is applied. Any resulting impairment loss is recorded in the income statement. A reversal of goodwill impairment losses in future periods is not permissible.

A fixed or intangible asset is derecognized either at the time of disposal or at such time as no economic benefit can any longer be expected from the further utilization or sale of the asset. Gains and losses from disposals of assets are determined and recorded in the income statement on the basis of the difference between selling costs and carrying amount, less any directly attributable selling costs, where applicable

Investment properties

Real estate properties are allocated to the portfolio of investment properties if they are held for the purpose of generating rental income. They are stated at cost and depreciated on a straight-line basis over their estimated useful lives (cost model). Assessment of their residual values, useful lifes and depreciation methods, as well as any impairment losses, is performed analogously to the procedure described in connection with property, plant and equipment. Investment properties are derecognized upon disposal or when they are no longer being permanently used and they are no longer expected to produce any further future economic benefit.

Financial instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or an equity instrument of another entity. Accounting for financial instruments in the case of usual and customary purchase or sale is performed on the settlement date, i.e. the day on which the asset is delivered. According to IFRS 9, "Financial Instruments" financial instruments are allocated to the following categories upon initial recognition:

- „Fair value through profit or loss"
- "Fair value through other comprehensive income"
- "Amortized cost"

At the time of recognition accounts receivable, in particular trade accounts receivable and contract assets, are recorded with the amount of unconditional consideration and subsequently measured at amortized cost. Receivables generally do not contain any significant financing components. If they contain significant financing components, they must instead be recognized at fair value. A contract asset is the right to receive consideration in exchange for goods or services that have been transferred to the customer. Allowances on contract assets and receivables for credit risks are made on the basis of the expected loss model. Pfeiffer Vacuum applies a simplified approach to measure expected losses pursuant to IFRS 9, under which a provision for possible loan losses must be recognized in the amount of the expected losses over the remaining term of the asset. A reversal of an impairment loss is recognized in profit or loss up to a maximum of the amortized cost. Receivables are derecognized as soon as they become uncollectible.

The Company uses derivatives only to manage foreign currency exchange rate risks. Instead of applying the hedge accounting provisions of IFRS 9, Pfeiffer Vacuum is voluntarily exercising its option and continues to apply the corresponding provisions of IAS 39. Approximately 53 % of Group sales are invoiced in foreign currencies (non-euro, predominantly US dollars) (previous year: 56 %). The Company enters into forward exchange and option transactions to hedge its future sales invoiced in foreign currencies against exchange rate fluctuations. Derivative financial instruments are acquired exclusively for this purpose. Pfeiffer Vacuum does not engage in speculative hedging transactions. Derivative financial instruments employed for hedging purposes are recorded at their fair values both at the time they are first recorded as well as in subsequent periods. Derivative financial instruments are recorded as assets if their fair value is positive and as liabilities if their fair value is negative. Changes in the fair value of these derivatives are recorded in equity without any impact on the income statement if the hedging is classified as a cash flow hedge according to IAS 39 and is effective. The derivative is reclassified into other operating income and expenses as foreign exchange gains/losses at the time of realization of the underlying transaction that has been hedged. If derivatives were purchased for hedging purposes but do not formally qualify for hedging under IAS 39, they are recorded at fair value through profit and loss. The fair values of derivatives are determined on the balance sheet date using current reference quotations and taking into account forward premiums and discounts. Please refer to NOTE 33 for further information relating to financial instruments.

Trade accounts payable are financial liabilities and are measured at fair value at the time of first recognition and subsequently at amortized cost. Accordingly, they are recognized at the higher of nominal value or repayment amount, including any value-added tax, at the balance sheet date.

Bank loans are also categorized as financial liabilities and are measured at fair value upon first recognition and in future periods at amortized costs using the effective interest method. This takes into consideration all components of the effective interest rate. Interest income and expenses resulting from the application of the effective interest rate method are shown under financial results.

Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, bank balances, and all highly liquid bank investments having original maturities of three months or less. Cash and cash equivalents are defined accordingly in the consolidated cash flow statements. Cash and cash equivalents are also subject to the expected loss model according to IFRS 9. Due to the short investment period, this line item is only subject to minor value fluctuations.

Inventories

Inventories are valued at the lower of net realizable value and acquisition or manufacturing costs. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated selling costs. Acquisition or manufacturing costs comprise all costs for acquisition or manufacturing as well as all costs incurred for bringing the inventories to their current place and to the current status. With regard to work in process and finished products, the manufacturing costs include besides directly attributable material and production costs also production related indirect costs. Removals from inventory are determined on a weighted average cost basis. Interests on borrowed capital are not considered as part of acquisition or manufacturing costs for inventories. Valuation adjustments on excess inventories are determined on the basis of internal procedures in accordance with the ratio between inventory turnover and future sales or usage. Excess inventories are stocks of individual inventory items that exceed anticipated sales or usage. Management utilizes its judgement in forecasting sales or usage.

Other accounts receivable and other assets

Other accounts receivable and other assets are recorded at amortized cost and less allowances, where applicable. Non-current receivables and assets are valued using the effective interest method.

Provisions

Provisions are formed when the Corporate Group presently has a legal or constructive outside obligation as a result of a past event and it is likely that settlement of the obligation will lead to an outflow of economic resources and the amount of the obligation can be reliably determined. The valuation is made on the basis of the best estimate of the extent of the obligation.

Pensions

Valuation of pension obligations under defined benefit plans is based upon the projected unit credit method in accordance with IAS 19 "Employee Benefits". Actuarial gains and losses from changes in the amount of either the defined benefit obligation (under pension plans), the actuarial present value of earned entitlements (under other plans) as well as those variances between actual returns and returns calculated with the discount rate or from changes in other actuarial assumptions are recorded directly in the other equity components. The pension provision thus shows the net benefit obligation resulting from the difference of the defined benefit obligation and the plan assets measured at fair value. Additionally, the return on plan assets is considered with the discount rate. The accounting for obligations under defined benefit plans is based upon actuarial reports calculated as per the close of the fiscal year. The existing pension plans are detailed in NOTE 25.

Expenses for defined contribution plans are recorded as expense in the income statement when the premium obligation is incurred. Provisions are formed only if the payment is not made in the year the premium was incurred.

Contract liabilities and other accounts payable

Contract liabilities and other liabilities are measured at fair value upon first time recognition. Subsequent measurement is at amortized cost. A contract liability is an obligation to transfer goods or services to a customer for which the customer has paid consideration. Thus, they are recorded at their notational value or at their higher redemption amount at the close of the fiscal year, including any value added tax.

Income taxes

Current income taxes are stated as a liability to the extent to which they have not yet been paid. General tax risks within the Group are additionally considered. Should the amounts already paid for income taxes exceed the amount owed, the difference is stated as an asset. Calculation of the amount is based upon the tax rates and tax legislation applicable at the close of the fiscal year.

Under IAS 12, "Income Taxes," deferred tax assets and liabilities are formed in the consolidated and taxation financial statements for temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases or for unused tax loss carry-forwards (liability method). In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. In making this assessment, management considers the scheduled reversal of temporary differences, projected future taxable income, and tax planning strategies. Valuation of deferred tax assets and liabilities is performed using the local tax rates expected to be in effect at the time of realization of the asset or satisfaction of the liability, with the tax rates applicable at the close of the fiscal year being employed. The effects of changes in tax laws are recognized in the results of operations in the period in which the new tax rates go into effect. Deferred taxes that relate to line items recorded directly under shareholders' equity are recorded directly under equity and not in the income statement. An adjustment is recorded for deferred tax assets if it is unlikely that future tax advantages will be realized. Deferred tax assets and liabilities are offset if the entitlements and obligations relate to one and the same tax authority.

Leases

In accordance with IAS 17, "Leases," leasing contracts are classified as either finance or operating leases. Pfeiffer Vacuum is only acting as a lessee in this regard. Assets that are subject to operating leases are not capitalized. Lease payments are charged to income statement in the year they are incurred.

Under a finance lease, substantially all of the risks and rewards related to the leased asset are transferred. Assets that are subject to a finance lease are recorded at the present value of the minimum lease payments, with a leasing liability being recorded in the same amount. The periodic lease payments are divided into principal and interest components. While the interest component is recorded as an interest expense, the principal component reduces the outstanding leasing liability. Assets recognized are either depreciated over the term of the leasing agreement or over the estimated useful life of the respective asset.

Government grants

Government grants which compensate the Group for expenses (expense subsidies) are recorded in the income statement in other operating income in the same period the underlying expenses are incurred.

Determination of fair value

IFRS 13 "Fair Value Measurement" includes uniform regulations for fair value measurement and rules the determination of fair value in cases where other standards allow or require measurement at fair value. Pfeiffer Vacuum Group did not apply any fair value measurement options.

Use of estimates

The process of preparing financial statements requires the use of estimates and assumptions on the part of the management. These estimates are based upon management's historical experience, are verified regularly, and adjusted if necessary. Certain of the Company's accounting policies are considered critical, as they can have a major impact on the profitability, financial position, and liquidity of the Corporate Group and necessitate significant or complex judgement on the part of management. These estimates and assumptions could differ from the actual results. As of December 31, 2018, based on current estimate, no judgement uncertainties existed that could lead to the significant risk of the need for a material adjustment of book values in the 2019 fiscal year.

Material forward-looking estimates and assumptions exist, among others, in estimating the cash flows in connection with the good-will impairment test, with regard to the formation of pension and warranty provisions, in forecasting the useful lives of fixed assets, in determining the fair values of assets identified and liabilities assumed in connection with acquisitions, in the determination of individual selling prices within the meaning of IFRS 15 that are not directly observable, or in connection with deferred tax assets. The major assumptions are detailed in the Notes relating to the individual line items of the balance sheet or in the accounting principles. With regard to the assumptions the goodwill impairment test is based on, please refer to NOTE 11. The parameters underlying the pension accounting are detailed in NOTE 25. Information concerning the estimated useful life of tangible and intangible assets is included in NOTE 4, section "Property, plant and equipment, and intangible assets". With regard to sales revenues please refer to NOTE 4, section "Income recognition" and with regard to the composition of sales revenues to NOTE 7. Further details for provisions are described in NOTE 29 and for deferred tax assets in NOTE 24.

NOTES TO THE SCOPE OF CONSOLIDATION

5. Composition of consolidated companies

In addition to Pfeiffer Vacuum Technology AG, three German and 28 foreign subsidiaries are fully consolidated in the Company's Consolidated Financial Statements as at December 31, 2018 (Dec. 31, 2017: three German and 28 foreign subsidiaries).

PFEIFFER VACUUM GROUP AS AT DECEMBER 31, 2018

in %	Location	Holding
Pfeiffer Vacuum Technology AG	Germany	
Pfeiffer Vacuum GmbH	Germany	100.0
Pfeiffer Vacuum Austria GmbH	Austria	100.0
Pfeiffer Vacuum (Schweiz) AG	Switzerland	99.4
Pfeiffer Vacuum (Shanghai) Co., Ltd.	China	100.0
Pfeiffer Vacuum (India) Private Ltd.	India	27.0[1]
Pfeiffer Vacuum Ltd.	Great Britain	100.0
Pfeiffer Vacuum Scandinavia AB	Sweden	100.0
Pfeiffer Vacuum Singapore Pte. Ltd.	Singapore	100.0
Pfeiffer Vacuum Taiwan Corporation Ltd.	Taiwan	100.0
Pfeiffer Vacuum Benelux B.V.	The Netherlands	100.0
Pfeiffer Vacuum (Xi'an) Co., Ltd.	China	100.0
Pfeiffer Vacuum Malaysia SDN. BHD.	Malaysia	100.0
Pfeiffer Vacuum Inc.	USA	100.0
Pfeiffer Vacuum New Hampshire Realty Holdings, LLC.	USA	100.0
Advanced Test Concepts, LLC.	USA	100.0
Pfeiffer Vacuum Indiana Realty Holdings, LLC.	USA	100.0
Nor-Cal Products Holdings, Inc.	USA	100.0
Nor-Cal Products, Inc.	USA	100.0
Nor-Cal Products Viet Nam Co., Ltd.	Vietnam	100.0
Nor-Cal Products Europe Ltd.	Great Britain	100.0
Nor-Cal Products Korea Co., Ltd.	Republic of Korea	100.0
Nor-Cal Products Asia Pacific Pte. Ltd.	Singapore	100.0
Pfeiffer Vacuum California Realty Holdings, LLC.	USA	100.0
Pfeiffer Vacuum Holding B.V.	The Netherlands	100.0
Pfeiffer Vacuum Italia S.p.A.	Italy	100.0
Pfeiffer Vacuum (India) Private Ltd.	India	73.0[1]
Pfeiffer Vacuum Korea Ltd.	Republic of Korea	75.5[1]
Pfeiffer Vacuum Components & Solutions GmbH	Germany	100.0
Pfeiffer Vacuum SAS	France	100.0
Pfeiffer Vacuum Romania S.r.l.	Romania	100.0
Pfeiffer Vacuum Semi Korea, Ltd.	Republic of Korea	100.0
Pfeiffer Vacuum Korea Ltd.	Republic of Korea	24.5[1]
Dreebit GmbH	Germany	100.0

[1] Total Group holdings: 100.0 %

6. Changes in consolidated companies

In 2018 there have been no changes in consolidated companies. The following explanations refer to the changes in prior year.

Acquisition of Nor-Cal Group

With effect from June 22, 2017, Pfeiffer Vacuum Technology AG indirectly via a US subsidiary acquired all shares of Nor-Cal Products Holdings, Inc. (Nor-Cal Inc.), Yreka, California, USA. At the same time further economically integrated but legally independent subsidiaries of Nor-Cal Products Holdings Inc. having their legal sites in the United States, Great Britain, the Republic of Korea, Singapore and Vietnam, were acquired. With the acquisition of these 100 % shareholdings (Nor-Cal) Pfeiffer Vacuum significantly strengthened the position in the highly attractive market for vacuum components.

The fair values of Nor-Cal's identified assets and liabilities assumed as of June 22, 2017 (acquisition date) were comprised as follows:

FAIR VALUE OF ASSETS AND LIABILITIES ASSUMED

in K€	June 22, 2017
Assets	
Intangible Assets	24,196
Fixed assets	7,350
Inventories	18,268
Receivables	5,725
Cash and cash equivalents	4,033
Other assets	1,262
Total assets	**60,834**
Liabilities	
Deferred tax liabilities	– 6,237
Trade accounts payable	– 3,141
Provisions	– 1,627
Income tax liabilities	– 500
Financial liabilities	– 4,342
Other liabilities	– 1,451
Total liabilities	**– 17,298**
Total net assets (fair value)	**43,536**
Goodwill	20,832
Total consideration (purchase price)	**64,368**

Major differences between the fair values and the net book values related to the recognition of intangible assets previously not recorded, particularly customer base (€ 19.8 million), order backlog (€ 2.4 million) and developed technology (€ 1.8 million), as well as to the write-up of inventories (€ 4.1 million), tangible assets (€ 2.0 million), and the recognition of deferred tax liabilities for the fair value adjustments (€ 6.6 million).

The purchase price comprised only a cash component. Taking into consideration the cash and cash equivalents acquired from Nor-Cal (K€ 4,033), the anticipated net cash used in connection with this corporate acquisition totaled K€ 60,335.

The gross amount of receivables assumed totaled € 5.9 million. € 0.2 million were defined as not be collectible and were thus recorded with correspondingly reduced values.

The goodwill in the amount of € 20.8 million comprised the workforce taken over, existing contracts, implemented business processes and market position as well as the acquisition's general business opportunities. This included synergy effects stemming from the broader product portfolio and the opportunity of being able to market this product portfolio via the expanded and integrated sales and marketing network. The goodwill is not expected to be able to be applied for tax purposes.

Nor-Cal's sales and net income contribution since June 22, 2017 totaled € 28.6 million, and € 1.9 million, respectively. Had the acquisition been effected at the outset of fiscal 2017, there would have been consolidated sales revenues of € 611.3 million. The consolidated net income would have been € 57.5 million taking into consideration the acquisition. The transaction costs incurred in fiscal 2017, which are to be borne by the Corporate Group, totaled K€ 638. They were attributable to legal and expertise fees and were included under general and administrative expenses.

Acquisition of Advanced Test Concepts Inc.

With effect from February 14, 2017, Pfeiffer Vacuum Technology AG indirectly via a US subsidiary acquired all shares of Advanced Test Concepts Inc. (ATC Inc.), Indianapolis, USA. At the same time further economically integrated but legally independent sister company of ATC Inc., having the same registered site, was acquired. With the acquisition of these 100% shareholdings Pfeiffer Vacuum consequently expanded its leak detection product portfolio.

In the meantime the acquired sister company to ATC Inc. was merged into ATC Inc. and ATC Inc. legal form was changed to LLC.

The fair values of ATC's identified assets and liabilities assumed as of February 14, 2017 (acquisition date) were comprised as follows:

FAIR VALUE OF ASSETS AND LIABILITIES ASSUMED

in K€	February 14, 2017
Assets	
Intangible Assets	3,464
Fixed assets	1,652
Inventories	2,582
Receivables	1,047
Cash and cash equivalents	161
Total assets	**8,906**
Liabilities	
Trade accounts payable	– 297
Other liabilities	– 216
Total liabilities	**– 513**
Total net assets (fair value)	**8,393**
Goodwill	3,402
Total consideration (purchase price)	**11,795**

Major differences between the fair values and the net book values related to the recognition of intangible assets previously not recorded, particularly customer base (€ 1.6 million), developed technology (€ 1.6 million), and a brand right (€ 0.3 million), as well as to the write-up of inventories (€ 1.2 million) and a write-down in fixed assets (€ – 0.4 million).

The purchase price comprised only a cash component. Taking into consideration the cash and cash equivalents acquired from ATC (K€ 161), the anticipated net cash used in connection with this corporate acquisition totaled K€ 11,634.

The gross amount of receivables assumed equaled its fair value.

The goodwill in the amount of € 3.4 million comprised the workforce taken over and the acquisition's general business opportunities. This included synergy effects stemming from the broader product portfolio and the opportunity of being able to market this product portfolio via the expanded and integrated sales and marketing network. The goodwill is expected to be able to be applied for tax purposes.

ATC's sales and net income contribution since February 14, 2017 totaled € 6.2 million, and € – 0.2 million, respectively. Had the acquisition been effected at the outset of fiscal 2017, there would have been consolidated sales revenues of € 587.4 million. The consolidated net income would also have been € 53.8 million taking into consideration the acquisition. The transaction costs incurred in fiscal 2017, which are to be borne by the Corporate Group, totaled K€ 89. They were attributable to legal and expertise fees and were included under general and administrative expenses.

Acquisition of further 75.1 % of shares in Dreebit GmbH

With effect from February 13, 2017, Pfeiffer Vacuum Technology AG acquired all remaining shares of Dreebit GmbH, Dresden, Deutschland, and thus increased its shareholdings from 24.9 % to 100.0 %. The acquisition has to be seen in connection with strengthening the growth area service which is a major basis for the success of Pfeiffer Vacuum.

The fair values of Dreebit's identified assets and liabilities assumed as of February 13, 2017 (acquisition date) were comprised as follows:

FAIR VALUE OF ASSETS AND LIABILITIES ASSUMED

in K€	13. Februar 2017
Assets	
Intangible Assets	189
Fixed assets	2,800
Inventories	1,284
Receivables	740
Cash and cash equivalents	375
Other assets	119
Total assets	**5,507**
Liabilities	
Deferred tax liabilities	– 207
Trade accounts payable	– 250
Provisions	– 597
Income tax liabilities	– 150
Financial liabilities	– 625
Other liabilities	– 556
Total liabilities	**– 2,385**
Total net assets (fair value)	**3,122**
Fair value of existing 24.9 % of shares as of the acquisition date	– 1,636
Goodwill	1,514
Total consideration (purchase price) of the remaining 75.1 % of shares	**3,000**

Major differences between the fair values and the net book values related to the write-up of fixed assets (€ 0.6 million) and the recognition of deferred tax liabilities for the fair value adjustments (€ 0.2 million).

The purchase price comprised only a cash component. Taking into consideration the cash and cash equivalents acquired from Dreebit (K€ 375), the anticipated net cash used in connection with this corporate acquisition totaled K€ 2,625.

The gross amount of receivables assumed equaled its fair value.

The goodwill in the amount of € 1.5 million comprised the workforce taken over and the acquisition's general business opportunities. This included synergy effects stemming from the expanded service offerings. The goodwill is not expected to be able to be applied for tax purposes.

Dreebit's sales and net income contribution since February 13, 2017 totaled € 6.6 million, and € 0.1 million, respectively. Had the acquisition been effected at the outset of fiscal 2017, there would have been consolidated sales revenues of € 587.8 million. The consolidated net income would have been € 53.9 million taking into consideration the acquisition. The transaction costs incurred in fiscal 2017, which are to be borne by the Corporate Group, totaled K€ 108. They were attributable to legal and expertise fees and were included under general and administrative expenses.

As of the acquisition date the fair value of the previously held equity portion equaled its book value.

Foundations in the prior year

To address the increasing importance of regional markets the sales and service company Pfeiffer Vacuum Malaysia SDN. BHD. was founded in Malaysia. This did not have any material impact on the Consolidated Financial Statements. In connection with the reconstruction and expanding of a facility in the USA, Pfeiffer Vacuum New Hampshire Realty Holdings, LLC., was founded. Formation of Pfeiffer Vacuum Indiana Realty Holdings, LLC., and Pfeiffer Vacuum California Realty Holdings, LLC., has to be seen in the context of acquiring ATC and Nor-Cal, respectively. Each of the latter three entities is a mere holding entity for the real estate acquired.

Liquidations in the prior year

In fiscal 2017 adixen Vacuum Technology (Shanghai) Co., Ltd., China, was liquidated and was thus disregarded from the scope of consolidation. This did not have any material impact on the Consolidated Financial Statements.

NOTES TO THE CONSOLIDATED STATEMENTS OF INCOME

7. Net sales

Pfeiffer Vacuum derives revenue from contracts with customers from the transfer of goods and services at a point in time and over time. The revenue, which is recognized at a point in time, is the major part of Pfeiffer Vacuum's net sales.

Presented below are the group sales with customers by products, regions and markets:

REVENUE BY PRODUCTS

in K€	Turbopumps	Instruments and components	Backing pumps	Service	Systems	Total
2018	192,111	193,755	143,414	111,582	18,863	**659,725**
2017	173,419	160,621	132,767	107,800	12,355	586,962

REVENUE BY REGIONS

in K€	Europe	Asia	The Americas	Rest of world	Total
2018	246,971	246,624	165,942	188	**659,725**
2017	222,547	220,304	143,808	303	586,962

REVENUE BY MARKETS

in K€	Semiconductors	Industry	Analytics	Coating	Research & Development	Total
2018	243,900	135,312	116,672	99,611	64,230	**659,725**
2017	225,358	129,135	100,067	74,232	58,170	586,962

The revenue with a major customer (> 10 % of total revenue) amounted to € 74.6 million in prior year and was realized in the segments South Korea, USA and Rest of Asia. In 2018 those revenues were below 10 % of the total revenue.

For further analysis of revenues we refer to the segment reporting in NOTE 32.

The order backlog as of December 31, 2018 was € 144.9 million (2017: € 127.4 million) and represents the extent of performance obligations which have not been fulfilled yet or are partially unfulfilled.

8. Functional expenses

Cost of Sales

Cost of sales predominantly include the manufacturing costs for the products sold as well as the costs for the services rendered. This includes all directly attributable material and production costs as well as indirect production costs (including depreciation on production buildings and machines). In addition, freight costs, expenses for inventory valuation, and warranty expenses are included here.

Selling and marketing expenses

Selling and marketing expenses predominantly include wages and salaries, marketing and advertising costs, costs relating to trade shows and conventions, as well as other merchandising costs (such as catalogs, brochures, etc.).

General and administrative expenses

General and administrative expenses predominantly include wages and salaries, expenses related to allowances for doubtful accounts, audit and other general consulting fees, as well as all costs relating to the Company as a whole.

Research and development expenses

Research and development expenses include personnel and material expenses allocated to this functional section. Amortization expenses for developed technology recognized in connection with the purchase price allocations totaled € 1.0 million in 2018 (2017: € 2.8 million) and are also included in research and development expenses.

For further analysis of operating expenses, please refer to NOTE 15 (relating to cost of sales), to NOTE 24 (relating to income tax expenses), to NOTE 25 (relating to the development of pension expenses), to NOTE 38 (relating to development of personnel expenses) and to NOTE 11 and NOTE 12 (relating to development of depreciation and amortization).

9. Other operating income and other operating expenses

Other operating income and expenses are comprised as follows:

COMPOSITION OF OTHER OPERATING INCOME AND EXPENSES

in K€	2018	2017
Foreign exchange gains	5,454	5,781
Government grants	3,568	3,117
Gains from disposals of assets	1,744	112
Other	536	1,335
Other operating income	**11,302**	**10,345**
Foreign exchange losses	– 4,682	– 8,748
Others	– 558	– 176
Other operating expenses	**– 5,240**	**– 8,924**

In respect to government grants reported under other operating income, there are no unfulfilled conditions or other contingencies existing.

10. Financial expenses and financial income

Financial expenses and financial income as recorded in 2018 and the previous year comprises as follows:

COMPOSITION OF FINANCIAL INCOME AND FINANCIAL EXPENSES

in K€	2018	2017
Interest expenses and similar	– 727	– 693
Total financial expenses	**– 727**	– 693
Interest income	208	347
Total financial income	**208**	347
Financial result	**– 519**	– 346

NOTES TO THE CONSOLIDATED BALANCE SHEETS

11. Intangible assets

The intangible assets item mainly includes software purchased within the consolidated Group and intangible assets recognized in connection with acquisitions (amongst others developed technology, customer base, trademark right) as well as goodwill. The development of intangible assets in 2018 and 2017 was as follows:

DEVELOPMENT OF INTANGIBLE ASSETS IN 2018

in K€	Software	Goodwill	Customer base	Other intangible assets	Total
Acquisition cost					
Balance as at January 1, 2018	8,410	79,299	40,495	33,108	161,312
Currency changes	6	1,422	1,137	308	2,873
Additions	801	—	—	372	1,173
Disposals	– 49	—	—	– 197	– 246
Balance as at December 31, 2018	9,168	80,721	41,632	33,591	165,112
Amortization					
Balance as at January 1, 2018	5,193	—	21,604	23,701	50,498
Currency changes	4	—	294	124	422
Additions	1,130	—	1,640	2,208	4,978
Disposals	– 49	—	—	– 197	– 246
Balance as at December 31, 2018	6,278	—	23,538	25,836	55,652
Net book value as at December 31, 2018	2,890	80,721	18,094	7,755	**109,460**
Thereof with an unlimited useful life	—	80,721	—	3,281	84,002

DEVELOPMENT OF INTANGIBLE ASSETS IN 2017

in K€	Software	Goodwill	Customer base	Other intangible assets	Total
Acquisition cost					
Balance as at January 1, 2017	7,130	56,800	21,435	26,920	112,285
Currency changes	– 14	– 3,249	– 2,289	– 633	– 6,185
Additions	1,104	—	—	524	1,628
Disposals	– 3	—	—	– 10	– 13
Additions from acquisitions	193	25,748	21,349	6,307	53,597
Balance as at December 31, 2017	8,410	79,299	40,495	33,108	161,312
Amortization					
Balance as at January 1, 2017	4,235	—	21,435	19,036	44,706
Currency changes	– 13	—	– 807	– 96	– 916
Additions	974	—	976	4,771	6,721
Disposals	– 3	—	—	– 10	– 13
Balance as at December 31, 2017	5,193	—	21,604	23,701	50,498
Net book value as at December 31, 2017	**3,217**	**79,299**	**18,891**	**9,407**	**110,814**
Thereof with an unlimited useful life	—	79,299	—	3,249	82,548

Impairment losses or respective reversals did not have to be recorded for intangible assets in fiscal 2018 and 2017.

For the purpose of testing the recoverability, goodwill and trademark rights with indefinite useful life recognized in connection with acquisitions, were tested on December 31, 2018 by means of an impairment test.

The determination of the cash generating units as a basis for the impairment test followed the segmentation according to IFRS 8 and was thus legal entity related. The recoverable amounts (values in use) for impairment testing of the goodwill were determined as at December 31, 2018 for those cash generating units goodwill was allocated to. Bases were cash flow forecasts for the years 2019 through 2021. These cash flow forecasts are developed from the distinguished yearly sales and cost planning for every year of the said period as approved by the Management and the corresponding operating results. In doing so, the current operating results as well as the expected market, economic, and competitor developments are considered and checked against the historical results. For the cash flow forecasts assumptions with regard to the development of working capital and the future capital expenditures are taken additionally. The cash flows expected after the detailed forecast were extrapolated using individual growth rates. Discounting of cash flows is carried out using weighted average cost of capital (WACC) that also reflect country specific risks.

For the goodwill recorded in connection with various acquisitions (€ 80.7 million; 2017: € 79.3 million) the recoverable amount (value in use) was determined as at December 31, 2018, based on cash generating units. The goodwill allocation to the cash generating units and the major assumptions used in calculating the recoverable amount are detailed in the following table.

ALLOCATION OF GOODWILL AND MAJOR VALUATION ASSUMPTIONS

	December 31, 2018			December 31, 2017		
	Goodwill	Pre-tax discount rate	Long-term growth rate	Goodwill	Pre-tax discount rate	Long-term growth rate
	in € millions	in %	in %	in € millions	in %	in %
Germany	13.1	11.7 – 12.4	1.0 – 1.5	13.1	9.0 – 9.4	1.5
Thereof Pfeiffer Vacuum Components & Solutions GmbH	8.2	12.1	1.5	8.2	9.4	1.5
France (Pfeiffer Vacuum SAS)	23.0	14.2	1.5	23.0	11.1	1.5
Rest of Europe	2.7	12.0 – 16.0	1.5	2.7	11.6	1.5
USA	31.2	11.0 – 11.1	1.5	29.8	8.5 – 12.9	1.5
Thereof Nor-Cal Products Inc.	20.3	11.0	1.5	19.4	9.7	1.5
Thereof Pfeiffer Vacuum Inc.	7.7	11.1	1.5	7.4	8.5	1.5
Republic of Korea (Pfeiffer Vacuum Semi Korea, Ltd.)	4.3	12.1	1.5	4.3	9.7	1.5
China	4.1	12.4	1.5	4.1	9.8	1.5
Rest of Asia	2.3	10.2 – 17.3	1.5	2.3	10.7	1.5
Total	**80.7**			**79.3**		

As of December 31, 218, the valuation of the aforementioned goodwill did not result in any impairment losses because for each individual valuation the value in use of the cash generating unit exceeded its respective book value.

A trademark right recognized in connection with an acquisition (net book value € 3.3 million; 2017: € 3.2 million) is still actively used by Pfeiffer and thus still has an indefinite useful life. It was allocated to the business segments based on sales portions. Here, amongst others, € 0.8 million related to France, € 1.0 million to the Republic of Korea, and € 0.6 million to the USA. No impairment was determined under the impairment test conducted on December 31, 2018.

Basically no reasonably possible change in a key assumption would cause each unit's carrying amount to exceed its recoverable amount. In contrast, an increase in discount rate by 0.3 %-points to 12.4 % with all other assumptions kept constant would cause the recoverable amount (value in use) of the goodwill allocated to the Italy region to match its net book value (2017: 0.15 %-points to 10.05 %). The same situation would result from a 0.2 %-point to 5.3 % reduction of the sustainable EBIT margin used for the cash flow extrapolation or a 0.3 % point reduction in the sustainable sales growth rate or a reduction of the sustainable free cash flow by K€ 20 to K€ 622 used for the cash flow extrapolation (2017: 0.1 %-points to 5.0 %, 0.2 %-points, and K€ 15 to K€ 459, respectively). An increase in discount rate by 1.3 %-points to 10.0 % with all other assumptions kept constant would cause the recoverable amount (value in use) of the goodwill allocated to Dreebit GmbH to match its net book value (2017: 0.25 %-points to 7.1 %). The same situation would result from a 1.2 %-point to 5.3 % reduction of the sustainable EBIT margin used for the cash flow extrapolation or a reduction of the sustainable free cash flow by K€ 100 to K€ 431 used for the cash flow extrapolation (2017: 0.3 %-points to 4.1 %, 0.3 %-points reduction in the sustainable sales growth rate or a reduction of the sustainable free cash flow by K€ 20 to

K € 333, respectively). In 2017, an increase in discount rate by 0.3 %-points with all other assumptions kept constant would have caused the recoverable amount (value in use) of the goodwill allocated to China to match its net book value. The same situation would have resulted from a 0.3 %-point to 4.2 % reduction of the sustainable EBIT margin used for the cash flow extrapolation or a 0.4 %-point reduction in the sustainable sales growth rate or a reduction of the sustainable free cash flow by K € 60 to K € 853 used for the cash flow extrapolation. As of December 31, 2018, the amount by which the value in use exceeded the respective unit's net book value for the said two cash generating units in Italy and Dreebit totaled € 0.1 million, and € 1.0 million, respectively (2017: Italy, China and Dreebit € 0.1 million, € 0.8 million, and € 0.3 million, respectively).

12. Property, plant and equipment

DEVELOPMENT OF PROPERTY, PLANT AND EQUIPMENT IN 2018

in K €	Land and Buildings	Technical Equipment and Machinery	Other Equipment, Factory and Office Equipment	Construction in Progress	Total
Acquisition or manufacturing cost					
Balance as at January 1, 2018	87,373	91,396	33,330	11,246	223,345
Currency changes	600	301	106	100	1,107
Additions	4,443	15,178	3,412	9,463	32,496
Disposals	– 378	– 811	– 1,622	—	– 2,811
Reclassifications	7,407	828	130	– 8,365	—
Balance as at December 31, 2018	99,445	106,892	35,356	12,444	254,137
Depreciation					
Balance as at January 1, 2018	37,268	58,514	20,614	—	116,396
Currency changes	– 3	101	77	—	175
Additions	3,739	6,418	3,432	—	13,589
Disposals	– 197	– 553	– 1,416	—	– 2,166
Balance as at December 31, 2018	40,807	64,480	22,707	—	127,994
Net book value as at December 31, 2018	**58,638**	**42,412**	**12,649**	**12,444**	**126,143**

DEVELOPMENT OF PROPERTY, PLANT AND EQUIPMENT IN 2017

in K€	Land and Buildings	Technical Equipment and Machinery	Other Equipment, Factory and Office Equipment	Construction in Progress	Total
Acquisition or manufacturing cost					
Balance as at January 1, 2017	74,230	80,779	30,510	4,818	190,337
Currency changes	– 912	– 633	– 454	– 259	– 2,258
Additions	5,577	6,241	3,194	11,038	26,050
Disposals	– 162	– 1,707	– 717	—	– 2,586
Additions from acquisitions	7,746	3,455	601	—	11,802
Reclassifications	894	3,261	196	– 4,351	—
Balance as at December 31, 2017	87,373	91,396	33,330	11,246	223,345
Depreciation					
Balance as at January 1, 2017	33,549	53,388	18,347	—	105,284
Currency changes	– 40	– 286	– 273	—	– 599
Additions	3,917	7,052	3,110	—	14,079
Disposals	– 158	– 1,640	– 570	—	– 2,368
Balance as at December 31, 2017	37,268	58,514	20,614	—	116,396
Net book value as at December 31, 2017	**50,105**	**32,882**	**12,716**	**11,246**	**106,949**

In fiscals 2018 and 2017, no buildings and machinery were used as collateral to secure the Group's financial liabilities.

Neither in 2018 nor in the previous year there were any impairment losses or related reversals for property, plant, and equipment.

The yearly review of the remaining useful life of fixed assets in fiscal year 2018 led to an extension of useful lives for buildings, technical equipment and machinery in the France segment. Compared to the former useful lives the Group's net income was positively affected by net € 0.8 million. This amount will probably also incur in fiscal year 2019 and will balance gradually in future periods. There will be no earnings impact over the total useful lives of the respective assets.

13. Investment properties

DEVELOPMENT OF INVESTMENT PROPERTIES

in K€	2018	2017
Acquisition or manufacturing cost		
Balance as at January 1	861	861
Additions	—	—
Disposals	—	—
Reclassifications	—	—
Balance as at December 31	861	861
Depreciation		
Balance as at January 1	413	389
Additions	24	24
Disposals	—	—
Reclassifications	—	—
Balance as at December 31	437	413
Net book value as at December 31	**424**	**448**

The real estate shown in this line item was rented out in fiscal 2018 and 2017. Rental revenues amounted to K€ 56 (2017: K€ 55) and direct operating expenses amounted to K€ 28 (2017: K€ 27). Impairment losses or related reversals did not have to be recorded in 2018 and 2017.

The fair value of investment properties remains unchanged at € 0.5 million as per December 31, 2018 and 2017. Fair values were derived on the basis of the Company's own calculations by discounting expected net rental revenues during the estimated remaining life by an appropriate discount rate (level 3 of the fair value hierarchy according to IFRS 13).

14. Other financial assets and other assets

Other financial assets include mainly non-current cash items K€ 3,315 (2017: K€ 2,377) and deposits K€ 967 (2017: K€ 949). The short-term-part of cash items and deposits is reported under current financial assets.

The amount of other assets end of 2018 relates particularly to prepaid expenses in connection with a long-term use of factory and office properties.

15. Inventories

COMPOSITION OF INVENTORIES

in K€	2018	2017
Raw materials	36,420	31,816
Work in process	32,095	28,667
Finished products	64,676	52,901
Total inventories, net	**133,191**	113,384

Dec. 31

Materials consumption in fiscal 2018 amounted to € 256.6 million (2017: € 218.5 million) and is included in cost of sales.

In 2018, an amount of K€ 1,467 (2016: K€ 2,702) from the valuation of inventories at net realizable value was recorded as expense. This expense was shown under cost of sales.

16. Trade accounts receivable and contract assets

In connection with its normal course of business, the Company extends credit to a wide variety of business customers. The Company performs ongoing credit evaluations of its customers. Trade accounts receivable and contract assets do not bear any interest and have a remaining term of less than one year.

COMPOSITION OF TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS

in K€	2018	2017
Trade accounts receivable	93,331	80,780
Contract assets	298	—
Loss allowances	– 1,167	– 719
Trade accounts receivable and contract assets, net	**92,462**	80,061

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The closing loss allowances for trade accounts receivable and contract assets as at December 31, 2018 reconcile to the opening loss allowances as follows:

DEVELOPMENT OF LOSS ALLOWANCES

in K€

Loss allowances acc. to IAS 39 as at December 31, 2017	719
Revaluation	—
Loss allowances acc. to IFRS 9 as at January 1, 2018	719
Currency changes	17
Additions	590
Utlization	– 159
Loss allowances acc. to IFRS 9 as at December 31, 2018	**1,167**

Contract assets of 298 K € represent contractual rights to receive a consideration from customers, in such cases where Pfeiffer Vacuum fulfilled its obligations in according to IFRS 15 but the consideration did not become due. In this respect, Pfeiffer Vacuum recognizes revenue based on the group's progress to satisfy the performance obligation. The amount of contract assets was netted with customer's considerations which were already paid (1.026 K €). As at January 1, 2018 no major contract assets were registered.

Pfeiffer Vacuum applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The group has therefore concluded that the expected loss rates for trade receivables are a reasonable approximation of the loss rates for the contract assets.

The expected loss rates are based on the payment profiles of sales over a period of 60 months before December 31, 2018 or January 1, 2018 respectively and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables. The group has identified the GDP (Gross Domestic Product) of the countries in which it sells its goods to be the most relevant factor, and accordingly adjusts the historical loss rates based on expected changes in this factor.

On that basis, the loss allowance as at December 31, 2018 was determined as follows for both trade receivables and contract assets:

COMPOSITION OF LOSS ALLOWANCES

in K€	Not overdue	Less than 30 days past due	More than 30 days past due	More than 60 days past due	More than 90 days past due	Total
December 31, 2018						
Expected loss rate	0.0%	0.2%	2.1%	7.7%	19.6%	
Gross carrying amount – trade accounts receivable	66,918	14,756	5,155	2,057	4,445	**93,331**
Gross carrying amount – contract assets	298	—	—	—	—	**298**
Loss allowance	—	29	108	159	871	**1,167**
December 31, 2017						
Gross carrying amount – trade accounts receivable	59,655	14,099	2,842	1,657	2,527	**80,780**
Gross carrying amount – contract assets	—	—	—	—	—	**—**
Loss allowance	—	—	40	145	534	**719**

Further loss allowances on financial assets were not registered in current reporting period and in prior year.

17. Other accounts receivable

This line item totaled K€ 13,884 as at December 31, 2018 (December 31, 2017: K€ 11,792). As in the year before, this position was characterized by expense subsidies of K€ 5,230 (December 31, 2017: K€ 5,313) and VAT claims of K€ 5,197 (December 31, 2017: K€ 3,239).

18. Cash and cash equivalents

The cash and cash equivalents item consists of cash at banks and cash on hand. Additionally, the Company records all bank deposits having an original maturity of three months or less as cash equivalents. The fair value of cash and cash equivalents corresponds to their net book value.

19. Share capital and additional paid-in capital

Unchanged compared to the previous year end, the share capital of Pfeiffer Vacuum Technology AG (parent company) consisted of 9,867,659 issued and outstanding no-par ordinary shares.

The Annual Shareholders Meeting on May 23, 2018, authorized the Management Board to increase the Company's share capital by K€ 12,631, or 4,933,829 shares, in consideration for contributions in cash and/or kind once or in partial amounts (authorized capital). This authorization is valid through May 23, 2023, and is subject to the consent of the Supervisory Board.

According to the resolution of the Annual Shareholders Meeting on May 22, 2014, the Management Board is authorized to issue fractional bonds with option or conversion rights or conversion obligations, profit participation rights or participating bonds (or combinations of these instruments) with an aggregate nominal value of up to € 200,000,000.00 and to grant the holders conversion rights for up to 2,466,914 no-par bearer shares of the Company having a pro-rata amount of up to € 6,315,299.84 of the share capital. This authorization is valid until May 21, 2019, and requires the consent of the Supervisory Board.

There were no changes of the additional paid-in capital in 2018 or 2017.

20. Paid and proposed dividends

The Annual General Meeting on May 23, 2018, resolved to pay a dividend of € 2.00 per share (Annual Shareholders Meeting on May 23, 2017: € 3.60 per share). The dividend payment carried out thereunder amounted to K€ 19,735 in 2018 (2017: K€ 35,524).

The Management Board proposes to let shareholders participate in the Company's success via a dividend in the amount of € 2.30 per share. This proposal is subject to the approval of the Supervisory Board and the Annual General Meeting. Because the proposal must be approved by the Annual General Meeting, the resulting payment of K€ 22,696 has not been recorded as a liability in the balance sheet for the fiscal year ended December 31, 2018.

21. Other equity components

Other equity components comprise unrealized gains/losses on hedges and actuarial gains/losses resulting from valuation of defined benefit obligations and plan assets at fair value. Furthermore this position comprises foreign currency translation adjustments.

DEVELOPMENT OF OTHER EQUITY COMPONENTS

in K€	Valuation of Defined Benefit Plans	Results from Cash Flow Hedges	Currency Changes	Total
Balance as at January 1, 2017	– 30,169	– 412	13,226	– 17,355
Changes in actuarial gains/losses (net of tax)	– 121	—	—	– 121
Changes in fair value of cash flow hedges (net of tax)	—	412	—	412
Changes in foreign currency translation	—	—	– 13,252	– 13,252
Balance as at December 31, 2017	– 30,290	—	– 26	**– 30,316**
Changes in actuarial gains/losses (net of tax)	– 2,751	—	—	– 2,751
Changes in fair value of cash flow hedges (net of tax)	—	– 9	—	– 9
Changes in foreign currency translation	—	—	4,904	4,904
Balance as at December 31, 2018	– 33,041	– 9	4,878	**– 28,172**

Due to the fact that the terms of all cash flow hedges are less than one year, the reported year-end balances as at December 31 of the respective years will be reclassified to the income statement the next year. The new year-end amounts result form changes during the respective year and thus not from prior years.

TAX EFFECT ON OTHER COMPREHENSIVE INCOME

	2018			2017		
in K€	Gross Amount	Tax Effect	Net Amount	Gross Amount	Tax Effect	Net Amount
Valuation of Defined Benefit Plans	– 4,125	1,374	– 2,751	394	– 515	– 121
Results from cash flow hedges	– 13	4	– 9	588	– 176	412
Currency changes	4,904	—	4,904	– 13,252	—	– 13,252
Total other comprehensive income	**766**	**1,378**	**2,144**	– 12,270	– 691	– 12,961

Dec. 31

22. Treasury shares

At the Annual Shareholders Meeting on May 21, 2015, the shareholders authorized the Management Board to acquire treasury shares pursuant to § 71, Sub-Para. 1, No. 8, German Stock Corporation Act ("AktG"). This authorization allows the Company to acquire treasury shares representing up to € 2,526,120.70 of the capital stock (986,766 shares equal to 10% of capital stock at the time of the resolution), requires the consent of the Supervisory Board for execution, and is valid through May 20, 2020.

23. Long-term financial liabilities

In connection with the acquisition of Nor-Cal Products Holdings Inc. and its subsidiaries, long-term financial liabilities having a net cash inflow of € 70.0 million were taken out in the course of 2017. With it, an existing credit line was amended. These liabilities have a Euribor-based variable interest rate including an arm's-length margin. Interest clearing is made quarterly. There were no changes in the financial liabilities drawn during the course of 2018. In fiscal year 2018, interest expenses totaling € 0.5 million were recorded (previous year: € 0.3 million). Under the loan agreement, the Group has committed to comply with a determined financial ratio. The Company has clearly complied with this ratio in 2018 and 2017.

Pfeiffer Vacuum and its subsidiaries have various lines of credit available to them for operating purposes, totaling approximately € 13.9 million (December 31, 2017: € 13.6 million).

Financial obligations as shown under short and long-term financial liabilities may result in cash flows from financing activities in future reporting periods. Changes of these financial liabilities in fiscal years 2017 predominantly consisted of cash-based changes, while there were no changes in 2018.

24. Income taxes

Under current German corporate tax law, taxes on the income of German companies comprise corporate taxes, trade taxes, and an additional surtax.

INCOME BEFORE TAX WAS TAXABLE IN THE FOLLOWING JURISDICTIONS

in K€	2018	2017
Germany	44,648	33,715
Outside Germany	49,963	37,325
Total	**94,611**	**71,040**

COMPOSITION OF INCOME TAX EXPENSE

in K€	2018	2017
Current taxes		
Germany	– 14,357	– 10,593
Outside Germany	– 11,297	– 11,304
	– 25,654	**– 21,897**
Deferred taxes		
Germany	1,369	344
Outside Germany	– 1,447	4,361
	– 78	**4,705**
Income tax expense	**– 25,732**	**– 17,192**

K€ 26,476 of current tax expense related to earnings in 2018 (2017: K€ 22,301). This line item additionally contained tax income for prior years amounting to K€ 822 (2017: K€ 404).

RECONCILIATION FROM EXPECTED TO ACTUAL INCOME TAX EXPENSE

in K€	2018	2017
Earnings before taxes	94,611	71,040
Expected tax expense using the tax rate of the parent company (28.95 %; 2017: 28.81 %)	– 27,390	– 20,467
Non-deductible expenses	– 1,285	– 1,019
Effects due to dividend payments	– 324	– 180
Deferred tax changes due to changes in tax laws	–	1,924
Non-taxable income	1,598	1,902
Difference foreign tax rates	854	257
Tax credits/debits due to tax filings in prior years	822	404
Other	– 7	– 13
Income tax expense	**– 25,732**	– 17,192

As opposed to 24.2 % the year before, the tax ratio for the Pfeiffer Vacuum Group amounted to 27.2 % in 2018. Prior year's tax ratio was positively impacted particularly by the one-time effects of the US tax reform and thus increased in the year under review.

DEFERRED TAXES RELATE TO THE FOLLOWING BALANCE SHEET ITEMS

in K€	2018	2017
Deferred tax assets		
Pensions	19,026	16,887
Inventories	6,507	5,184
Provisions and contract liabilities	3,920	4,106
Tax credits	1,297	2,152
Tax loss carry forwards	1,000	1,270
Property, plant and equipment	299	688
Receivables	313	328
Intangible assets	247	591
Derivatives	14	3
Other	68	73
Total deferred tax assets	**32,691**	31,282
Thereof long-term deferred tax assets	21,869	21,588
Thereof short-term deferred tax assets	10,822	9,694
Deferred tax liabilities		
Intangible assets	– 6,652	– 6,750
Property, plant and equipment	– 5,556	– 5,424
Receivables (including contract assets)	– 140	– 51
Inventories	– 82	– 8
Other	– 4	—
Total deferred tax liabilities	**– 12,434**	– 12,233
Thereof long-term deferred tax liabilities	– 12,208	– 12,174
Thereof short-term deferred tax liabilities	– 226	– 59
Total deferred taxes, net	**20,257**	19,049

Dec. 31

AMOUNTS RECORDED IN THE BALANCE SHEET

in K€	2018	2017
Deferred tax assets	24,895	23,037
Deferred tax liabilities	– 4,638	– 3,988
Total deferred taxes, net	**20,257**	19,049

Dec. 31

DEFERRED TAXES RECORDED IN THE INCOME STATEMENT

in K€	2018	2017
Inventories	1,216	333
Pension	746	– 781
Intangible assets	446	4,736
Derivatives	3	– 109
Property, plant and equipment	– 929	952
Tax credit	– 928	500
Tax loss carry forwards	– 308	– 1,300
Provisions and contract liabilities	– 214	8
Receivables (including contract assets)	– 112	337
Other	2	29
Total deferred taxes	**– 78**	4,705

As at December 31, 2018, the total deferred tax assets included income taxes recorded directly in equity in the amount of K€ 13,162 (December 31, 2017: K€ 11,784). The total deferred tax liabilities included no income taxes recorded directly in equity. The amount recorded directly in equity in 2018 related to actuarial gains/losses and derivatives/hedging (2017: only actuarial gains/losses).

For taxable losses totaling K€ 1,935 (thereof K€ 203 deductible until 2019, K€ 132 deductible until 2020, K€ 702 deductible until 2021, and K€ 218 deductible until 2022), no deferred tax assets have been recorded as these losses will presumably not be offset against taxable gains until the expiration.

Provisions have not been established for additional taxes on the undistributed earnings of non-German subsidiaries. These earnings are considered to be permanently reinvested and could become subject to additional tax if remitted or deemed remitted as dividends. Under current German law, dividends from non-German and German subsidiaries are 95 % tax-exempt, i.e. 5 % of dividend income is not deductible from income for corporate tax purposes. The management estimates that the effects of this rule in Germany will be negligible.

25. Pensions and similar obligations

Defined benefit pension plans

COMPOSITION OF THE NET LIABILITY RECORDED IN THE BALANCE SHEET

in K€	2018	2017
Present value of funded defined benefit obligation	104,474	101,010
Present value of unfunded defined benefit obligation	10,313	10,526
Total present value of defined benefit obligation	114,787	111,536
Fair value of plan assets	– 59,149	– 61,502
Net defined benefit liability	**55,638**	**50,034**

Dec. 31

REGIONAL SPLIT OF THE NET LIABILITY RECORDED IN THE BALANCE SHEET

in K€	2018	2017
Germany	41,007	36,302
Europe (excluding Germany)	9,143	9,263
Rest of world	5,488	4,469
Net defined benefit liability	**55,638**	**50,034**

Dec. 31

For Pfeiffer Vacuum GmbH, there are plans in place consisting of old-age, invalidity, and surviving dependents benefits. These obligations are based upon plans reflecting period of service and final salary. However, these plans are closed for new employees since many years. For new employees, there is a retirement arrangement in place since December 31, 2007 which has been implemented as a direct commitment on a period of service and funded basis. Accordingly for all employees of Pfeiffer Vacuum GmbH an employer funded pension scheme is in place which is partially funded via the Pfeiffer Vacuum Trust e.V. There are no legally binding minimum funding requirements for these plans.

For Dr. Matthias Wiemer and former members of the Pfeiffer Vacuum Technology AG Management Board there are individually agreed plans in place, consisting of old-age, invalidity, and surviving dependents benefits. These obligations are based on period of service as well as final salary commitments and are also largely funded via the Pfeiffer Vacuum Trust e.V. Again, there are no legally binding minimum funding requirements. These benefit obligations are detailed in the compensation report (an element of the Group Management Report).

For Pfeiffer Vacuum Inc., USA, there is a plan in place consisting of old-age, invalidity, and surviving dependents benefits with the obligations being based upon period of service and final salary. These benefits are partially funded via a trust arrangement. There are no legally binding minimum funding requirements.

For Pfeiffer Vacuum SAS, France, and for Pfeiffer Vacuum Semi Korea, Ltd., Republic of Korea, there are plans in place with the obligations being based upon period of service and final salary to be paid as a one-time installment due at the beginning of the retirement. The plan of Pfeiffer Vacuum Semi Korea, Ltd. is partially funded. There are no legally binding minimum funding requirements in France or the Republic of Korea.

COMPOSITION OF THE NET PENSION EXPENSES

in K€	2018	2017
Current service cost	3,527	3,654
Net interest expense	1,111	936
Net pension expenses	**4,638**	4,590

Net pension expenses were allocated to the functional expenses according to the input involved.

DEVELOPMENT OF THE DEFINED BENEFIT OBLIGATION

in K€	2018	2017
Present value of defined benefit obligation as at January 1	111,536	110,013
Current service cost	3,527	3,654
Interest cost on the defined benefit obligation	2,335	2,099
Actuarial gains /losses from changes in demographic assumptions	796	– 341
Actuarial gains /losses from changes in financial assumptions	– 731	638
Actuarial experience gains /losses	593	115
Benefits paid	– 3,725	– 3,510
Currency changes	456	– 1,132
Present value of defined benefit obligation as at December 31	**114,787**	111,536
Thereof attributable to:		
Active employees	61,180	61,022
Deferred employees	9,716	9,677
Pensioners	43,891	40,837

DEVELOPMENT OF PLAN ASSETS

in K€	2018	2017
Fair value of plan assets as at January 1	61,502	58,825
Interest income	1,224	1,163
Experience gains/losses	– 3,412	656
Company contributions	3,243	5,137
Benefit payments	– 3,725	– 3,510
Currency changes	317	– 769
Fair value of plan assets as at December 31	**59,149**	61,502

ACTUARIAL ASSUMPTIONS

in %	2018	2017
Germany		
Discount rate	1.75	1.75
Wage and salary trend	3.00	3.00
Pension trend	2.00	2.00
Mortality tables	Heubeck 2018 G	Heubeck 2005 G
United States		
Discount rate	4.45	3.80
Wage and salary trend	2.00	2.00
Mortality tables	RP 2018	RP 2017
France, Republic of Korea		
Discount rate (weighted average)	1.89	1.99
Wage and salary trend (weighted average)	3.48	3.39
Mortality tables France	Insee M/F 2007–2060	Insee M/F 2007–2060
Mortality tables Republic of Korea	Insurance Development Institute of Korea	Insurance Development Institute of Korea

Dec. 31

The actuarial assumptions with regard to the mortality tables in the USA and Germany changed in 2018. This resulted in an actuarial loss of K€ 796. The impact on future periods presently cannot be conclusively determined.

COMPOSITION OF PLAN ASSETS

	2018		2017	
	in K€	in %	in K€	in %
Equity securities	14,635	24.7	20,289	33.0
Debt securities	40,246	68.0	36,002	58.5
Cash and cash equivalents	1,512	2.6	2,367	3.9
Other	2,756	4.7	2,844	4.6
Total	**59,149**	**100.0**	61,502	100.0

Dec. 31

With the exemption of plan assets in the category "Other" totaling K€ 1,604 (December 31, 2017: K€ 1,745), all plan assets are traded on an active market.

Plan assets do not contain financial instruments issued by the Company or other assets owned by the Company.

Accounting for 87 % the vast majority of plan assets related to the funding of the German benefit plans. To invest these funded amounts fiducially and insolvency protected, Pfeiffer Vacuum Trust e.V. was founded. Pfeiffer Vacuum Trust e.V. issued a mutual fund with a pursued target equity allocation of up to 30 % as well as a pursued fixed-income securities and cash allocation of at least 70 %. The fund is managed by an unrelated third-party asset management company with the major conditions regarding the asset allocation being given and adjusted when necessary. Funds are invested conservatively using also a value safeguarding approach. Underlying risks in connection with the investment of plan assets, for example fair value and default risks, are minimized accordingly.

The risks relating to the defined benefit plans within Pfeiffer Vacuum Group predominantly relate to the determination of discount rates. Changes to this parameter impact disproportionately the present value with the current relatively low interest rate level leading to a comparably high benefit obligation. In addition, benefit obligation is impacted by the other actuarial assumptions (for example life expectancy, wage and salary trend, pension trend). Depending on the elements of the pension plan life expectancy or pension trend are of subordinate importance. The following table shows the respective impact of an isolated adjustment of individual assumptions with all other parameters including the basic methodology kept constant compared to the original calculation.

SENSITIVITY ANALYSIS 2018

	Change in actuarial assumption	Impact on defined benefit obligation	
		in K€	in %
Present value of defined benefit obligation as at December 31, 2018		114,787	
Discount rate	1.0 %-point increase	– 14,545	– 12.7
	1.0 %-point decrease	18,423	16.0
Pension trend	0.25 %-point increase	2,657	2.3
	0.25 %-point decrease	– 2,538	– 2.2
Wage and salary trend	0.5 %-point increase	1,788	1.6
	0.5 %-point decrease	– 1,693	– 1.5
Life expectancy	increase by 1 year	4,524	3.9
	decrease by 1 year	– 4,555	– 4.0

Dec. 31

SENSITIVITY ANALYSIS 2017

	Change in actuarial assumption	Impact on defined benefit obligation	
		in K€	in %
Present value of defined benefit obligation as at December 31, 2017		111,536	
Discount rate	1.0 %-point increase	– 14,472	– 13.0
	1.0 %-point decrease	18,392	16.5
Pension trend	0.25 %-point increase	2,592	2.3
	0.25 %-point decrease	– 2,476	– 2.2
Wage and salary trend	0.5 %-point increase	1,844	1.7
	0.5 %-point decrease	– 1,746	– 1.6
Life expectancy	increase by 1 year	4,252	3.8
	decrease by 1 year	– 4,265	– 3.8

Dec. 31

EXPECTED MATURITY OF UNDISCOUNTED PENSION PAYMENTS

in K€	2018	2017
Less than 1 year	3,649	3,494
Between 1 and 2 years	3,881	3,652
Between 2 and 3 years	4,117	3,940
Between 3 and 4 years	4,535	3,976
Between 4 and 5 years	4,657	4,515
More than 5 until 10 years	**27,437**	**26,273**

Dec. 31

The weighted average duration of the defined benefit obligation at December 31, 2018 amounted to 15.9 years (December 31, 2017: 16.1 years). The expected contributions for defined benefit plans in 2019 will be approximately € 3.6 million.

Defined contribution plans

Employees of the Company in certain countries are covered by defined contribution plans. Generally, contributions are based upon a percentage of the employee's wages or salaries. The costs of these plans charged to operations amounted to K€ 12,721 in 2018 (2017: K€ 11,805).

26. Trade accounts payable

Trade accounts payable do not bear any interest and, as in the year before, have maturities of less than one year.

27. Contract liabilities

Contract liabilities as of December 31, 2018 include obligations to transfer vacuum products or render services to Pfeiffer Vacuum's customers from whom payments have already been received. Therefore, Pfeiffer Vacuum does no longer disclose such payments received under "Customer deposits." Presumably K€ 630 of the contract liabilities will be realized or fulfilled after more than 12 months.

28. Other payables

Other payables (K€ 25,740 as at December 31, 2018, and K€ 22,333 as at December 31, 2017) mainly consist of payroll taxes and VAT, as well as payables from social security contributions and legally binding participation programs. They do not bear any interest and, as in the year before, have maturities of less than one year.

29. Provisions

COMPOSITION OF PROVISIONS

in K€	2018	2017
Personnel provisions	23,574	19,896
Warranty provisions	15,939	15,769
Other provisions	2,113	4,229
Total	**41,626**	**39,894**

Dec. 31

Provisions for employee-related expenses primarily include provisions for profit-sharing obligations and bonuses. Warranty provisions include the amounts expected due to claims in connection with product warranties. They are recorded as per the close of the fiscal year for realized revenues based on management's estimates and experience.

DEVELOPMENT OF PROVISIONS

in K€	Personnel	Warranty	Other	Total
Balance as at January 1, 2018	19,896	15,769	4,229	39,894
Currency changes	170	65	– 13	222
Additions	18,080	7,576	1,729	27,385
Utilization	– 14,095	– 7,471	– 3,787	– 25,353
Releases	– 477	–	– 45	– 522
Balance as at December 31, 2018	**23,574**	**15,939**	**2,113**	**41,626**

30. Short-term financial liabilities

As in the year before short-term financial liabilities included bank liabilities in the amount of € 0.1 million maturing within one year.

31. Commitments and other financial obligations

The Company has entered into leases and maintenance agreements which expire on various dates, some of which are renewable. The tables below present the maximum amount of the contractual commitments as at year end, classified by the periods in which the contingent liabilities or commitments will expire.

CONTRACTUAL OBLIGATIONS AS AT DECEMBER 31, 2018

		Payments Due by Period			
in K€	**Total**	< 1 Year	1–3 Years	3–5 Years	> 5 Years
Operating leases	14,615	4,427	5,267	2,285	2,636
Purchase obligations	35,325	34,070	1,255	—	—
Repair and maintenance	5,087	2,834	310	179	1,764
Total	**55,027**	**41,331**	**6,832**	**2,464**	**4,400**

CONTRACTUAL OBLIGATIONS AS AT DECEMBER 31, 2017

		Payments Due by Period			
in K€	**Total**	< 1 Year	1–3 Years	3–5 Years	> 5 Years
Operating leases	11,624	3,742	4,736	2,072	1,074
Purchase obligations	23,430	19,556	3,874	—	—
Repair and maintenance	2,665	2,410	188	57	10
Total	**37,719**	**25,708**	**8,798**	**2,129**	**1,084**

Purchase obligations include long-term arrangements for future supplies of materials. Rental expenses amounted to € 5.4 million (2017: € 5.0 million) and mainly related to the local sales companies' rented premises. The contracts have different terms and extension rights.

32. Segment reporting

The Company's business operations include the development, manufacture, sale and service of vacuum pumps, vacuum components and instruments, as well as vacuum systems. The subsidiaries in the individual countries are independent legal entities with their own management, which distribute products and provide services. Some entities within the Group additionally execute production functions. The entire product portfolio is offered by all sales subsidiaries.

Controlling of business development by corporate management is carried out on the level of the legal entities. Accordingly, the Company identifies its primary operating segments by legal entity. Due to the similarity of their economic environment, the same product portfolio sold, same sales markets, same cost structures and same sales channels, the Company basically aggregates its European and Asian subsidiaries into one reporting segment, "Europe (excluding Germany and France)" and "Asia (excluding Republic of Korea)". In contrast, the production companies in Germany, France and the Republic of Korea were presented separately each as an individual segment. This was caused by the different functions of these entities, predominantly resulting from the existing production function. For this reason the prerequisites for an aggregation with the other segments are not given. The purely sales-oriented entity in the US is thus also presented separately. After the entities acquired in 2017 had been fully integrated during the course of 2018 the segment reporting was delineated according to the aforementioned aggregation criteria, particularly with regard to the expectations for the long-term profitability development (mainly gross margins). All operating segments that individually or as a group do not have to be reported separately are included in the segment „All others." Accordingly this segment mainly includes the entities producing instruments and components that had formerly been shown in the segments „Germany" and „USA." For comparison reasons the prior year numbers were adjusted accordingly. Unchanged compared to previous year, all information is based upon the geographic location of the Group Company in question.

Transactions between segments are based upon the arm's length principle. The internal reporting on which the disclosures are based is IFRS. Segment sales and segment results in the primary reporting format initially include the effects of inter-segment transactions. These effects are eliminated in connection with the consolidation process.

SEGMENT REPORTING AS AT DECEMBER 31, 2018

in K€	Germany	France	Rest of Europe	USA	USA (production)	Republic of Korea	Rest of Asia	All Others	Consolidation	Group
Net sales	244,616	224,226	113,217	112,405	48,683	84,154	111,488	53,648	– 332,712	659,725
Third party	116,012	57,042	112,807	112,237	44,495	81,618	101,153	34,361	—	659,725
Intercompany	128,604	167,184	410	168	4,188	2,536	10,335	19,287	– 332,712	—
Operating profit	44,726	15,863	9,265	5,842	– 626	6,021	11,504	2,535	—	95,130
Financial income	– 237	– 179	4	1,318	– 1,269	42	13	– 211	—	– 519
Earnings before taxes	44,489	15,684	9,269	7,160	– 1,895	6,063	11,517	2,324	—	94,611
Segment assets	150,673	123,824	48,544	64,075	69,344	45,561	72,597	49,542	—	624,160
Thereof: Assets according to IFRS 8.33 (b)[1]	48,415	61,376	3,808	20,656	45,838	16,736	19,740	26,940	—	243,509
Segment liabilities	121,876	65,314	17,577	11,066	6,732	11,110	13,667	4,593	—	251,935
Capital expenditures:										
Property, plant and equipment[2]	6,838	7,633	477	5,030	306	1,745	2,806	7,661	—	32,496
Intangible assets	482	373	—	7	—	95	1	215	—	1,173
Depreciation[2]	4,646	3,964	431	577	754	702	1,225	1,314	—	13,613
Amortization	620	845	4	2	2,704	82	16	705	—	4,978

[1] Non-current assets other than financial instruments, deferred tax assets and prepaid pension cost
[2] Including investment properties

SEGMENT REPORTING AS AT DECEMBER 31, 2017 (ADJUSTED)

in K€	Germany	France	Rest of Europe	USA	USA (production)	Republic of Korea	Rest of Asia	All Others	Consolidation	Group
Net sales	218,432	209,902	95,355	113,439	25,673	93,658	84,938	45,361	– 299,796	586,962
Third party	110,023	45,546	95,073	113,092	22,820	91,416	77,996	30,996	—	586,962
Intercompany	108,409	164,356	282	347	2,853	2,242	6,942	14,365	– 299,796	—
Operating profit	31,145	13,871	6,803	2,614	– 2,758	11,110	5,638	2,963	—	71,386
Financial income	– 113	– 116	14	—	– 11	– 38	105	– 187	—	– 346
Earnings before taxes	31,032	13,755	6,817	2,614	– 2,769	11,072	5,743	2,776	—	71,040
Segment assets	122,357	113,641	39,889	57,325	66,852	51,430	58,490	43,377	—	553,361
Thereof: Assets according to IFRS 8.33 (b)[1]	46,738	58,171	3,799	15,325	46,225	15,343	15,475	20,975	—	222,051
Segment liabilities	113,970	70,167	7,971	6,923	5,543	13,193	8,917	5,740	—	232,424
Capital expenditures:										
Property, plant and equipment[2]	3,577	8,245	421	6,953	214	1,740	1,998	2,902	—	26,050
Intangible assets	734	631	—	4	13	—	30	216	—	1,628
Depreciation[2]	4,400	5,078	418	450	467	1,222	999	1,069	—	14,103
Amortization	620	3,316	5	—	2,145	—	12	623	—	6,721

[1] Non-current assets other than financial instruments, deferred tax assets and prepaid pension cost
[2] Including investment properties

33. Financial instruments

Fair value

The net book value of financial instruments (e.g. cash and cash equivalents, trade accounts receivable and trade accounts payable, other accounts receivable and payable) essentially equals their fair value.

Interest rate risks

The interest-bearing portion of cash and cash equivalents involves interest rate risks. All investment forms have variable interest rates and are invested on a short-term basis. There are no further investment forms that result in interest rate risks within the Pfeiffer Vacuum Group.

Due to the short investment period for cash and cash equivalents, the agreed interest rate equals the market rate. Even if the market rate should change significantly, there will be no material impact on the fair value of cash and cash equivalents because the interest rate can be adjusted after only a short period of time.

As at December 31, 2018, as in the year before, there were no more interest-sensitive financial assets. As a result of cash and cash equivalents as at December 31, 2018, an increase (decrease) in interest rate by 50 basis points would increase (decrease) earnings by K€ 542 (December 31, 2017: increase/decrease by K€ 487). As a result of financial liabilities shown as at December 31, 2018, an increase (decrease) in interest rate by 50 basis points would decrease (increase) earnings by K€ 300 (December 31, 2017: increase (decrease) by K€ 302).

Credit risks

Due to the Company's vastly heterogeneous customer structure, there are no material credit risk concentrations within the Group. Credit risks are additionally minimized through rigorous accounts receivable management and by monitoring our customers' payment patterns. Furthermore, deliveries to new customers are essentially made only after credit assessment, against payment in advance or credit limit. As a result, Pfeiffer Vacuum is able to keep the level of its allowance for doubtful accounts low, even in difficult economic times. The maximum theoretical credit risk equates the gross book value less already recognized allowance. For further details in respect to risk provision for trade accounts receivables please refer to note 16.

Liquidity risks

Due to the above-average level of cash and cash equivalents, no liquidity risks can be identified.

Foreign exchange rate risks

Approximately 53 % (2017: 56 %) of the Company's net sales are denominated in currencies other than the euro, primarily in U.S. dollars. The Company enters into foreign currency forward contracts and options to hedge the exposure of its forecasted sales against currency fluctuations. All derivative financial instruments are entered into only within this scope.

The derivatives that qualify for cash flow hedges under IFRS 9/IAS 39 are recognized either as assets or liabilities at their fair values. Changes in the values of these cash flow hedges are recorded in equity under other equity components, net of applicable taxes. These amounts are subsequently reclassified as earnings (foreign exchange gains/losses) in the same period as the underlying transactions affect operating income. For the fiscal years ended December 31, 2018, and 2017, there were no amounts that were recognized in earnings due to hedge ineffectiveness. For the same periods, no gains or losses had to be reclassified to earnings from other equity components as a result of the discontinuance of cash flow hedges. If derivatives are kept, these derivatives are marked to market at period end using quoted forward rates.. The negative fair values of the cash flow hedges recorded under other accounts payable for the period ended December 31, 2018, totaled K€ 13. Because the changes in fair value for cash flow hedges are recorded directly in equity, other equity components decreased by K€ – 9, net of taxes of K€ 4, as at December 31, 2018. As at December 31, 2017, there were no contracts to be classified as cash flow hedges. The derivatives classified as fair value hedges totaled K€ – 15 as at December 31, 2018, were recorded through the income statement, and shown with an amount of K€ 14 under other accounts receivables and with an amount of K€ 29 under other payables (December 31, 2017: K€ – 6). The Company does not engage in speculative hedging for investment purposes. As at December 31, 2018, and at December 31, 2017, no contracts held by the Company had a maturity date greater than one year.

As at December 31, 2018, the Company has entered into foreign currency forward contracts (U.S. dollar and Korean Won) totaling € 9.7 million (December 31, 2017: only Korean Won, € 1.6 million) with a remaining term of less than one year. Pfeiffer Vacuum performs ongoing credit evaluations of the parties to these contracts and enters into contracts only with well-established financial institutions. Currency risks as defined by IFRS 7 arise as a result of financial instruments being denominated in a currency that is not the functional currency and being of a monetary nature; differences resulting from the translation of financial statements into the Group's presentation currency are not taken into consideration. Relevant risk variables are generally all non-functional currencies in which Pfeiffer Vacuum has entered into financial instruments. The vast majority of non-derivative monetary financial instruments within the Pfeiffer Vacuum Group are directly denominated in functional currency. In variance thereto, exchange rate risks arise from the securities available-for-sale, from a portion of trade accounts receivable, and from derivative financial instruments. If derivative financial instruments classify as cash flow hedges, changes in the exchange rate do not impact the income statement but are recorded directly in equity. Exchange rate-based changes in securities available-for-sale are also recorded directly in equity.

Had the euro, as at December 31, 2018, depreciated 10 %, net income would have been lower by K€ 2,442 and the total equity lower by K€ 2,600. A 10 % appreciation in the euro as at that balance sheet date would have increased net income by K€ 2,160 and the total equity by K€ 2,334. Had the euro, as at December 31, 2017, appreciated 10 %, net income would have been lower by K€ 1,992. A 10 % depreciation in the euro as at December 31, 2017, would have increased net income by K€ 2,473. In all cases, net income and equity were affected mostly by the sensitivity of the U.S. dollar which is predominantly material for the Consolidated Financial Statements.

Composition of financial instruments

The following tables show the composition of financial instruments by balance sheet line item and valuation category and fair value as well as net results by valuation category.

COMPOSITION OF FINANCIAL INSTRUMENTS AS AT DECEMBER 31, 2018

in K€	Category according to IFRS 9	Net Book Value	Amounts Recognized According to IFRS 9: Amortized Cost	Fair Value Recognized in Equity	Fair Value Through Profit and Loss	Fair Value
Assets						
Cash and cash equivalents	AC	108,380	108,380	—	—	108,380
Trade accounts receivable and contract assets	AC	92,462	92,462	—	—	92,462
Other financial assets	AC	4,891	4,891	—	—	4,891
Derivative financial instruments (excl.hedges)	FVPL	14	—	—	14	14
Liabilities						
Trade accounts payable	AC	38,054	38,054	—	—	38,054
Financial liabilities	AC	60,277	60,277	—	—	60,277
Derivative financial instruments (incl. hedges)	FVOCI	13	—	13	—	13
Derivative financial instruments (excl. hedges)	FVPL	29	—	—	29	29
Totals by valuation categories:						
Amortized Costs (AC)		107,402	107,402	—	—	107,402
Fair Value through other Comprehensive Income (FVOCI)		– 13	—	– 13	—	– 13
Fair Value through Profit or Loss (FVPL)		– 15	—	—	– 15	– 15

AC = Amortized Costs;
FVOCI = Fair Value through other Comprehensive Income;
FVPL = Fair Value through Profit or Loss

COMPOSITION OF FINANCIAL INSTRUMENTS AS AT DECEMBER 31, 2017

in K€	Category According to IFRS 9	Net Book Value	Amounts Recognized According to IFRS 9: Amortized Cost	Fair Value Recognized in Equity	Fair Value Through Profit and Loss	Fair Value
Assets						
Cash and cash equivalents	AC	97,402	97,402	—	—	97,402
Trade accounts receivable	AC	80,061	80,061	—	—	80,061
Other financial assets	AC	3,840	3,840	—	—	3,840
Derivative financial instruments (incl.hedges)	FVOCI	—	—	—	—	—
Liabilities						
Trade accounts payable	AC	40,814	40,814	—	—	40,814
Financial liabilities	AC	60,329	60,329	—	—	60,329
Derivative financial instruments (incl. hedges)	FVOCI	—	—	—	—	—
Derivative financial instruments (excl. hedges)	FVPL	6	—	—	6	6
Totals by valuation categories:						
Amortized Costs (AC)		80,160	80,160	—	—	80,160
Fair Value through other Comprehensive Income (FVOCI)		—	—	—	—	—
Fair Value through Profit or Loss (FVPL)		– 6	—	—	– 6	– 6

AC = Amortized Costs; FVOCI = Fair Value through other Comprehensive Income; FVPL = Fair Value through Profit or Loss

NET RESULTS BY VALUATION CATEGORY

in K€	From Interest/ Dividends	From subsequent valuation: At Fair Value	Currency Translation	Impairment/ Reversal of Impairment	From Derecognition	Net Result: 2018	2017 [4]
Financial Instruments (AC) [1]	– 517	—	772	– 590	159	– 176	– 3,691
Derivative Financial Instruments incl. hedges (FVOCI) [2]	—	– 13	—	—	—	– 13	—
Derivative Financial Instruments excl. hedges (FVPL) [3]	—	– 15	—	—	—	– 15	– 6

[1] AC = Amortized Costs; [2] FVOCI = Fair Value through other Comprehensive Income;
[3] FVPL = Fair Value through Profit or Loss; [4] Adjusted according to the new categories (IFRS 9).

Determination of fair values of financial instruments

Determination of the fair value of derivative financial instruments (K€ – 28 as at December 31, 2018; K€ – 6 as at December 31, 2017) was done according to level 2 of the fair value hierarchy as set out in IFRS 13 "Fair Value Measurement" using accepted valuation principles and directly obtainable and up-to-date market parameters. A significant default risk is not given for these financial instruments.

In respect to the determination of fair value of financial liabilities the agreed variable interest rates are equal to the current rates customary in the market. Accordingly, the net book values correspond to their fair values.

Due to the underlying short terms fair values of trade accounts receivable and payable, other accounts receivable and payable and cash and cash equivalents equal their respective net book values.

Maturity of financial instruments

The following table shows the maturity of finance liabilities according to expiry date classes based on the maturity as of the balance sheet date. This analysis only relates to financial instruments and finance lease liabilities and includes undiscounted cash-flows. Reconciliation to the amounts in the balance sheet is thus basically not possible.

MATURITIES AS OF DECEMBER 31, 2018

in K€	up to 1 year	1 year up to 5 years	> 5 years	Total
Financial liabilities	23	60,000	—	60,023
Finance lease liabilities	72	182	—	254
Trade accounts payable	38,054	—	—	38,054

MATURITIES AS OF DECEMBER 31, 2017

in K€	up to 1 year	1 year up to 5 years	> 5 years	Total
Financial liabilities	5	60,000	—	60,005
Finance lease liabilities	76	248	—	324
Trade accounts payable	40,814	—	—	40,814

The following table shows the changes in financial liabilities that were deemed as financing activities in the Consolidated Statements of Cash flows.

NET DEBT RECONCILIATION

in K€	Loans	Lease-liabilities	Other liabilities	Total
Net book value as at 1 January 2017	—	—	224	**224**
Additions from acquisitions	5	411	4,967	5,383
Proceeds from financial liabilities	70,000	—	—	70,000
Repayment of financial liabilities	– 10,000	– 63	– 5,119	– 15,182
Thereof cash flow-relevant	60,000	– 63	– 5,119	54,818
Foreign exchange differences	—	– 24	– 72	– 96
Net book value as at 31 December 2017	60,005	324	—	60,329
Proceeds from financial liabilities	—	—	23	23
Repayment of financial liabilities	– 5	– 82	—	– 87
Thereof cash flow-relevant	– 5	– 82	23	**– 64**
Foreign exchange differences	—	12	—	12
Net book value as at 31 December 2018	60,000	254	23	**60,277**

34. Management of financial risks

With an equity ratio of 59.6 % as at December 31, 2018, even after the partly externally funded acquisitions, Pfeiffer Vacuum still has an equity base that is high. Additionally, cash and cash equivalents totaled € 108.4 million as at December 31, 2018. Despite the financial liabilities taken out totaling € 60.3 million as of December 31, 2018 (December 31, 2017: € 60.3 million) the Group shows no indebtedness on a net basis. Again, the required liquidity range to successfully develop Pfeiffer Vacuum does exist.

Liquid assets are invested on a short-term conservative basis. Due to its high equity ratio and its good liquidity, even after the acquisition, Pfeiffer Vacuum will not depend upon interest-bearing liabilities to fund its capital expenditures for replacement and expansion or the dividend payment. Moreover, there are sufficient liquidity reserves to respond to changes in the economic situation.

35. Earnings per share

COMPUTATION OF EARNINGS PER SHARE

in K€	2018	2017
Net income (in K€)	68,879	53,848
Weighted average number of shares	9,867,659	9,867,659
Number of conversion rights	—	—
Adjusted weighted average number of shares	9,867,659	9,867,659
Earnings per share in € (basic/diluted)	6.98	5.46

There were no transactions with ordinary shares or ordinary shares issued during the period between the balance sheet date of December 31, 2018, and the preparation of the Consolidated Financial Statements.

ADDITIONAL NOTES AND SUPPLEMENTAL INFORMATION

36. Related party disclosures

Related party transactions predominantly consist of all transactions with those companies included in the Consolidated Financial Statements. The amounts of these transactions are detailed in the segment reporting in NOTE 32, which also includes intercompany sales. All transactions are carried out at conditions that are usual and customary in the market and are entirely eliminated during the consolidation process. Therefore, there is no impact on financial position or results. Pfeiffer Vacuum does not have holdings in any jointly controlled entities. Furthermore, no control exists with respect to special purpose entities.

Please refer to NOTE 40 and NOTE 41 regarding the compensation paid to the members of the Management and Supervisory Board, as well as regarding potential transactions with members of these corporate bodies. Aside from their activities on the Supervisory Board, the members of the Supervisory Board do not provide individual services for the Group or any of its companies. In contrast thereto, the employee representatives on the Supervisory Board receive salaries under the rules of the respective employment contracts for their work at the Company.

In 2018, the reimbursements from Pfeiffer Vacuum Trust e.V. amounted to € 2.5 million (2017: € 2.4 million). Contributions to Pfeiffer Vacuum Trust e.V. totaled € 2.7 million in 2018 (previous year: € 3.0 million).

The law firm of Menold Bezler Partnerschaft, Stuttgart, was contracted for the last time in 2017 on the basis of usual and customary terms and conditions, to perform consulting projects. The expenses recorded in this context totaled € 0.1 million in 2017. The Chairman of the Supervisory Board Dr. Michael Oltmanns, who resigned on October 25, 2017, is a partner in that firm.

As of December 31, 2018, Dr. Karl Busch, Ms. Ayhan Busch, Ms. Ayla Busch, Mr. Sami Busch, and Mr. Kaya Busch, all Germany, together had 50.02 % of the voting rights of the Company according to the data available (December 31, 2017: 38.96 %). The shares are indirectly held through Pangea GmbH, Maulburg, Germany, and further independent legal entities belonging to the family-run Busch group. Based on unchanged arm's length conditions, goods in an aggregated purchasing value of a very low single digit million Euro amount were received from an operating company of the Busch group in the fiscal years 2018 and 2017. Busch SE, Maulburg, is the parent company of the Busch Group and thus also the parent company of Pfeiffer Vacuum.

Members of the Management and Supervisory Boards held an aggregate total of 4,937,639 shares of the Company as at December 31, 2018 (2017:3,846,765). The change resulted from the shareholdings of Busch group which are also attributable to the new Chairwoman of the Supervisory Board Ayla Busch.

37. Events after the balance sheet date

Since the beginning of the 2019 fiscal year, there have not been any significant changes in the company situation or the industry environment.

38. Personnel expenses

PERSONNEL EXPENSES

in K€	2018	2017
Wages and salaries	– 174,536	– 157,709
Social security, pension and other benefit cost	– 37,436	– 33,261
Thereof for pensions	– 17,359	– 16,395
Total	**– 211,972**	– 190,970

39. Number of Employees

Zum 31. Dezember 2018 und 2017 setzt sich die Anzahl der Mitarbeiter wie folgt zusammen:

NUMBER OF EMPLOYEES

	2018	2017
Annual average		
Male	2,559	2,330
Female	542	479
Total	3,101	2,809
Balance sheet date		
Male	2,646	2,440
Female	558	505
Total	**3,204**	2,945

The number of employees includes apprentices (December 31, 2018: 96, previous year: 113).

40. Management Board

Since November 27, 2017, the Management Board has consisted of Dr. Eric Taberlet, Diplom-Ingenieur, (Chairman of the Management Board and CEO), Ms. Nathalie Benedikt, Diplom-Betriebswirtin (Chief Financial Officer), Dr. Ulrich von Hülsen, Diplom-Physiker, and Dr. Matthias Wiemer, Diplom-Ingenieur.

Total compensation recorded in the income statement for the aforesaid members of the Management Board for fiscal 2018 totaled € 1.9 million (2017: € 1.4 million). € 1.1 million thereof related to short-term fixed compensation (2017: € 0.6 million) and € 0.6 million to short-term variable benefits (2017: € 0.5 million) and for the first time € 0.2 million to long-term variable benefits. Short-term variable benefits recorded in the income statement in 2017 were paid out in 2018. Open balances with the Board Members as of December 31, 2018, only related to the provisions for the variable compensation and totaled € 0.8 million (2017: € 0.6 million). Total pensions expenses in 2018 again totaled € 0.2 million. For active members of the Board of Management, a net pension obligation of € 1.6 million was recorded (2017: € 1.1 million). Pursuant to § 289a, Sub-Para. 2, Sentence 2, German Commercial Code ("HGB") or § 315a, Sub-Para. 2, Sentence 2, German Commercial Code ("HGB"), the compensation paid to the members of the Management Board is detailed in the compensation report (an element of the Group Management Report) GROUP MANAGEMENT REPORT PAGE 82. Additionally, the distribution of responsibilities within the Management Board is shown in the Group Management Report GROUP MANAGEMENT REPORT PAGE 77.

Benefits to former members of the Management Board (pensions) again amounted to € 0.4 million. As of December 31, 2018, the net benefit obligation recorded for this group totaled € 5.3 million (2017: € 4.7 million).

41. Supervisory Board

Pursuant to § 96, Sub-Para. 1, § 101, Sub-Para. 1, German Stock Corporation Act ("AktG"), § 4, German One-Third Participation Act ("DrittelbG") of 2004, and § 9, Sub-Para. 1, Articles of Association and Bylaws, the Supervisory Board comprises four members elected by the Annual Shareholders Meeting and two members elected by the Company's employees.

The Supervisory Board members elected by the shareholders Dr. Michael Oltmanns and Dr. Wolfgang Lust resigned from their Supervisory Board mandate with effect from October 25, 2017 and left the Supervisory Board at that time. By decision of the Wetzlar District Court on October 5, 2017, Ayla Busch was legally appointed to the Supervisory Board for the period from October 26, 2017 until the end of the next ordinary Annual General Meeting. Ayla Busch was elected as Chairwoman of the Supervisory Board at the Supervisory Board meeting on October 26, 2017. By resolution of the Wetzlar District Court dated March 19, 2018, Henrik Newerla was legally appointed as a member of the Supervisory Board for the period from March 19, 2018 until the end of the next Annual General Meeting.

Accordingly, new elections to the Supervisory Board took place at the last Annual General Meeting on May 23, 2018. The Annual General Meeting approved the proposal of the Supervisory Board and elected Ayla Busch and Henrik Newerla as full members of the Supervisory Board. In turn, at the constituent meeting of the Supervisory Board on May 23, 2018, Ms. Busch was appointed Chairwoman of the Supervisory Board.

Membership during the course of the year 2018 was therefore as follows:

- Ayla Busch (Chairwoman)
  Co-CEO of Busch SE, Maulburg
- Götz Timmerbeil (Vice Chairman),
  Certified Public Accountant and Tax Advisor
- Filippo Th. Beck,
  Attorney of Swiss law,
- Helmut Bernhardt (Employee Representative),
  Development Engineer
- Manfred Gath (Employee Representative),
  Chairman of the Employee Council
- Henrik Newerla, Retiree,
  since March 29, 2018

The following members exercised further mandates. These are supervisory board mandates unless otherwise indicated:

- Ayla Busch:
  – Busch Taiwan Corporation, New Taipei City, Taiwan, Supervisor, until January 17, 2019
  – Busch Clean Air S.A., Pruntrut, Switzerland, Member of the supervisory organ, until December 31, 2018
  – Busch Vakuumteknik A/S, Ry, Denmark, Member of the supervisory organ, until January 16, 2019
  – Busch Vacuum Israel Ltd., Kiryat Gat, Israel, Director, until December 31, 2018
  – Busch Vacuum India Pvt. Ltd., Manesar, India, Non-Executive Director, until December 31, 2018
  – Busch Consolidated Inc., Virginia Beach, United States, Non-Executive Director, until December 31, 2018
  – Busch Vacuum South Africa (Pty.) Ltd., Johannesburg, South Africa, Non-Executive Director, until December 31, 2018

- Götz Timmerbeil:
  – Arena Gummersbach GmbH & Co. KG, Gummersbach (Deputy Chairman)
  – Richard Stein GmbH & Co. KG, Engelskirchen, (Chairman of the Advisory Board), from July 1, 2018
  – VfL Handball Gummersbach GmbH, Gummersbach (Chairman of the Advisory Board), until June 30, 2018

- Filippo Th. Beck:
  – Candoria Group, Baar (Switzerland), member of the supervisory organ of Candoria Holding AG, president of the supervisory organ of Progresa Holding AG and Sendaya Holding SA (formerly: Candoria Luxembourg Holding SA), Luxembourg;
  – Tenro Group, Bottmingen (Switzerland), member of the supervisory organ of various companies in the group,
  – Biamathea AG, Basel (Switzerland), member of the supervisory organ,
  – Polyterra Liegenschaften AG in liquidation, Küsnacht (Switzerland), member of the supervisory organ and liquidator,
  – Tainn-Immobilien AG, Berne (Switzerland), member of the supervisory organ,
  – Bellavista Services AG, member of the supervisory organ, from April 10, 2018,
  – IKFE Properties I AG, Zurich (Switzerland), president of the supervisory organ, until November 1, 2018

The members of the Supervisory Board received a fixed short-term remuneration of K€ 308 (previous year: K€ 309) in the period under review. Open balances with the Supervisory Board Members as of December 31, 2018, totaled € 0.1 million (2017: –).Pursuant to § 289a, Sub-Para. 2, Sentence 2, German Commercial Code ("HGB") or § 315a, Sub-Para. 2, Sentence 2, German Commercial Code ("HGB"), the compensation paid to the members of the Supervisory Board is detailed in the compensation report (an element of the Group Management Report)
GROUP MANAGEMENT REPORT PAGE 85.

42. Exempting provision under § 264 Sub-Para. 3, German Commercial Code ("HGB")

Pfeiffer Vacuum GmbH, Asslar, Germany, is included in the Consolidated Financial Statements of Pfeiffer Vacuum Technology AG. Accordingly, this company has made use of the exempting provision under § 264, Sub-Para. 3, German Commercial Code.

43. Audit fees for independent auditors

The expenses for services rendered by the auditor of the Consolidated Financial Statements recorded in the statements of income were as follows for fiscal 2018 and 2017:

AUDIT FEES FOR THE AUDITOR OF THE CONSOLIDATED FINANCIAL STATEMENTS

in K€	2018	2017
Fees resulting from:		
Audit services	– 836	– 1,121
Other certification and consulting services	—	– 27
Tax advisory services	– 26	– 6
Other services	– 299	—
Total	**– 1,161**	– 1,154

The total for the year 2018 comprised also fees to PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main in the amount of K€ 439 for audit services, K€ 21 for tax advisory services and K€ 268 for other services (2017: Ernst & Young GmbH, Wirtschaftsprüfungsgesellschaft, Eschborn/Frankfurt am Main: K€ 814 for audit services).

The audit of the Consolidated Financial Statements as of December 31, 2018, was carried out by PricewaterhouseCoopers GmbH, Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, while the prior year 2017 was audited by Ernst & Young GmbH, Wirtschaftsprüfungsgesellschaft, Eschborn/Frankfurt am Main. Significant other services rendered by the auditor for Pfeiffer Vacuum Technology AG related to advisory in connection with the application of new laws and with the enhancement of the compliance management system.

44. German Corporate Governance Code/ Declaration pursuant to § 161, German Stock Corporation Act (“AktG”)

On December 5, 2018, the Management and Supervisory Boards of Pfeiffer Vacuum Technology AG submitted the Statement of Compliance for the year 2018 required pursuant to § 161 of the Germany Stock Corporation Act (“AktG”). It was made permanently accessible to shareholders on the Corporation’s website ↗ GROUP.PFEIFFER-VACUUM.COM.

Since the submission of the last statement of compliance on January 24, 2018, Pfeiffer Vacuum Technology AG complies with all recommendations of the German Corporate Governance Code, as amended in February 2017, with the following two exceptions:

- The German Corporate Governance Code recommends a deductible for the Supervisory Board’s D&O insurance (Paragraph 3.8). The Supervisory Board’s actual D&O insurance does not contain a deductible. A deductible would not improve the Supervisory Board’s overall motivation and sense of responsibility as the members work for the benefit of the Group.
- The German Corporate Governance Code recommends that a term limit is established for the period on the Supervisory Board (Paragraph 5.4.1). In the financial year 2018, the Supervisory Board has set a specified limit of 15 years for the period of membership on the Supervisory Board. All members of the Supervisory Board fulfil this requirement, with the exception of Mr. Götz Timmerbeil; the Supervisory Board made an exception for him, since he possesses a high level of expertise and many years of knowledge of the Company, which the Supervisory Board would not like to forgo at this point in time and after the resolved changes to the Supervisory Board in the past three years.

45. Authorization for issuance of Consolidated Financial Statements

Through a resolution by the Management Board on February 28, 2019, the Consolidated Financial Statements were authorized for issuance.

Asslar, February 28, 2019

The Management Board

Dr. Eric Taberlet

Nathalie Benedikt

Dr. Matthias Wiemer

Dr. Ulrich von Hülsen

CERTIFICATION OF LEGAL REPRESENTATIVES

To the best of our knowledge, and in accordance with the applicable reporting principles, the Consolidated Financial Statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group management report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Asslar, February 28, 2019

The Management Board

Dr. Eric Taberlet	Nathalie Benedikt	Dr. Matthias Wiemer	Dr. Ulrich von Hülsen

INDEPENDENT AUDITOR'S REPORT

To Pfeiffer Vacuum Technology AG, Asslar

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Pfeiffer Vacuum Technology AG, Asslar, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at December 31, 2018, and the consolidated statement of comprehensive income, consolidated statement of income, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from January 1, 2018 to December 31, 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of Pfeiffer Vacuum Technology AG for the financial year from January 1, 2018 to December 31, 2018. In accordance with the German legal requirements, we have not audited the content of those parts of the group management report listed in the "Other Information" section of our auditor's report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to § 315e Sub-Para. 1 HGB ["Handelsgesetzbuch": German Commercial Code] and full IFRSs and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at December 31, 2018, and of its financial performance for the short financial year from January 1, 2018 to December 31, 2018, and

- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of those parts of the group management report listed in the "Other Information" section of our auditor's report.

Pursuant to § 322 Sub-Para. 3, sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to sub-sequently as "EU Audit Regulation") in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 Sub-Para. 2 point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 Sub-Para. 1 of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the short financial year from January 1, 2018 to December 31, 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

1. Recoverability of goodwill

2. Impact of the initial application of IFRS 15 on revenue recognition

Our presentation of these key audit matters has been structured in each case as follows:

I. Matter and issue

II. Audit approach and findings

III. Reference to further information

Hereinafter we present the key audit matters:

1. Recoverability of goodwill

I. In the Company's consolidated financial statements goodwill amounting in total to EUR 80.7 million (12.9 % of total assets) is reported under the Intangible assets balance sheet item. Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of the groups of cash-generating units to which the relevant goodwill is allocated. The carrying amount of the relevant cash-generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective group of cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the adopted medium-term business plan of the Group forms the starting point which is extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments and assumptions about the development of macroeconomic factors are also taken into account. The discount rate used is the weighted average cost of capital for the respective group of cash-generating units. The impairment test determined that no impairments were necessary.

The outcome of this valuation is dependent to a large extent on the estimates made by the members of the management board with respect to the future cash inflows from the respective group of cash-generating units, the discount rate used, the rate of growth and other assumptions, and is therefore subject to considerable uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance in the context of our audit.

II. As part of our audit, we assessed the methodology used for the purposes of performing the impairment test, among other things. After matching the future cash inflows used for the calculation against the adopted medium-term business plan of the Group, we assessed the appropriateness of the calculation, in particular by reconciling it with general and sector-specific market expectations. In addition, we assessed the appropriate consideration of the costs of Group functions. In the knowledge that even relatively small changes in the discount rate applied can have a material impact on the value of the entity calculated in this way, we focused our testing in particular on the parameters used to determine the discount rate applied, and assessed the calculation model. In order to reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the Company. We verified that the necessary disclosures were made in the notes to the consolidated financial statements relating to groups of cash-generating units for which a reasonably possible change in an assumption would result in the recoverable amount falling below the carrying amount of the cash-generating units including the allocated goodwill.

Overall, the valuation parameters and assumptions used by the members of the management board are in line with our expectations and are also within the ranges considered by us to be reasonable.

III. The Company's disclosures on the balance sheet item Intangible assets are contained in section 11 of the notes to the consolidated financial statements.

2. Impact of the initial application of IFRS 15 on revenue recognition

I. Revenues totaling EUR 659.7 million are reported in the consolidated statement of income in the Company's consolidated financial statements. The revenues result in particular from the sale of turbo pumps, instruments and components, systems, backing pumps and the provision of services in particular in connection with maintenance. The Company has established extensive systems and processes throughout the Group for the purposes of accurately recognizing and deferring revenue. In this financial year, due to the first-time adoption of the new accounting standard on revenue recognition (IFRS 15) the Company analyzed in detail the previous revenue recognition and deferral of revenue. The first-time adoption of IFRS 15 required the Group-wide review of systems and processes in line with the new rules for revenue recognition and deferred revenue as well as a new assessment of existing contracts throughout the Group.

The first-time adoption of IFRS 15 throughout the Group is considered to be complex. Against this background, revenue recognition was of particular significance during our audit.

II. Our audit included assessing the appropriateness and effectiveness of the processes and controls established by the Group within the Group's internal control system for recognizing and deferring revenue during the entire financial year, including the IT systems used.

In addition, as part of our audit and together with the help of internal specialists we assessed the Company's analyses of the impact of the first-time adoption of IFRS 15. With the knowledge that the calculation of the effects of the first-time adoption is primarily based on the members' of the management board assessments and assumptions, and that these have a significant effect on the amount of reported revenues, we in particular assessed the information used as well as the appropriateness of the procedure used to calculate the impact of the first-time adoption of IFRS 15. We also examined contracts with customers, reviewed the identification of performance obligations, and evaluated whether these services are performed over time or at a point in time. In connection with the disclosure requirements arising from the first-time adoption of IFRS 15, we assessed among other things the appropriateness of the procedure used, including the impact analyses conducted within the Group, and assessed the estimates and judgments made by the members of the management board with respect to the recognition and deferment of revenue for the various business models of the Group companies.

We verified the appropriateness of the systems, processes, and controls which are in place, and that the estimates and assumptions made by the members of the management board are sufficiently documented and substantiated to ensure that revenue is properly recognized in accordance with IFRS 15 as applied for the first time.

III. The Company's disclosures on revenues as well as the impact of the first-time adoption of IFRS 15 are contained in sections 3, 4, 7 and 32 of the notes to the consolidated financial statements.

Other Information

The members of the management board are responsible for the other information. The other information comprises the following non-audited parts of the group management report:

- the group statement on corporate governance pursuant to § 315d HGB included in section "Corporate Governance Report and Declaration on the Corporate Governance" of the group management report
- the corporate governance report pursuant to No. 3.10 of the German Corporate Governance Code

The publication "Annual Report 2018" and the separate non-financial group report pursuant to § 315b Sub-Para. 3 HGB are expected to be made available to us after the date of the audit opinion.

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the Members of the Management Board and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The members of the management board are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Sub-Para. 1 HGB and full IFRSs and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition the members of the management board are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the members of the management board are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the members of the management board are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the members of the management board are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.

- Evaluate the appropriateness of accounting policies used by the members of the management board and the reasonableness of estimates made by the members of the management board and related disclosures.

- Conclude on the appropriateness of the members' of the management board use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Sub-Para. 1 HGB and full IFRSs.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.

- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

- Perform audit procedures on the prospective information presented by the members of the management board in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the members of the management board as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on May 23, 2018. We were engaged by the supervisory board on October 10, 2018. We have been the group auditor of the Pfeiffer Vacuum Technology AG, Asslar, without interruption since the financial year 2018.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Christian Kwasni.

Frankfurt am Main, February 28, 2019

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Christian Kwasni	ppa. Daniel Spengemann
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

CONSOLIDATED STATEMENTS OF INCOME

6-YEAR-OVERVIEW

in K€	2018	2017	2016	2015	2014	2013
Net sales	659,725	586,962	474,244	451,521	406,642	408,727
Cost of sales	– 424,517	– 376,945	– 293,769	– 276,010	– 263,259	–259,345
Gross profit	**235,208**	210,017	180,475	175,511	143,383	149,382
Selling and marketing expenses	– 68,371	– 63,313	– 55,330	– 59,850	– 52,789	–51,343
General and administrative expenses	– 49,106	– 48,976	– 35,733	– 35,838	– 29,853	–29,407
Research and development expenses	– 28,663	– 27,763	– 26,282	– 25,479	– 23,936	–22,900
Other operating income	11,302	10,345	10,818	13,297	10,176	8,268
Other operating expenses	– 5,240	– 8,924	– 5,972	– 6,882	– 2,237	–3,477
Operating profit	**95,130**	71,386	67,976	60,759	44,744	50,523
Financial expenses	– 727	– 693	– 662	– 691	– 978	–1,217
Financial income	208	347	301	383	507	644
Earnings before taxes	**94,611**	71,040	67,615	60,451	44,273	49,950
Income taxes	– 25,732	– 17,192	– 20,583	– 18,535	– 11,854	–15,135
Net income	**68,879**	53,848	47,032	41,916	32,419	34,815
Earnings per share (in €)	**6.98**	5.46	4.77	4.25	3.29	3.53
Number of shares (weighted average)	9,867,659	9,867,659	9,867,659	9,867,659	9,867,659	9,867,659

CONSOLIDATED STATEMENTS OF INCOME

6-YEAR-OVERVIEW

in K€	2018	2017	2016	2015	2014	2013
Profitability figures						
Gross margin	35.7%	35.8 %	38.1 %	38.9 %	35.3 %	36.5 %
Operation profit margin	14.4%	12.2 %	14.3 %	13.5 %	11.0 %	12.4 %
After-tax return on sales	10.4%	9.2 %	9.9 %	9.3 %	8.0 %	8.5 %
Sales by region						
Europe	246,971	222,547	188,860	187,003	183,181	182,070
Asia	246,624	220,304	174,604	151,511	130,323	143,863
The Americas	165,942	143,808	110,542	112,412	92,636	81,447
Rest of world	188	303	238	595	502	1,347
Sales by product						
Instruments and components	193,755	160,621	105,520	98,777	96,899	101,151
Turbopumps	192,111	173,419	144,518	144,777	124,693	125,351
Backing pumps	143,414	132,767	114,989	102,381	89,419	92,075
Service	111,582	107,800	99,698	96,730	84,967	81,653
Systems	18,863	12,355	9,519	8,856	10,664	8,497

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FURTHER INFORMATION

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FINANCIAL GLOSSARY

CASH AND CASH EQUIVALENTS
Indicates the cash and cash equivalents provided by the various capital flows and is the result of the cash flow accounting.

CASH FLOW FROM FINANCING ACTIVITIES
Indicates the balance of cash and cash equivalents provided to or used by a company in connection with transactions involving shareholders' equity or outside capital.

CASH FLOW FROM INVESTMENT ACTIVITIES
Indicates the balance of cash and cash equivalents that a company has invested or received in connection with the acquisition or sale of financial and tangible assets.

CASH FLOW FROM OPERATING ACTIVITIES
Indicates the change in cash and cash equivalents resulting from operative business during the period under review.

CORPORATE GOVERNANCE
The organizational structure and content of the way companies are managed and controlled.

DIVIDEND YIELD
Indicates the ratio between a dividend and a defined share trading price – typically the year-end trading price. The dividend yield expresses the magnitude of the effective yield of the capital invested in shares.
Calculation:
Dividend ÷ Trading Price x 100

EQUITY RATIO
Describes the relationship between shareholders' equity and total capital. The more shareholders' equity that is available to a company, the better its credit rating will typically be.
Calculation:
Shareholders' Equity ÷ Balance Sheet Total x 100

FREE FLOAT
The free float includes all shares that are not held by major shareholders; i. e. shares that can be acquired and traded by the general public. Under Deutsche Börse's definition, shares totaling over 5 percent of total equity or over 25 percent held by investment funds are not considered to be part of the free float.

GROSS MARGIN
Indicates the ratio between gross profit and net sales, enabling conclusions to be drawn regarding a company's production efficiency.
Calculation:
Gross Profit ÷ Net Sales x 100

GROSS PROFIT
The result of net sales less cost of sales.
Calculation: Net Sales – Cost of Sales

MARKET CAPITALIZATION
Indicates the current market value of a company's shareholders' equity on the stock exchange.
Calculation:
Number of Shares Outstanding x Trading Price

OPERATING PROFIT (EBIT)
Operating profit (earnings) before interest and taxes.
Calculation:
Net Income ± Financial Income / Expenses ± Income Taxes ± Gain / Loss from Investment

OPERATING PROFIT MARGIN (EBIT MARGIN)
The ratio between operating profit and net sales – the higher the ratio, the higher the profitability of operating activities.
Calculation:
Operating Profit (EBIT) ÷ Net Sales x 100

RESEARCH AND DEVELOPMENT EXPENSE RATIO
Is an expression of the relationship between the volume of research and development expenses and the volume of net income generated. Is thus considered to be an indicator of a company's willingness to invest in its own innovation activities.
Calculation:
R & D Expenses ÷ Net Income x 100

RETURN ON CAPITAL EMPLOYED (ROCE)
Ratio between operating profit and the total capital employed during a period.
Calculation:
EBIT ÷ (Net) Assets + Working Capital x 100

RETURN ON EQUITY
Provides information about the yield on the equity provided by shareholders.
Calculation:
Net Income ÷ Shareholders' Equity x 100

WORKING CAPITAL
A liquidity parameter that indicates the surplus of a company's assets that are capable of being liquidated short term (within one year) over its short-term liabilities.
Absolute calculation:
Current Assets – Short-Term Borrowed Capital;
Relative calculation:
Current Assets ÷ Short-Term Borrowed Capital x 100

FINANCIAL CALENDAR 2019

↗ INVESTOR RELATIONS

Tuesday, May 7
Q1 2019 Financial Results

Thursday, May 23
Annual General Meeting

Tuesday, August 6
H1 2019 Financial Results

Tuesday, November 5
Q3 2019 Financial Results

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Only the German version is binding.

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↗ GROUP WEBSITE