GBC AG
Investment Research

Research Report (Initial Coverage)

nanofocus
see more

From innovation partner to production partner

-

Margin increases to be expected due to economies of scale

Target price: € 2.90

Recommendation: Buy

IMPORTANT NOTICE:
Please take note of the disclaimer/risk notice
as well as the disclosure of conflicts of interest as defined in Section 34b of the German Securities Trading Act (WpHG) starting on page 35

Completion: 18-Nov-16 **Initial release: 21-Nov-16**

NanoFocus AG*4,5a,5b,6a,7,10,11

Rating: Buy
Target price: € 2.90

Current price: 1.79
18-Nov-2016 / ETR

Currency EUR

Key information:

ISIN: DE0005400667
WKN: 540066
Ticker symbol: N2F

pre-money shares[3]: 4.53
post-money shares[3]: 6.63

Post-money market cap[3]: 11.87
EV post-money[3]: 9.95
[3] in million / in million €

Free float: 62.7%

Transparency level:
Entry Standard/m:access

Market segment:
Open market / OTC market

Accounting standard:
German Commercial Code (HGB)

Financial year: 31/12

Designated sponsor:
Süddeutsche Aktienbank AG

Analysts

Felix Gode, CFA
gode@gbc-ag.de

Lukas Spang
spang@gbc-ag.de

* Catalog of potential conflicts of interest on page 36

Company Profile

Sector: Technology

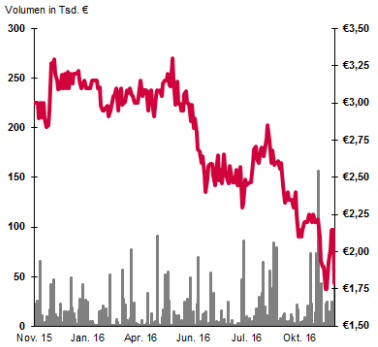
Focus: Surface measurement and analysis

Employees: 79 (30-Nov-16)

Founded: 1994

Head office: Oberhausen

Management Board: Jürgen Valentin (CTO), Marcus Grigat (COO), Joachim Sorg (CFO)



NanoFocus AG is a pioneer and technology leader for a new generation of high-precision optical 3D surface analysis tools for laboratory and production applications. The company takes the surface analysis market to a new level with its user-friendly, robust and efficient tools, enabling research and industrial uses to produce three-dimensional images for the inspection of surfaces featuring structures in the micro and nanometer range. As a developer, manufacturer, and distributor, NanoFocus has many years and patented knowledge in the area of high-resolution optical 3D measurement technology and analysis: Excellent hardware solutions, complemented by powerful software packages comprise the portfolio of NanoFocus AG. The innovative systems from NanoFocus also allow for extremely fast, non-contact and also simple measurement of the 3D topography with resolutions in the nanometer range. A great number of well-known companies form the automotive and electronics industry, medical technology, renowned research institutions and a great number of nano and micro technologies companies place their trust in solutions from NanoFocus.

The key figures refer to NanoFocus AG, and not the Group:

Income Statement in million € / FY end	31-Dec-15	31-Dec-2016e	31-Dec-2017e	31-Dec-2018e
Net profit	10.80	11.50	14.00	15.80
EBITDA	0.02	0.41	1.30	1.65
EBIT	-1.12	-0.14	0.70	1.00
Profit/loss for the year	-1.60	-0.26	0.29	0.48
Key figures in EUR				
Earnings per share	-0.38	-0.04	0.04	0.07
Dividend per share	0.00	0.00	0.00	0.00
** For the number of shares 2016-2018, an increase in capital of 2.1 million shares is considered, the number of shares therefore is 6.63 million shares*				
Key figures (post-money consideration)				
EV/Sales	0.92	0.87	0.71	0.63
EV/EBITDA	497.64	24.04	7.67	6.03
EV/EBIT	-8.89	-73.18	14.28	9.95
P/E	-7.42	-45.65	40.92	24.40
P/B	0.87			

Financial calendar:
11/21/2016-11/23/2016 Equity Capital Forum, Frankfurt
12/7/2016: 22nd MKK

**latest research published by GBC:
Date: Publication/target price in EUR/recommendation

** The research reports listed above can be found at www.gbc-ag.de or requested from GBC AG, Halderstr. 27 D86150 Augsburg.

EXECUTIVE SUMMARY

- Over the past few years, NanoFocus AG developed from a laboratory instrument manufacturer to a supplier of modern industrial measurement technology. High research and development costs were incurred to set up the product portfolio in its current state. In the past five years alone, R&D expenditures totaled over €8 million. While so far individual systems for lab use represented the majority of sales revenue, the products of the company can now be integrated alongside and in the running production process.

- The product-side positioning of NanoFocus AG gives the company new growth opportunities for the coming years. Compared to individual systems, systems integrated in the production process account for a significantly higher unit price per line, which results in order volumes from now on potentially being many times greater.

- The development of sales and earnings performance of the past years was shaped strongly by the development of the product portfolio. While NanoFocus showed a stable revenue basis in the segments of Standard/Laboratory as well as OEM, there was a volatile development in sales in the semiconductor and automotive segments. This could be primarily traced to repeated postponements for commissioning pilot orders, which however were outside of the company's sphere of influence. The effects named also manifested in the results. As far as no revenue shifts were recorded, the company consistently showed EBITDA margins in the area of the 10% mark and thus already exhibited a good underlying profitability.

- In the coming years, we assume that the increased orders from the automotive and semiconductor areas will result in sales revenue picking up significantly. The strong technological basis, combined with the inline-ability of the solutions, should meet an increased demand from the customer sectors, since quality control integrated in the production process in gaining in importance in the framework of the increasing complexity of the products and efficiency requirements.

- While order postponements could again be recorded in November, we assume that sales revenue amounting to €11.50 million will be achieved, 6.5 % more than in the previous year. For the years 2017 and 2018 we expect further increases of 21.7% and 12.9% respectively. For EBITDA, we already are expecting a significant increase to €1.30 million in 2017, followed by further improvements to €1.65 million in FY 2018 with an EBITDA margin of 10.4 % at that time.

- **In the framework of our post-money assessment, we have determined a fair value of € 2.90 per share for the shares of NanoFocus AG. Based on the subscription prices in the framework of the capital increase of € 1.75, this results in an upside potential of around 65%. It should be borne in mind that we assume that for a faster market penetration in line with the current extension of the sales structures, higher economies of scale and therefore also higher margin levels could be possible. Overall, we assess NanoFocus AG as a very interesting company with promising technology. Combined with the attractive share price potential, we give the recommendation BUY.**

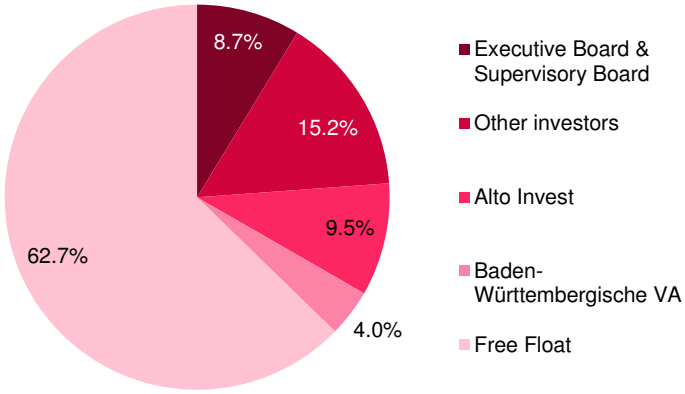
TABLE OF CONTENTS

COMPANY

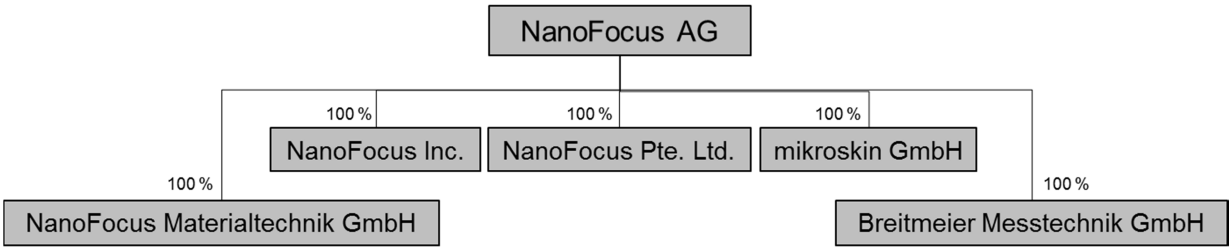
Shareholder Structure (Pre-Money)

Shareholders in %	30-Jun-16
Executive Board and Supervisory Board	8.7%
Other investors	15.2%
Alto Invest	9.5%
Baden-Württembergische VA	4.0%
Free float	62.7%
Total	100.0%

Source: NanoFocus, GBC



Company Structure



Source: NanoFocus, GBC

Reference Customers

Source: NanoFocus

Management Team

Jürgen Valentin – Chief Technology Officer (CTO) and Spokesman of the Management Board

After graduating from high school, Dipl.-Phys. Jürgen Valentin (*1964) completed training as a materials tester at Siemens AG in Mülheim an der Ruhr. Upon graduating in physics and working for two years as a research associate at the University of Duisburg, he took on the management of Software and Analytics of NanoFocus Messtechnik GmbH in 1995.

As Chief Technology Officer, Jürgen Valentin is responsible for the technology and business development areas. He has also assumed the role of the Spokesman of the Management Board since January 1, 2010.

Marcus Grigat – COO

Dipl.-Ing. Marcus Grigat (*1970) completed training as an electrical systems installer and electronics specialist for power systems at Thyssen AG in Duisburg-Hamborn and studied electrical engineering (information technology) at the University of Duisburg from 1990 to 1995. After working as a research assistant at the university for one year, he took on the management of Measurement and Control Technology at NanoFocus Messtechnik GmbH.

As COO, he is responsible for the development and production areas.

Joachim Sorg – CFO

After nine years in the credit sector as a savings bank expert, Joachim Sorg (*1971) switched to the investor relations area of the CRM manufacturer Gedys Intraware AG (subsidiary of today's GROUP Business Software Europa GmbH, General Standard) in 1999, followed by a four-year stint working in IR in Prime Standard at Internet Multimediaagentur Syzygy AG. After participating in DVFA-CIAA training and project activity at F+P Multimedia AG (now MergedMedia AG; Entry Standard), he switched to the relationship management area of AHBR AG (now COREALCREDIT BANK AG/subsidiary of Aareal Bank AG), a provider of home loans, in the banking sector. Since the beginning of 2006, he has been the head of the investor relations area at NanoFocus AG. He also took on the responsibility of the corporate affairs area in 2007.

As member of the Management Board, he has been responsible for the administration, finance and controlling areas since 2009 and has been heading the "Standard" business unit since 2015. Mr. Sorg became a certified Fixed Income Relations Officer (FIRO) in 2013 and a qualified M&A Manager in 2015.

Business Activities

Company history at a glance

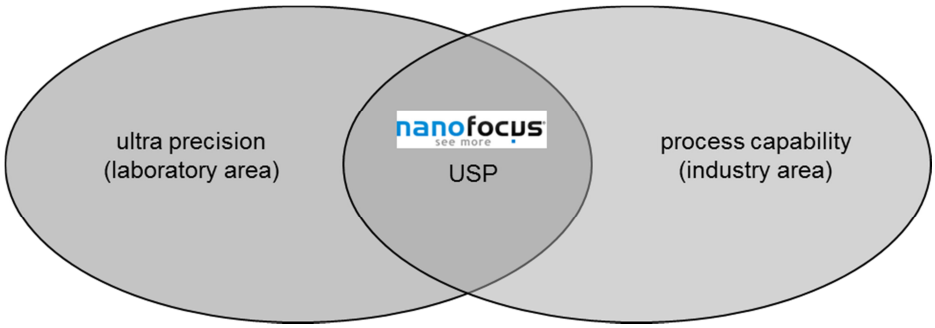
Year	Event
1994	NanoFocus Messtechnik GmbH founded in Duisburg
1997	Foundation of OM Engineering GmbH
2001	Merger of OM Engineering GmbH with NanoFocus GmbH and change in legal form to NanoFocus AG
2003	Move to Oberhausen
2005	Publicly listed with Entry Standard qualification in the Open Market segment of the Frankfurt Stock Exchange
2009	Take-over of the µsprint technology from Siemens
2011	Introduction of new software platform µsoft metrology for system control
2014	Introduction of µsurf expert, the first fully automatable system
2015	Take-over of 100 % of the shares of Breitmeier Messtechnik GmbH

Source: NanoFocus, GBC

Business model

NanoFocus AG is a company that specializes in 3D surface metrology. The company develops and produces high-precision optical 3D measurement systems and the accompanying software. The devices and systems from NanoFocus AG mainly serve for the contact-free characterization of technical surfaces as well as for measuring 3D topographies, achieving resolutions in the micro and nanometer range. This means that it is possible to measure the very small surface compositions and irregularities, etc. To this end, the devices from NanoFocus AG are mainly used for quality assurance. The potential applications are extremely varied and conceivable for nearly all areas.

NanoFocus AG has developed strongly in the past 20 years, transforming from a pure laboratory instrument manufacturer into a supplier of modern industrial measurement technology. While in the beginning the company mainly offered systems for laboratory use, it is now possible to integrate the powerful measurement systems into production. This means that, for example, semiconductor manufacturers or automotive manufacturers can integrate the systems from NanoFocus AG alongside and into the running production process (inline), which not only allows for broadly set up quality inspections, but also primarily without interrupting the process. Especially in view of production efficiency, this is an important aspect and therefore of high interest to the customer base. NanoFocus occupies a highly attractive niche with the combination of ultra-high precision with the simultaneous industrial process capability of the systems. Therefore, NanoFocus operates in a segment that is much less competitive than for example the laboratory area, which NanoFocus also serves.



Source: NanoFocus, GBC

Technology spectrum

In line with the further development of the product range over the past years, NanoFocus can today offer all relevant technologies for production monitoring, starting from 3D confocal systems and laboratory instruments up to tactile production measurement equipment as well as complementary optical procedures. In addition, NanoFocus also develops the associated software solutions itself, which makes it possible to offer tailored software solutions to the customers that can be adapted when needed.

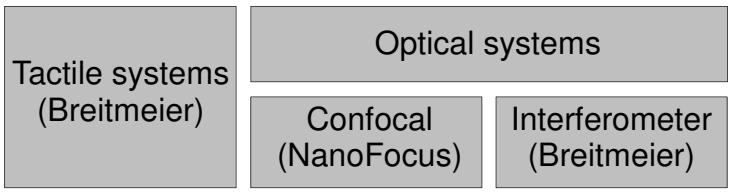
The application spectrum of the NanoFocus solutions is very extensive and is available for a broad range of measurement tasks. For example, roughness measurements or defect detections can be performed. But the solutions also make it possible to determine the form, waviness, volume and step height.

The technological scope of the products from NanoFocus AG are split into the two main core areas of **optical systems** and **tactile systems**. The original area of NanoFocus is confocal systems, that is optical systems. In this process, light acts as the measuring medium based on reflection and absorption, making the process contact-free.

With the takeover of Breitmeier Messtechnik GmbH, interferometers were added to the optical systems. Interferometers perform measurements by way of superimposition of light waves, whereby the waves provide corresponding information that can be assessed.

The takeover of Breitmeier also extended the technological spectrum of NanoFocus AG with the tactile measurement systems area. Tactile measurement systems are used for industrial purposes and are based on scanning the material surface with touch-activated sensors that scan the surface of the material point for point. Tactile systems work with very high precision so that the process is well-suited for industrial quality inspections.

Technical core areas of NanoFocus AG:



Source: NanoFocus, GBC

Overall, NanoFocus AG can now offer the most important industrial measurement processes (outside of vision systems) with the takeover of Breitmeier Messtechnik GmbH.

Product lines

NanoFocus AG unites the three product lines µsurf, µscan and µsprint in its portfolio. **µsurf** products are high-resolution, area-measuring 3D confocal microscopes that are primarily used in research and development or in-line for quality control. The µsurf products are ideally suited for automatable 3D measurement of roughness, topographies, coating thicknesses and volume, whereby it is possible to measure a large bandwidth of different materials regardless of their surface compositions. The roots of NanoFocus AG are also in this area.

The measurement systems of the µsurf series can be delivered in multiple designs, depending on the customer requirements. Starting with table-top devices for laboratory use to transportable devices for the use for non-transportable objects (such as body panels)

up to the integration into production machines and analysis systems, all variations are possible. The measuring head is even optimized for use on a robot arm.

µscan technology includes products that can cover large measurement distances, in particular. Either two-dimensional or three-dimensions measurements of surface topographies can be performed. Using different point sensors, the optical 3D scanning profilometers measure quickly and precisely across large measurement areas, with precision down to the low nanometer range. Compared to tactile systems, the **µscan** technology is up to 100 times faster, which is why it now is used in many industry sectors for production-related quality inspections or in research and development.

The **µsprint** products have the advantage that they work extremely quickly. Therefore, the products can be used everywhere where there are high throughput rates, but precise measurements are still required. The automotive and semiconductor industry comes to mind here. The systems from NanoFocus can be run as standalone solutions, but they are also inline-capable, that is they can be integrated in production. The **µsprint** products are equipped with a SISCAN sensor that is the fastest confocal sensor in the world. Siemens purchased the SISCAN technology in 2009 and has been building up the **µsprint-**product line ever since.

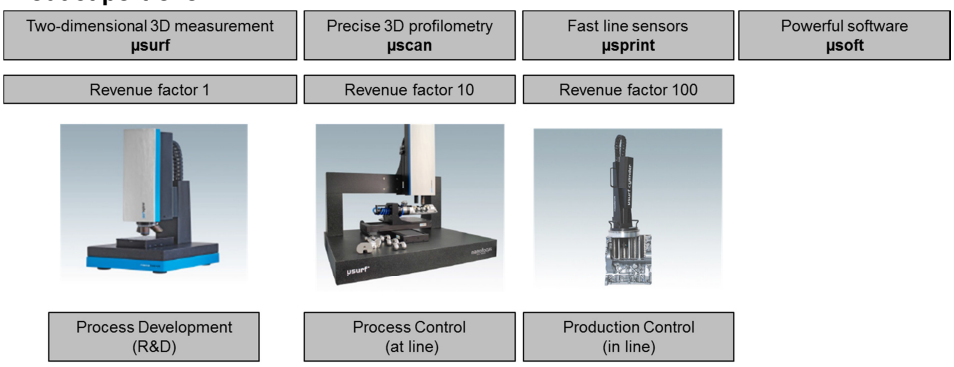
As for µsurf devices, the µsprint measurement devices can also be supplied in different designs. For example, the µsprint solutions are available both as table-top devices for laboratories and as fully automated systems with handling for the use in industrial production. Finally, the µsprint sensor can also be used in production machines from OEM manufacturers (OEM solution). This is a major opportunity for the future development of NanoFocus AG.

Finally, the products of NanoFocus AG are equipped with proprietary software that controls the mechanical and optical components, and records, processes and assesses the data. The measurement and control software is not only easy to use, but also provides comprehensive analysis and assessment tools, sector-specific software packages as well as a database-based and industry-capable automation software. The software solutions are combined under the product category **µsoft** and represent an important core competence of NanoFocus AG.

In the past years, high research and development costs were incurred to build up the product portfolio into its current form. In the past five years alone, R&D expenditures totaled over €8 million. With the current portfolio, the company is positioned extremely well to benefit from the developments in the target sectors. The range of services was rounded off in particular by moving towards the process capability of the solutions. Against this backdrop, the company therefore for now is not planning on implementing any more fundamental developments. Nevertheless, the existing product portfolio is still being developed.

The advancement of the company over the past years to fully process-capable solutions primarily has implications for sales. While the previous solutions were available for use stand-alone, the in-line solutions of the company noticeably allow for higher revenue factors since the purchase quantities correspondingly are higher in industrial series production. In this respect, the most recent development level of NanoFocus AG should be rated as setting the tone for the future.

Product portfolio



Source: NanoFocus, GBC

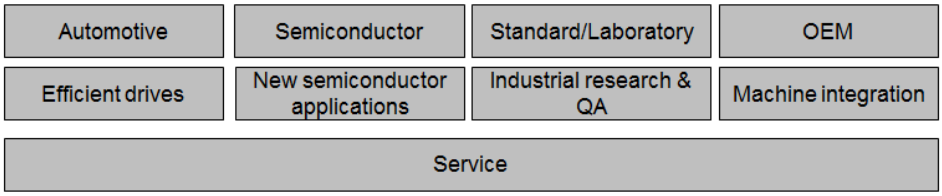
The systems differ significantly in their pricing structure as well, with which NanoFocus AG has developed additional revenue potential by further developing its solutions in the past years. While individual devices for R&D purposes are in the price range of € 80,000 to € 150,000 per system, products for statistical production monitoring are sold at prices of up to € 250,000. For inline solutions, generatable sales for the equipment of a product line are up to € 600,000.

Business units

NanoFocus has structured its business model into the four business units Automotive, Semiconductor, Standard/Laboratory and OEM since 2014 due to differing customer requirements. The reporting of the company also takes place based on these operative units. The automotive and semiconductor segments are very promising customer groups for the coming years. However, customers from these areas are already some of the most important customers of NanoFocus AG at this time.

Important clients include, for example, VW and BMW from the automotive sector or TDK/Epcos in the semiconductor sector. In addition to the target sectors named, there are also key customers from a great number of other sectors. For example, the company also sells its solutions to the mechanical engineering and tool manufacturing, medical technology, chemistry and solar customer sectors. Furthermore, NanoFocus AG also has been supplying an important customer for many years in the OEM segment, in the public safety sector.

Business units and areas of application



Source: NanoFocus, GBC

Automotive

The products from NanoFocus AG are used in the automotive sector in development, quality assurance as well as in production control. The application spectrum therefore is set up very broadly, which results in high potential for the company. In some areas, NanoFocus also has a leading position. For example, the company claims the technological leading position for optical 3D measurement and analysis of engine coatings. However, the application areas are much more varied. For example, the products are also used for 3D measurement for applying coatings, the inspection of printed sealing sheets or surface analysis of fine sheets in deformation technology.

The positioning in the automotive industry was recently reinforced considerably with the takeover of Breitmeier Messtechnik GmbH in late 2015. The company specializes in tactile surface measurement and is already anchored firmly in the automotive industry. Daimler is one of the company's main customers. The takeover advanced NanoFocus AG decisively. Breitmeier Messtechnik GmbH generated revenues that amount to € 2.7 million in FY 2015, with an EBIT margin of around 10 %.

Semiconductor

Efficient manufacturing of wafers and semiconductors is essential in the semiconductor industry. It is also necessary to keep the error ratio as low as possible to optimize production costs. The measurement systems from NanoFocus AG can be used in different ways. The products can either be used within the production environment or even integrated fully into the production of wafers and semiconductors.

In the coming years, the new procedures in semiconductor technology will entail new quality requirements. An example of this could be 3D packaging for which multiple chips are stacked. However, all chips have to be inspected. Technologically, manufacturers of measurement systems will therefore face new challenges. With the solutions from NanoFocus AG, measuring such underlying structures is already possible today, which makes it possible to infer a good upside potential in the semiconductor sector.

NanoFocus was also already able to deliver systems fully integrated into production for two customers in the semiconductor industry, already proving multiple times that the strategic direction the company is going should be effective.

Standard/Laboratory

NanoFocus AG laboratory devices lay the technological foundation for all products in the product portfolio. These devices are confocal microscopes that perform optical, three-dimensional surface measurements. The devices provide precise three-dimensional measurement data up to the nanometer range. In addition, the data can be assessed with the help of a proprietary software solution.

Customers in the standard/laboratory sector are primarily development departments of SMEs, universities and research institutions.

OEM

The high-precision sensors from NanoFocus AG can not only be used in the proprietary solutions, but can also be integrated in systems from third-party manufacturers. In this area, NanoFocus is a premium partner for the OEM integration when customers want to use the sensors to improve quality assurance and product attributes. The areas of application of the solutions developed in the OEM area mainly come from the production-related measurement technology and security technology.

The OEM area is an important area regarding the future development of NanoFocus AG, since the nanometer scale is increasingly being accepted as the precision standard in material inspection and analysis. Today already, the nanometer scale is standard, for example, in metal processing and semiconductor manufacturing. To meet these requirements while maintaining a high speed of production, the quality inspection must be integrated into the production process. This creates the opportunity for NanoFocus to increasingly win OEM manufacturers as customers that integrate the sensors from NanoFocus AG in their machines. This should prove to be a business with very high margins.

Currently, the company's main customer in the OEM sector is the world market leader for bead inspection systems in the area of ballistics, Ultra Electronic Forensic Technology Inc. NanoFocus has now worked with this customer for several years, which was a major factor for the stable development in sales over the past years.

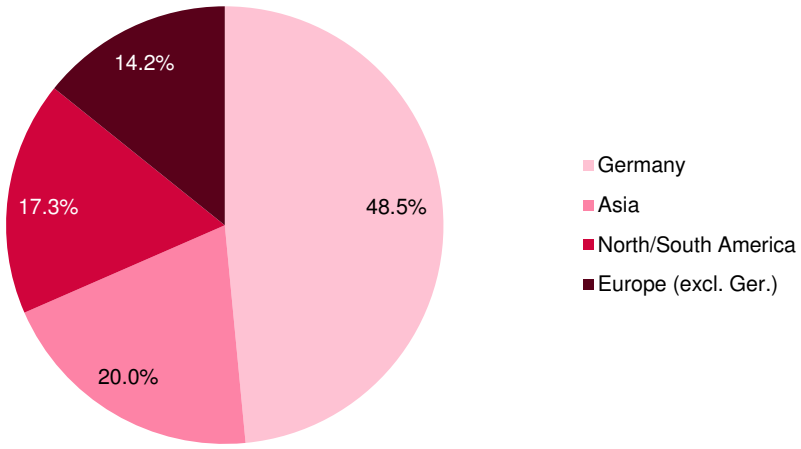
Sales breakdown

About 50 % of sales of NanoFocus AG today are generated in Germany. About 20 % are generated by the Asian market and about 17% by the American market. Domestic sales are covered by a separate sales division that addresses the customer directly and locally. Sales is supported by a qualified back office that is characterized by deep technological expertise and specific application knowledge.

In addition to domestic sales, NanoFocus AG operates two subsidiaries in Singapore and in the USA. The important US and Asian markets are addressed from these subsidiaries. Both markets should be of increasing importance for the company in the coming years. In the semiconductor sector in particular there is a heavy concentration of the global production capacities on the Asian market, which results in a corresponding market potential for NanoFocus.

But the German, pan-European and American markets will remain extraordinarily important, particularly due to the high concentration of the automotive industry. The increasing global competitive pressure in the automotive sector will require the use of efficiency-increasing technologies such as the ones from NanoFocus.

Breakdown of sales 2015 (in %)



Source: NanoFocus, GBC

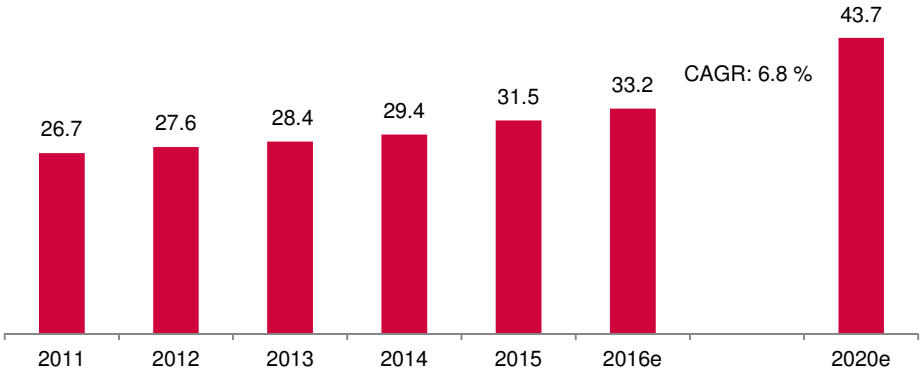
MARKET AND MARKET ENVIRONMENT

Photonics industry grows by 6.8 % annually

Laboratory technology is the technological basis of NanoFocus AG. The innovative strength and wide range of applications developed from this basis over the past 20 years. The proportion of revenues of over 50 % in this sector underlines this. The photonics industry is the underlying sector for this. In Germany, SMEs from the high-tech sectors are represented by the SPECTARIS/VDMA industry association.

The sector has exhibited a continuous growth in the past years. A cumulative growth of 18.0 % was recorded between 2011 and 2015. The sector accounts for a volume of about €33.2 billion in Germany. But the SPECTARIS industry association is also confident for the coming years that further growth can be generated. Thus, growth of 5.5 % is expected for 2016. Up to the year 2020, the association assumes that the German photonics market will grow to €43.7 billion, which corresponds to an average yearly growth of 6.8 % from 2015-2020.

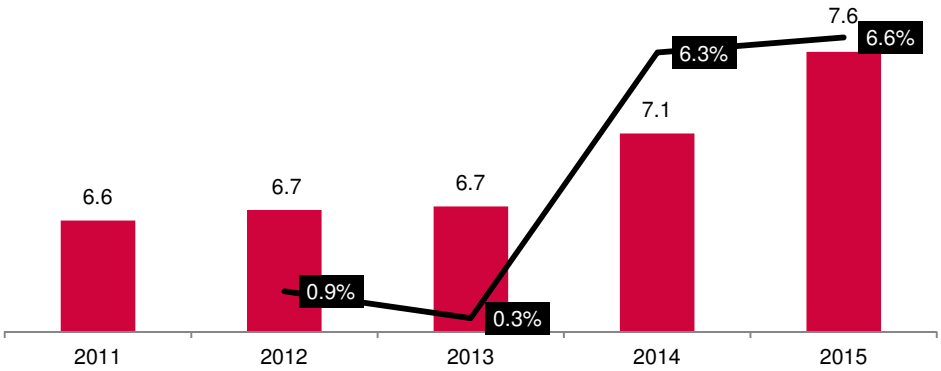
Development of the German photonics industry (in € billion)



Source: SPECTARIS, GBC

The photonics industry is split into multiple specialist fields. The analysis, bio and laboratory technology field addresses the manufacturers of laboratory devices, that is the Standard/Laboratory business unit of NanoFocus AG. The dynamics are picking up significantly in this subsegment as well, particularly in the more recent past. Thus, the market volume here grew by 6.3 % and 6.6. % respectively in the years 2014 and 2015. The market volume in Germany alone amounts to €7.6 billion.

Development of the German market for analysis, bio and laboratory technology (in € billion)



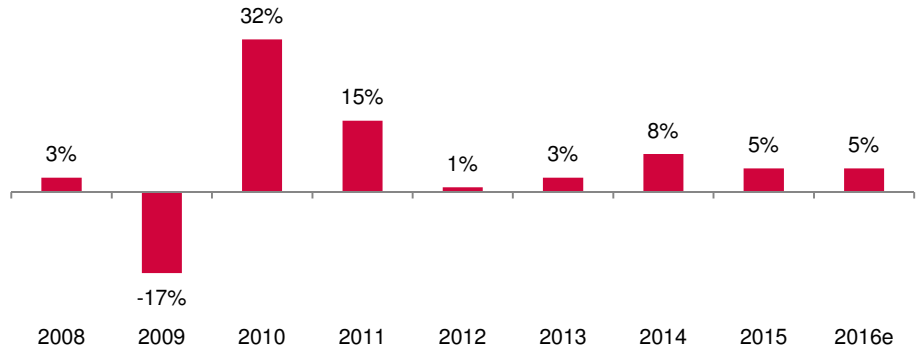
Source: SPECTARIS, GBC

Sensor systems and measurement technology key technologies

Trendsetting topics such as Industry 4.0 and the Internet of Things also play an important role for measurement technology and will decisively shape the industry in the coming years. According to the estimation of the AMA Verband für Sensorik und Messtechnik e.V. (AMA) industry association, the classic industry boundaries will disappear in the future and the value creation processes will change. This assessment is also reflected in the strategic orientation of NanoFocus. The company specifically targets this area with its inline-capable solutions with the objective of integrating the measurement technology, such as for quality inspections, directly into the production lines of the automotive manufacturers and to therefore make production smarter and more efficient.

The growth rate showed a similar dynamic as in the photonics sector in sensory systems and measurement technology in Germany. Thus, an average growth of 6 % was achieved between 2008 and 2015. It should be borne in mind that the recession in the year 2009 was characterized by a strong temporary dip, followed by a massive recovery in 2010. Growth remained stable recently. For the year 2016, the AMA trade association also assumes an above-average GDP growth of 5 %.

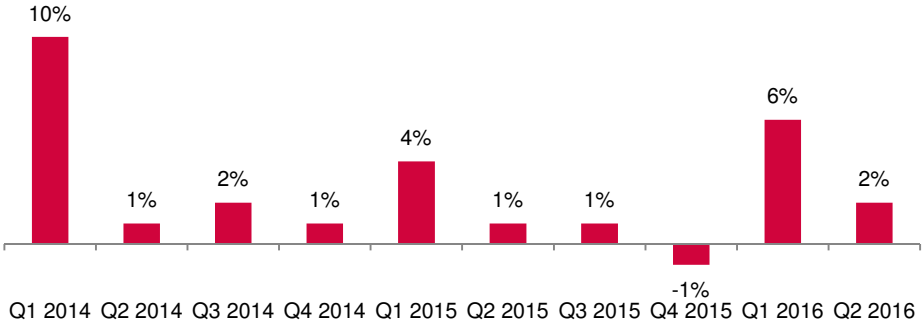
Development of sales in sensory systems and measurement technology in Germany (in % vs. PY)



Source: AMA Fachverband für Sensorik, GBC

The sector also remained stable in Q1 2016. Despite all exogenous difficulties, such as the slowed growth rate in China or the currency decline in Russia, incoming orders also remained stable at the beginning of 2016. Orders were at 2 % in Q2 2016 after they had already been 6 % higher than the previous quarter in Q1 and therefore even exhibited the highest growth in two years.

Incoming orders in sensory systems and measurement technology in Germany (in % vs. PQ)



Source: AMA Fachverband für Sensorik, GBC

The growth driver of the industry is the customers' strategic thinking. They are increasingly accepting the trend to digitalization and are positioning themselves corresponding-

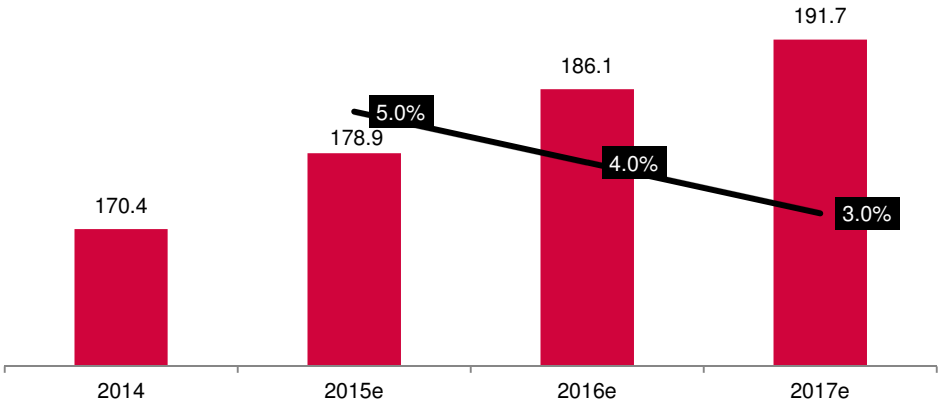
ly. Sensory systems and measurement technology play an important role for the topics of Industry 4.0 and the Internet of Things, which in turn results in increased demand for companies in the sector.

Market for measurement technology and process automation in the electronics and semiconductor industry with worldwide growth

The framework conditions are also favorable in the electronics and semiconductor industry, which should benefit the semiconductor segment of NanoFocus AG. Worldwide, the market for measurement technology and process automation shows good perspectives within the electronics and semiconductor industry. While the market volume in the year 2014 still was at €170.4 billion in the year 2014, the German Electronics Industry Association (Zentralverband Elektrotechnik- und Elektronikindustrie e.V.) assumes that the volume in FY 2015 was at €178.9 billion, that is 5 % higher. Almost all regions of the world contribute to the growth, especially China, despite its decelerated economic growth. This clearly shows once more the important role of the measurement technology and automation area. Only Brazil and Russia, which were affected by recessions, regressed in the year 2015.

Overall, the ZVEI trade association is confident that worldwide growth in the area will also continue in the current and coming year. A growth of 4 % should be achieved in 2016 as well as growth of 3 % in the coming year to then €191.7 billion. China should remain to be the growth driver, despite the low prospects of the overall economic situation. However, a stable situation is also assumed for the important European home market. The association only expects a slightly disproportionate development for the US.

Worldwide market for measurement technology and process automation in the electronics and semiconductor industry (in € billion)



Source: ZVEI – German Electronics Industry Association (Zentralverband Elektrotechnik- und Elektronikindustrie e.V.)

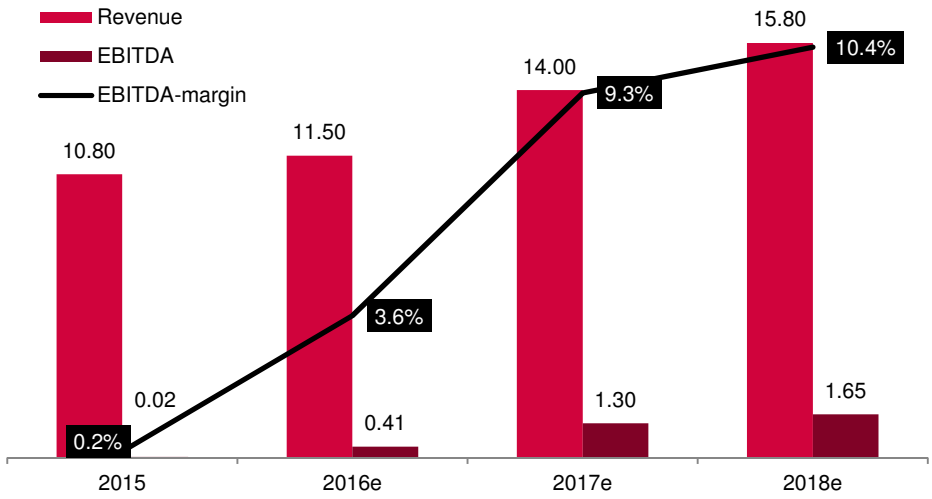
COMPANY DEVELOPMENT AND PROGNOSIS

Key figures of NanoFocus AG at a glance*

Statement of income (in € million)	FY 2015		FY 2016e		FY 2017e		FY 2018e	
Revenues	**10.80**	***100.0%***	**11.50**	***100.0%***	**14.00**	***100.0%***	**15.80**	***100.0%***
Inventory changes to finished and unfinished goods	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*
Other capitalized assets	0.74	*6.9%*	0.75	*6.5%*	0.50	*3.6%*	0.50	*3.2%*
Material expenditures	-3.94	*-36.5%*	-4.06	*-35.3%*	-5.05	*-36.1%*	-5.65	*-35.8%*
Gross yield	**7.60**	***70.3%***	**8.19**	***71.2%***	**9.45**	***67.5%***	**10.65**	***67.4%***
Other operating income	0.33	*3.1%*	0.30	*2.6%*	0.30	*2.1%*	0.20	*1.3%*
Personnel expenditures	-5.15	*-47.7%*	-5.20	*-45.2%*	-5.30	*-37.9%*	-5.60	*-35.4%*
Depreciation	-1.13	*-10.5%*	-0.55	*-4.8%*	-0.60	*-4.3%*	-0.65	*-4.1%*
Other operating expenditures	-2.77	*-25.6%*	-2.88	*-25.0%*	-3.15	*-22.5%*	-3.60	*-22.8%*
EBIT	**-1.12**	***-10.4%***	**-0.14**	***-1.2%***	**0.70**	***5.0%***	**1.00**	***6.3%***
Interest and similar income	0.02	*0.2%*	0.02	*0.2%*	0.02	*0.1%*	0.02	*0.1%*
Interest and similar expenditures	-0.18	*-1.7%*	-0.25	*-2.2%*	-0.30	*-2.1%*	-0.33	*-2.1%*
Income from ordinary business activities	**-1.28**	***-11.8%***	**-0.37**	***-3.2%***	**0.42**	***3.0%***	**0.69**	***4.4%***
Extraordinary result	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*
Tax on income and on profits	-0.33	*-3.0%*	0.11	*1.0%*	-0.13	*-0.9%*	-0.21	*-1.3%*
Other taxes	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*	0.00	*0.0%*
Profit/loss for the year	***-1.60***	***-14.9%***	***-0.26***	***-2.2%***	***0.29***	***2.1%***	***0.48***	***3.1%***
EBITDA	0.02		0.41		1.30		1.65	
In % of sales	*0.2*		*3.6*		*9.3*		*10.4*	
EBIT	-1.12		-0.14		0.70		1.00	
In % of sales	*-10.4*		*-1.2*		*5.0*		*6.3*	
Earnings per share in €	-0.38		-0.04		0.04		0.7	
Dividend per share in €	0.00		0.00		0.00		0.00	
Number of shares in million shares**	4.20		6.63		6.63		6.63	

** All numbers refer to the AG and not the Group*
*** For the number of shares 2016-2018, an increase in capital of 2.1 million shares is taken into account*

Development of sales revenues, EBITDA (in € million) and EBITDA margin (in %)



Source: NanoFocus, GBC

Historic development of business of NanoFocus AG

P&L (in m€)	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Revenues	8.22	8.94	8.18	11.22	10.80
EBITDA (*margin*)	0.87 (10.6%)	0.95 (10.6%)	-0.49 (-6.0%)	1.10 (9.8%)	0.02 (9.2%)
EBIT (*margin*)	0.22 (2.7%)	0.27 (3.0%)	-1.21 (-14.8%)	0.37 (3.3%)	-1.12 (-10.4%)
Result for the period	0.06	0.15	-1.40	0.69	-1.61
EPS in €	0.02	0.05	-0.47	0.23	-0.38

Source: NanoFocus, GBC

Note: The figures of the historical development of business refer to NanoFocus AG, and not the Group: NanoFocus AG will prepare a consolidated financial for the first time for FY 2016.

Development of sales revenues

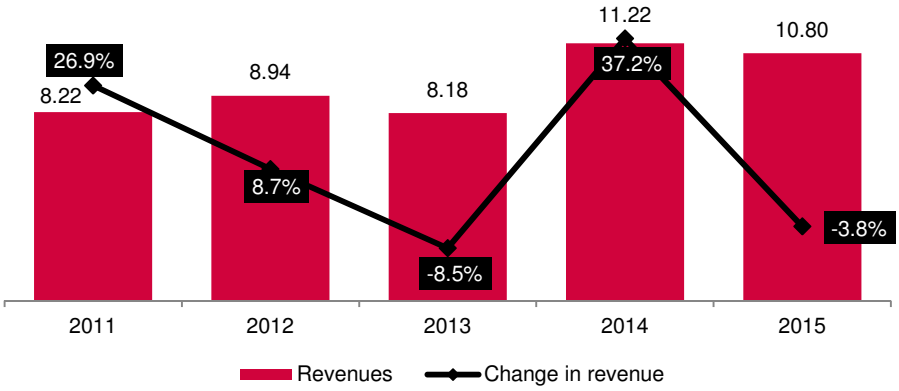
NanoFocus AG was able to continuously increase its revenue basis in the past years and achieved the highest value to date in company history in 2014 with €11.22 million. The background for this positive business development of the past years is the increasing expansion of the customer base in the framework of the development of the product portfolio. This resulted in NanoFocus systems having an increasing impact on efficiency and therefore the cost structures in the production of the customers, which increased the importance of systems from NanoFocus for customers. In addition, the company benefited in particular from its excellent positioning in niche markets, in particular due to a qualitative differentiation.

Due to the in part development-intensive and long-term key projects, however, NanoFocus AG repeatedly experienced fluctuations in revenue. However, it also showed in the past that these projects were the basis for corresponding revenue growth in the subsequent years. It should be emphasized in this context that the company has undergone a change from a pure laboratory manufacturer into a supplier of modern industrial measurement technology and that the transformation process is now starting to bear fruit. We assume that these volatile effects will have less of an impact on the development of revenues and changes in earnings in the future.

The effects described were exhibited in the development of the past business year 2015, which was impacted by two postponements, because of which the positive revenue development could not be continued fully in the year 2015. For one, there were delays in investments as a result of the VW emissions scandal in the automotive area for a fully automated process-oriented plant for the customer Volkswagen, which resulted in missing revenues of €0.75 million.

For another, the purchase of a pilot plant at EPCOS in the semiconductor area was delayed, which resulted in delays of device deliveries into the year 2016. This resulted in additional missing revenue contributions of €1.5 million, which resulted in a total of revenue shifts of €2.25 million. Had the projects named been implemented as scheduled, the revenue prognosis of €12.0 - 13.0 million would have been at the upper end or slightly exceeded it.

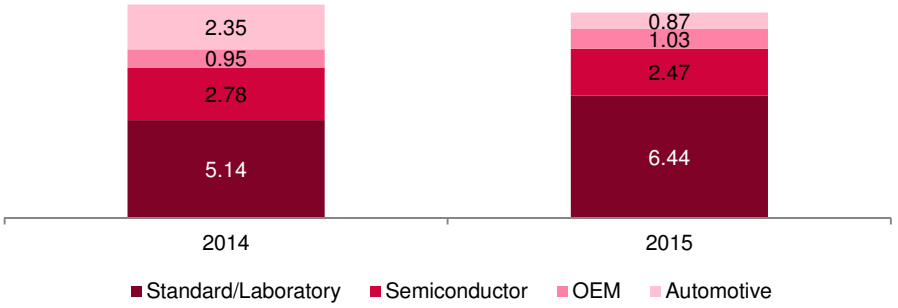
Development of revenues (in € million) and the growth rate (in %)



Source: NanoFocus, GBC

The effects mentioned reduced overall revenues in FY 2015 by 3.8 % to €10.8 million and was characterized in particular by declining revenues in both the automotive and semiconductor segments. The VW emissions scandal had a major impact, which caused delays in investments on the part of the customers. The largest segment standard/laboratory was able to grow significantly and exceeded its own expectations, continuing unchanged to form the stable revenue basis of NanoFocus AG. In the OEM segment, the revenues compared to the previous year could be improved slightly as well.

Development of sales revenues by segments (in € million)



Source: NanoFocus, GBC

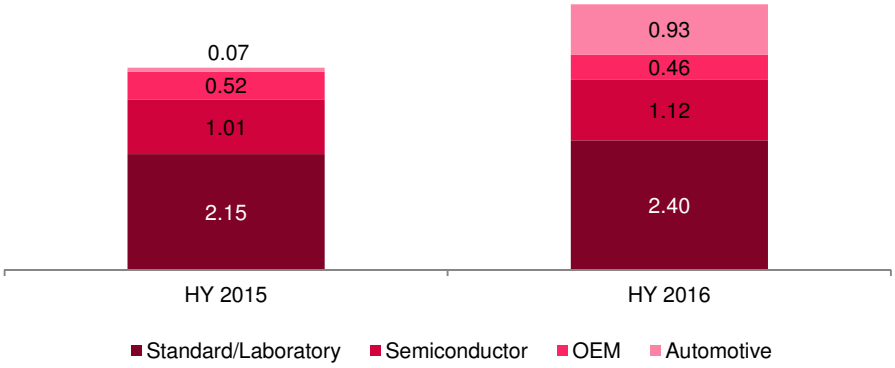
It is important to emphasize that demand from the automotive industry for production measurement to ensure innovative, economical and efficient coatings in the motor sector remains high. The company was able to successfully record the orders in this area in this area in Q2 2016 in incoming orders and plans to deliver in the second half of 2016. Nevertheless, management only expects a new growth push in this segment in the year 2017. In the semiconductor segment as well the delayed purchase of a pilot system in 2015 could only be performed in the HY1 2016.

Development of sales revenues during HY1 2016

During HY1 2016, the catch-up effects described above showed, in particular in the automotive and semiconductor segments, whose revenues were able to increase by 11.1 % in the first six months. The biggest jump could be achieved in the automotive segment, which resulted in the revenues already being higher after the first six months than the entire year 2015. This shows that the effects of the past year were simply based on the accounting date.

Overall, this resulted in revenues increasing by 31.4 % in HY1 2016. Nevertheless, the company again had to accept delays for larger projects that moved to the second half of the year, which resulted in the development in the first six months to still fall slightly short of expectations.

Development of sales revenues by segments (in € million)



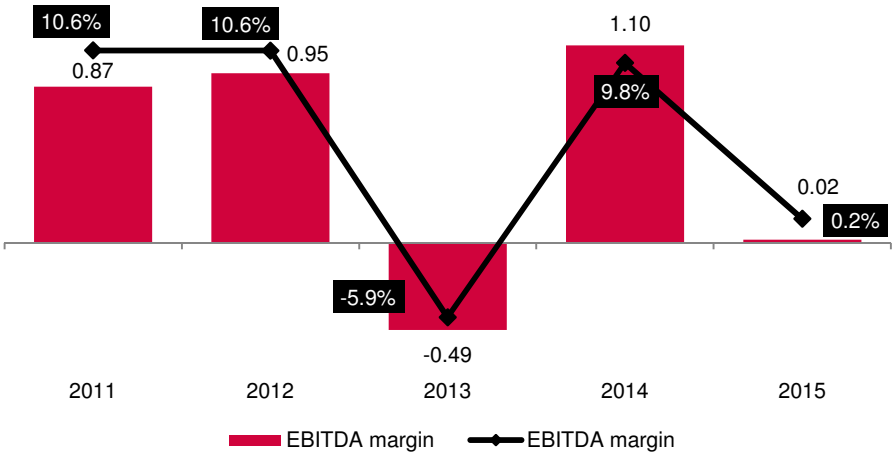
Source: NanoFocus, GBC

Due to the takeover of Breitmeier Messtechnik GmbH in the past year, the automotive sector will become increasingly important due to the integration into production as well as the new market access in the production of commercial vehicles. In addition, Breitmeier and its customer Daimler brings along access to another major car manufacturer that also becomes a potential customer for optical measurement technologies from NanoFocus AG in the future. The semiconductor area, in which issues such as 3D packaging or other miniaturization trends in assembly and joining technology are becoming increasingly important, should be reflected with an increasing proportion of revenues.

Development of earnings

The changes in earnings during the past years are characterized by two weak years that were shaped by the postponement of projects. Aside from these external factors that NanoFocus AG cannot influence, the company successfully generated corresponding positive results. As far the planned projects could be processed as scheduled, the company showed that it always was able to achieve EBITDA margins of around 10.0 %.

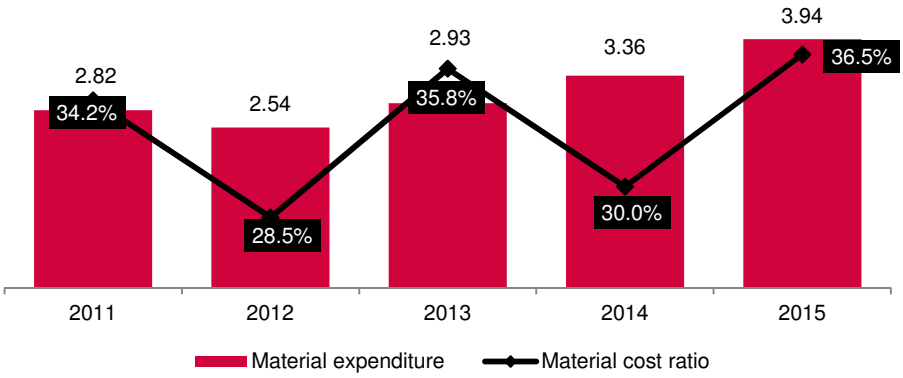
EBITDA Trends (in mil. €)



Source: NanoFocus, GBC

In addition to the missing sales contributions, a higher material cost ratio which was caused by a more unfavorable product mix increased sharply in the years 2013 and 2015. Above all, this can be attributed to the lower sales in the automotive sector which, in contrast to the other segments, has a generally lower material cost ratio and thus a better profit margin. With future increases in sales and higher sales figures for plants, the company should be able to achieve price advantages in the purchase of hardware components, which is expected to have a positive effect on the material ratio in anticipation of higher sales in the coming years. At the same time, the future mix of sales will also play a role because, as described previously, higher gross profit margins can be achieved in the automotive segment than in the semiconductor segment.

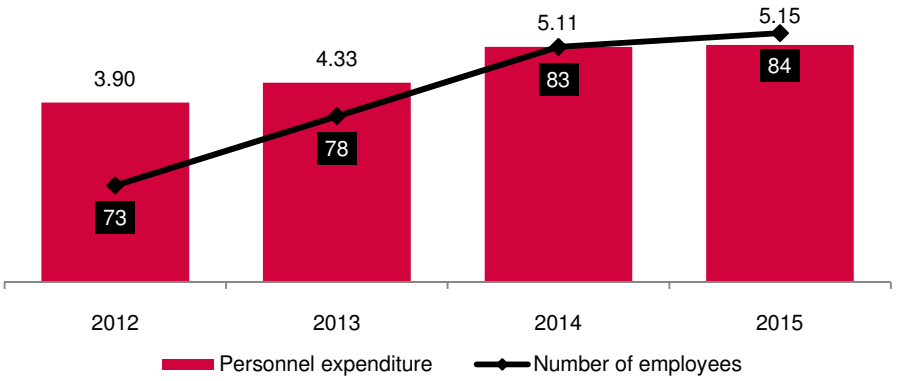
Cost of Materials Trends (in mil. €)



Source: NanoFocus, GBC

It is still the case that personnel expenses are the largest cost block, and these have steadily increased in the past due to the increase in revenues and a correspondingly increased number of employees. This is particularly attributable to historically comparatively high expenditures for research and development (R&D), which reached their peak in 2015 at €1.99 million. Around 25% of the employees of NanoFocus AG are active in research and development, which means that R&D costs in the past years were between 17.0% and 22.0% of the total sales, thus demonstrating the high cost share. In the absence of sales contributions, this effect was reflected in income. In the future, this cost block will drop to a target level of 10% of sales. Workforce expansion has also been largely completed and has already been selectively reduced in 2016.

Staff Cost Trends (in mil. €)

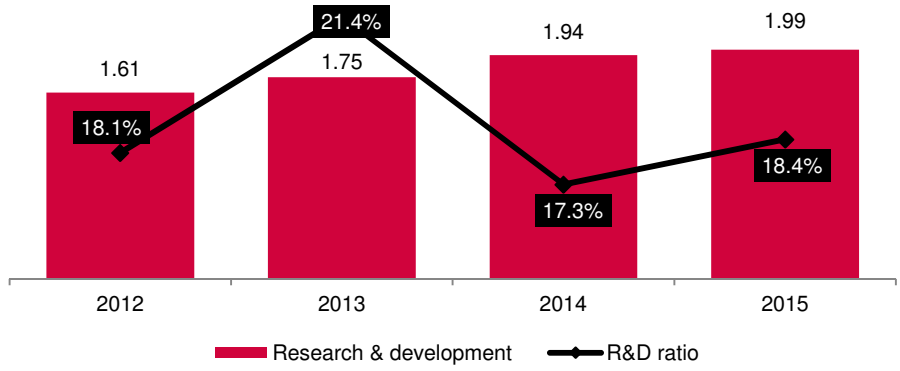


Source: NanoFocus, GBC

With regard to research and development costs, it should be emphasized in this context that these are an essential component of the business model in order to manifest and

expand the company's competitive position. This development has led to the company to bring new products to serial capability that are now opening up new possibilities. Due to the completed development work we therefore expect research and development costs to be constant in the coming years, and therefore become declining percentage trend, while at the same time increasing revenues.

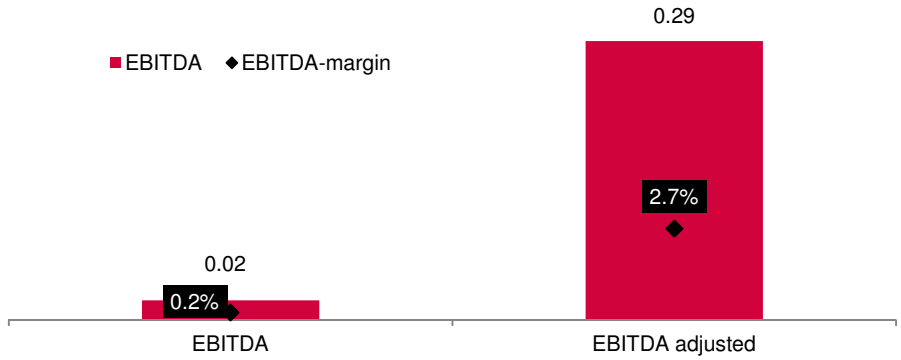
Research & Development Trends (in mil. €)



Source: NanoFocus, GBC

In addition to the earnings performance of the past year, various factors have also been taken into account which have impacted earnings. On the one hand, in the last financial year, there was a valuation allowance on receivables for the subsidiary mikroskin GmbH which was carried out for precautionary reasons and resulted in exposure in the amount of €0.28 million. In addition, there were additional special expenses that were part of the takeover of Breitmeier Messtechnik GmbH and those related to the capital measures implemented which are not quantified in an exact manner by the company. Adjusted for the one-off bad debt allowance, this results in an adjusted EBITDA of €0.29 million as well as an adjusted EBITDA margin of 2.7%.

EBITDA and Adjusted 2015 EBITDA (in mil. €) and EBITDA Margin and Adjusted EBITDA Margin (in %)



Source: NanoFocus, GBC

When looking at earnings on an EBIT basis, it should be noted that in the past few years this has been impacted by amortization of goodwill in the amount of €0.35 million which was last accrued in 2015. However, as a result of the initial preparation of the consolidated financial statements in accordance with the German Commercial Code (HGB) for FY 2016, the takeover of Breitmeier Messtechnik GmbH will once again result in goodwill amortization, which, however, should be overcompensated for by higher earnings contributions.

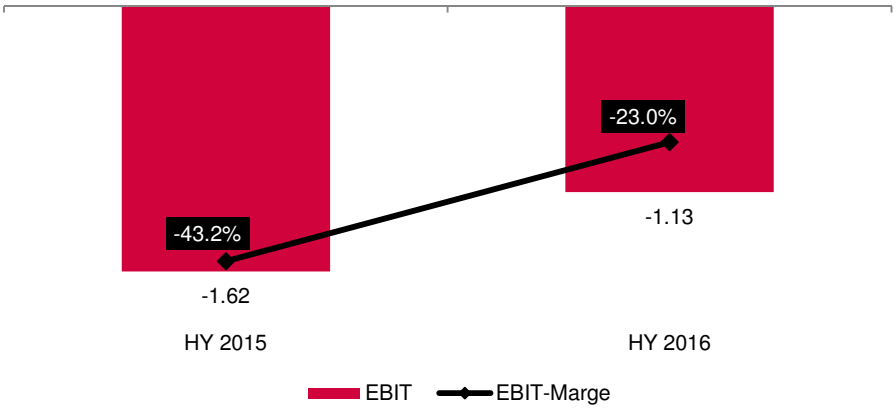
With regard to the profitability positions below the EBIT level, it should be noted that both the financial result and the tax expense have only been of minor significance in recent years. With the most recent financial expense of €0.18 million, we believe that this figure should be considered as low in absolute terms and should not show any major fluctuations in the coming years. With regard to the tax rate, it should be noted that as of December 31, 2015, the company still had commercial tax loss carryforwards in the amount of €5.9 million as well as corporate tax loss carryforwards of more than €7 million which can be offset against future profits.

Profit Trends in the HY1 2016

When looking at the earning trends in the HY1 2016, it can be demonstrated that in addition to the higher sales base compared to the previous year, higher sales in the Automotive sector in particular had a positive effect on operating income. As a result of a more favorable product mix, the material cost ratio declined accordingly from 44.8% in the HY1 2015 to 39.8% in the HY1 2016 and thus had a positive effect on the earnings trend. Similarly, the staff cost ratio was significantly improved from 69.0% to 53.5% in the HY1 2016 due to virtually unchanged staff costs in the HY1 2016, making it one of the earnings drivers in the HY1 2016.

On the other hand, however, the aforementioned sales shifts and non-recurring expenses were due to the company's move to the new company building in Oberhausen with a production capacity of approximately €50 million (approx. €0.3 million) as well as integration costs in connection with the takeover of Breitmeier Messtechnik GmbH, which also impacted earnings once again. Still, the company has not yet announced the exact effects on earnings. However, it is to be assumed that substantial period reductions would have been recorded due to an adjustment for the extraordinary effects. With regard to the development in the HY1 2016, it is also important to note that the majority of sales, and therefore earnings, are generally generated in the second half of the year, which means that the first half-year is less important for the full-year review.

EBIT Trends in Half Year Comparison (in mil. €)

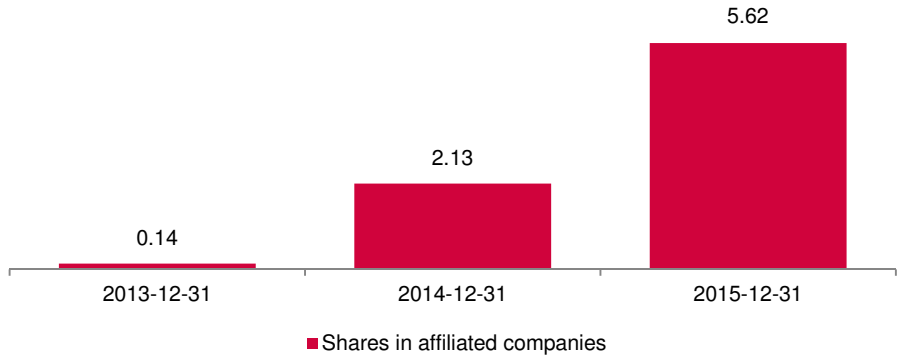


Source: NanoFocus, GBC

Pro Forma Group Assessment

As a result of the previously subordinate importance of its subsidiaries, NanoFocus AG has only set up a separate financial statement according to the German Commercial Code (HGB). In this context, the subsidiaries were reported as shares in affiliated companies in the balance sheet.

Shares in Affiliated Companies Trends (in mil. €)

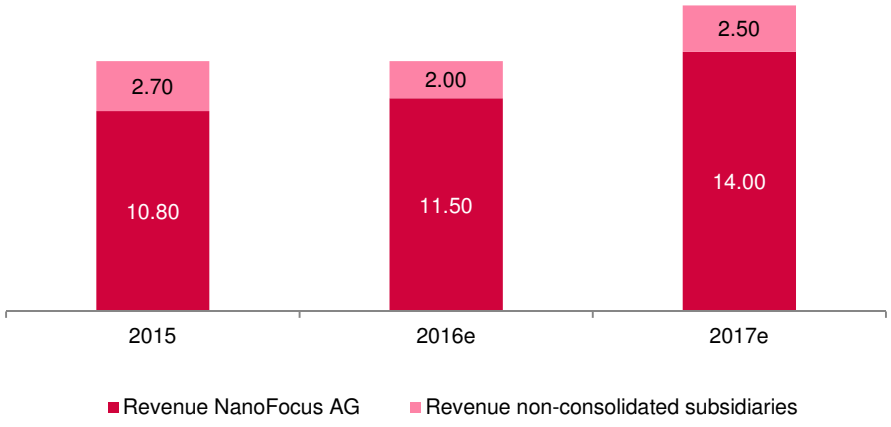


Source: NanoFocus, GBC

As a result of the takeover of Breitmeier Messtechnik GmbH in November 2015, whereby shares in affiliated companies rose to €5.62 million as of December 31, 2015, the share of the subsidiaries will become more and more important in the future, which is why the company has opted to publish the consolidated financial statements for the first time in 2016 (HGB). In particular, this aforementioned acquisition will have an impact on the Group's assessment, which generated an EBIT margin of around 10% in fiscal year 2015 with sales of €2.7 million.

In total, in 2015, the subsidiaries generated sales in the amount of €2.7 million and earnings of €0.7 million. As a result of the transaction completed in November and the associated integration sequences, the company conservatively expects sales of €2.0 million for the subsidiaries in 2016, which explains the decline in 2015.

Pro Forma Sales of NanoFocus AG and of Unconsolidated Subsidiaries (in mil. €)



Source: NanoFocus, GBC

Annual Result of Unconsolidated Subsidiaries in 2015

Subsidiary	Annual result (in mil. €)
NanoFocus Materialtechnik GmbH	0.00
NanoFocus, Inc.	0.13
NanoFocus Pte. Ltd.	0.00
Breitmeier Messtechnik GmbH	0.27
mikroskin GmbH	-0.04

Source: NanoFocus, GBC

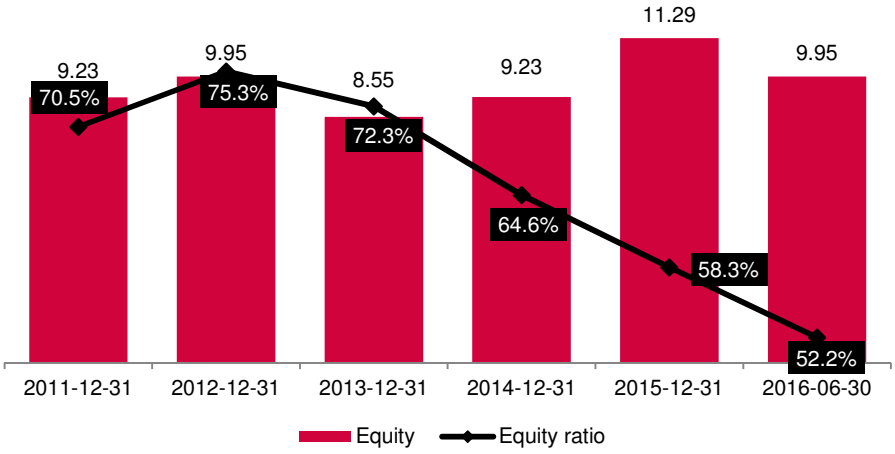
Balance Sheet and Financial Situation

in mil. €	31-Dec-13	31-Dec-14	30-Dec-15	30-Jun-16
Equity	8.55	9.23	11.29	9.95
Equity ratio (in %)	72.3%	64.6%	58.3%	52.2%
Cash and cash equivalents	0.33	0.77	1.42	1.22
Financial liabilities	0.90	1.90	2.04	2.98
Net liabilities	0.57	1.13	0.62	1.76
Working capital	4.49	4.95	3.44	3.12
Balance sheet total	11.83	14.30	19.36	19.05

Source: NanoFocus, GBC

In balance sheet terms, the trend for NanoFocus AG in recent years was characterized by the intensive development of the product portfolio while simultaneously having low market penetration. Shareholders' equity always ranged between €8.0 mil. and €12.0 mil., with the equity base being strengthened several times by capital increases. As a result, the Company has always been able to report high equity ratios despite the negative effect on earnings. Lastly, the equity ratio as of June 30, 2016 was above the 50.0% mark.

Shareholders' Equity (in mil. €) and Equity Ratio (in %) Trends

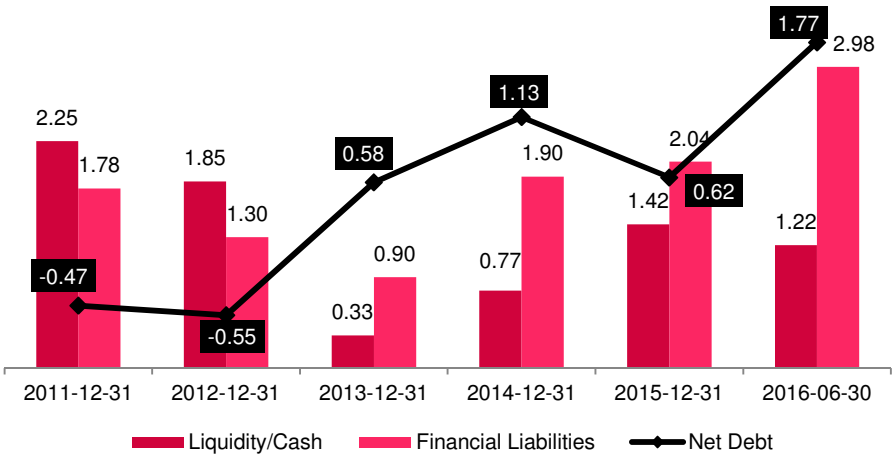


Source: NanoFocus, GBC

With regard to the company's liquidity situation, it should be noted that this was always characterized by a high level of capital commitment in working capital due to partially long-term projects and outlays. In view of the future rising sales base and the higher working capital requirements involved, we believe that a further increase in equity capital is a good idea to finance this growth. As of 6/30/2016, the company had liquidity of €1.22 million, considering fixed deposits of €0.8 million.

This includes financial liabilities in the amount of €2.98 million, resulting in a net debt of only € 1.76 million, which is not too high in our opinion. The structure of the financial liabilities shows bank loans in the amount of €1.63 million and a convertible bond issued in 2014 in excess of € 1.35 million. This will bear interest at 5.0% p.a. and has a term until 2/6/2019 at a conversion price of €4.50. If the conversion right is not exercised, the bond is repaid at the end of the term with a premium on the nominal amount. Furthermore, as of 6/30/2016, earn-out obligations exist in the amount of €0.70 million related to the SISCAN technology acquired from Siemens AG in 2009 and the takeover of Breitmeier Messtechnik GmbH last year.

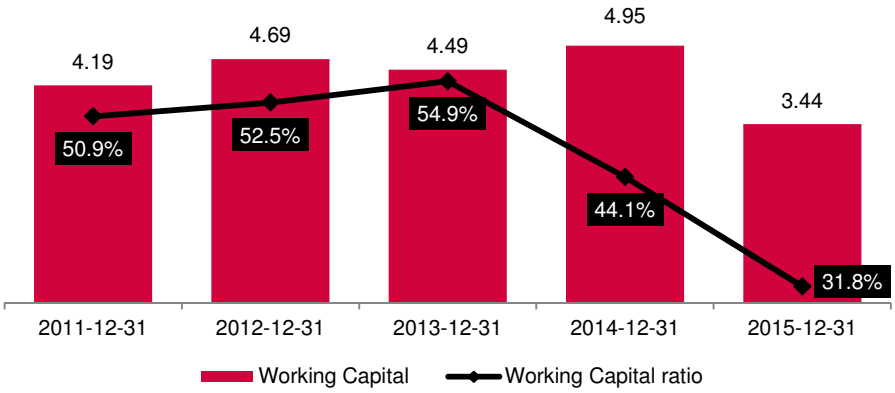
Liquidity, Financial Liabilities, and Net Debt Trends (in mil. €)



Source: NanoFocus, GBC

In addition, working capital is of particular importance when considering the balance sheet of NanoFocus AG, since the company must pre-finance a large number of projects which temporarily bind liquid funds. However, looking back over the past year and the 1st half of 2016, it should be noted that the company has always pursued good working capital management and has even been able to significantly reduce the working capital ratio in the past two years. Nevertheless, a further absolute increase in working capital is expected in the coming years as a result of the planned expansion of the sales base.

Working Capital (in mil. €) and Working Capital Ratio (in %) Trends



Source: NanoFocus, GBC

Finally, the shares in affiliated companies which have a high share of the assets of the balance sheet of NanoFocus AG are also to be regarded as significant. At €5.62 million as of 6/30/2016, this balance sheet item accounts for more than 25% of the balance sheet total. The most recent increase of around €3.5 million to €5.62 million is due to the takeover of Breitmeier Messtechnik GmbH. Of the remaining share, mikroskin GmbH accounted for around € 2 million. This company is planned to be sold.

SWOT Analysis

Strengths	Weaknesses
• Market-leading technology in the surface management technology sector • Wide product range covering all requirements from the laboratory to the industrial sectors • Proof of concept for inline systems already being implemented for several large clients in the semiconductor and automotive sectors • The company has significantly improved its market positioning and customer access in the direction of the production supplier through the acquisition of Breitmeier Messtechnik GmbH	• The project business also entails long lead-times, particularly in the case of pilot projects, resulting in volatile revenues before easily predictable follow-up business • Rising working capital requirements as a result of larger projects increases liquidity requirements • High dependency from large customers • Still small company size and low stock trading volume • Balance sheet of the mikroskin GmbH subsidiary significantly influenced by capitalized own services
Opportunities	**Risks**
• Technical complexity creates high market entry barriers for new competitors. Great opportunities arise with a simultaneously growing market volume • The growing acquisition of OEM customers which integrate the NanoFocus sensors could accelerate the growth in sales, since hardly any OEM customers are served at this point • The possible sale of mikroskin GmbH brings liquidity and reduces risks in the balance sheet. • The takeover of Breitmeier Messtechnik GmbH decisively strengthened access to automotive OEM customers and suppliers (Tier 1) and could open up new sales potential • Flat future development of R&D costs could lead to significant scale effects due to a decreasing staff cost ratio	• It is possible that the technology developed by NanoFocus may not be accepted by customers, thus limiting potential sales • The market for surface measurement technology is highly fragmented and therefore characterized by high competition. This could result in price pressure. • The expansion of international sales could take a longer time than currently expected. This could hamper medium-term growth. • Important customer industries, such as the semiconductor or the automotive industries, are cyclical industries. Periods of customer-side weakness of demand could weaken the sales of NanoFocus AG. However, the products for change processes in these industries are decisive.

Forecasts and Model Assumptions

Income Statement (in mil. €)	FY 2015	FY 2016e	FY 2017e	FY 2018e
Revenues	10.80	11.50	14.00	15.80
EBITDA (margin)	0.02 *(2%)*	0.41 (*3.6%*)	1.30 (*9.3%*)	1.65 (*10.4%*)
EBIT (margin)	-1.12 (*neg.*)	-0.14 (*-1.2%*)	0.70 (5.0%)	1.00 (*6.3%*)
Consolidated net earnings	-1.60	-0.26	0.29	0.48
EPS in €	-0.38	-0.04	0.04	0.07

Source: NanoFocus, GBC; EPS based on the following number of shares (in mil.): 2015: 4,20; 2016, 2017, 2018: 6.63

Note: The following forecasts are based on the assumption of a successful capital increase. With a thus expanded financing framework, the company should be able to achieve significantly higher growth rates. The reason for this is that the large-volume orders in particular require pre-financing requirements.

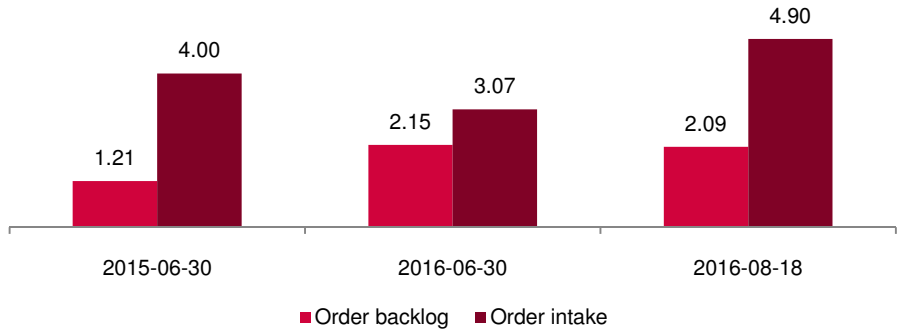
In addition, it must be taken into account that the forecasts relate only to NanoFocus AG. For FY 2016, a consolidated financial statement will be prepared for the first time that includes Breitmeier Messtechnik GmbH which will make significant contribution to the Group with expected sales of €2 million in 2016 and €2.5 million in 2017, as well as a double-digit EBIT margin. The Group's numbers shall accordingly be improved again.

Sales Forecasts

In our opinion, the prospects for NanoFocus AG are promising with regard to future sales growth. Due to the transition from being a pure laboratory manufacturer to being an equipment supplier for modern industrial measurement technology in which the company has invested considerable time and R&D expenditure in recent years, the development phase can now be seen as concluded, with the result that the focus will increasingly be on sales in the future. This is the basis for the sales growth that is expected in the coming years. In this context, the increased integration of systems into serial production and the associated lot sizes should become apparent. We see high potential for the coming years, particularly in the semiconductor and automotive customer industries. Likewise, the acquisition of new automotive customers by Breitmeier Messtechnik GmbH should have a positive impact on sales.

Positive overall development of the order situation can also be seen with regard to the order backlog and order intake trends in the course of the HY1 2016. Since there is a delay in expected follow-up orders for HY1 2016 in the second half of the year, the order intake of €3.07 million as of 6/30/2016 was below the previous year's figure of € 4.00 million. However, the order intake on 8/18/2016 showed a significant recovery to €4.90 million with a virtually unchanged order backlog of €2.09 million compared to €2.15 million as of 6/30/2016. The higher revenue contribution that is thus to be expected in the 2nd half of 2016 is consistent with the company forecast for FY 2016.

Order Backlog and Order Intake Trends (in mil. €)

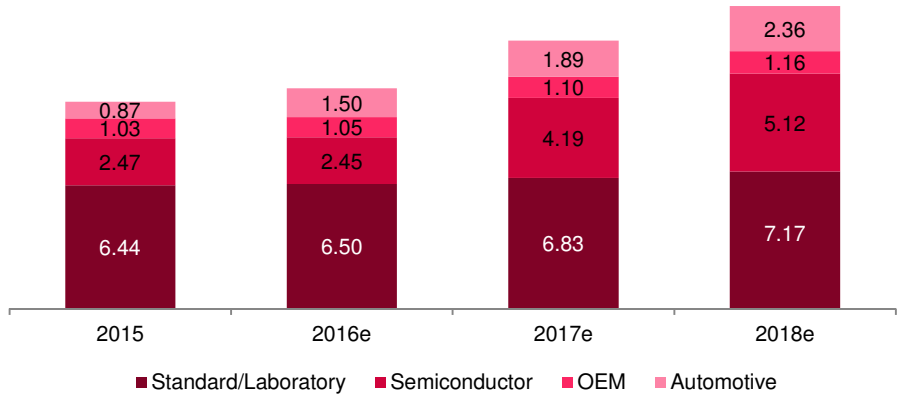


Source: NanoFocus, GBC

Significantly improved order intake in the automotive sector since December last year, among other things, is an important pillar for reaching the sales forecasts. However, the sales realization of orders currently under execution in the third and fourth quarters was delayed. For FY 2016, NanoFocus AG is expecting a slight doubling of sales in the automotive segment compared to the previous year. In particular, for the years from 2017 moving forward, the company expects a further growth spurt in this sector, which we have taken into account in our forecasts.

The semiconductor sector is not expected to contribute to the expected sales growth in FY 2016. In early November, the company reported that an order volume of around €2 million could no longer be realized in the current FY 2016. At the time of the report, the order had not yet been issued, but the management nevertheless firmly assumes that the important order will still be issued and would then deliver positive sales and earnings contributions accordingly in 2017.

Expected Sales Trends by Segment (in mil. €)



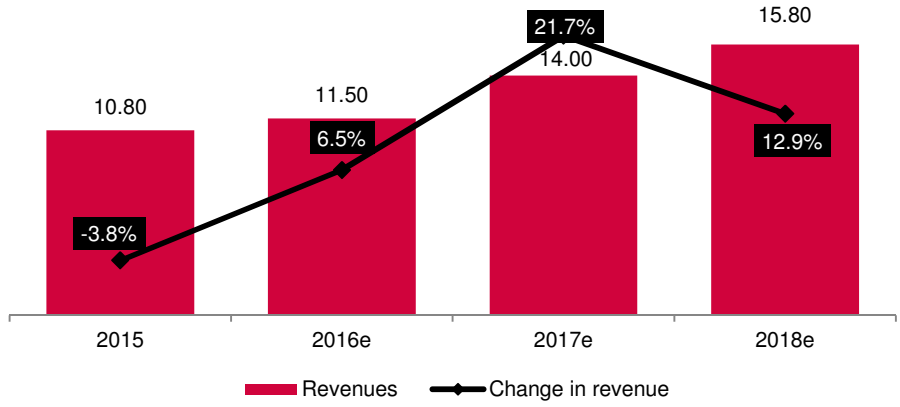
Source: NanoFocus, GBC

Regardless of the order shift in 2016, the company expects significant growth momentum in the semiconductor segment through increased sales, particularly in the Asian region. Structures should be expanded here in the coming months. Last but not least, NanoFocus AG recently received a directional order from the photonics industry valued over €0.50 million. Here, NanoFocus will supply several automated systems for process monitoring with a high technological requirement to a renowned manufacturer of micro-optical components. Additional opportunities could arise in this area of the semiconductor industry in the coming years.

Sales growth in the coming years should also be further supported in the course of the reorientation of sales, since we believe that there will continue to be stable growth in the largest segment, standard/laboratory, which is currently developing better than expected. Last but not least, we also see good growth opportunities in the OEM business which is also to be addressed more strongly in the coming periods.

With a view to the entire sales development of NanoFocus AG without the inclusion of the subsidiaries, a significant increase in sales is expected for the current FY 2016 despite the shift in the important order in the semiconductor sector, in particular for the coming FY 2017. By moving into the new production facility at the beginning of the year, the company has also created the geographic situation that will allow the significant expansion of the sales base in the coming years. With a total capacity of up to €50 million, the new rental building in Oberhausen thus offers considerable scope for increased sales. However, we have made a somewhat more restrained sales forecast for the coming years in order to mitigate any delays in orders given the uncertainties in the project business of NanoFocus and the expansion of sales.

Expected Revenue Trends (in mil. €)



Source: NanoFocus, GBC

Earnings Forecast

From our point of view, the earnings trend, as well as the revenue trend, will be positive in the coming years. An increased sales base may result in significant scale effects which should allow the company to regain the order of magnitude from the 2011 and 2012 years in the profit margins.

In our opinion, this will particularly contribute to a disproportionate cost development in staff costs, which is the company's largest cost position. Due to a slight decline in research and development costs in the coming years and without further workforce expansion, a flat to slightly rising development of staff costs can be expected in the future with rising sales.

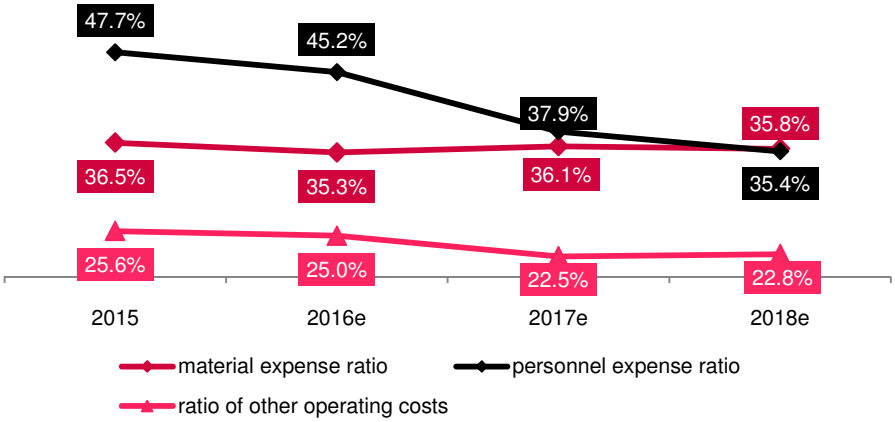
Since R&D costs of around €2.0 million in 2015 accounted for 18.4% of sales, the company is aiming for a 10.0% ratio in the medium term. For this reason, our projections reduce the staff cost ratio from 47.7% in 2015 to 35.4% in 2018. As a result, the staff costs will be most clearly reflected in the earnings trend and lead to corresponding scale effects.

In addition, other operating expenses should also develop disproportionately in the coming years. Due to the integration costs associated with Breitmeier Messtechnik GmbH, as

well as the burdens resulting from the relocation to the new company building this year, these will only decline slightly in relation to sales in 2016. With the elimination of these burdens from 2017 onwards, we therefore realistically expect a significantly improved cost ratio for the coming financial year and thus also expect correspondingly positive effects on operating income.

However, with regard to material expenses, we expect a proportionate to slightly disproportionate development compared to sales. In particular, this is due to the planned sales expansion in the semiconductor segment which should significantly increase the share of total sales in the future. Since the semiconductor division has a weaker gross margin compared to the other segments, particularly the Automotive segment, we expect a slight increase in the material expense ratio. Nevertheless, it should be noted that price advantages and thus positive effects in the gross profit margin in this segment should result with rising sales and purchasing volumes.

Expected Expense Ratio Trends (in %)



Source: NanoFocus, GBC

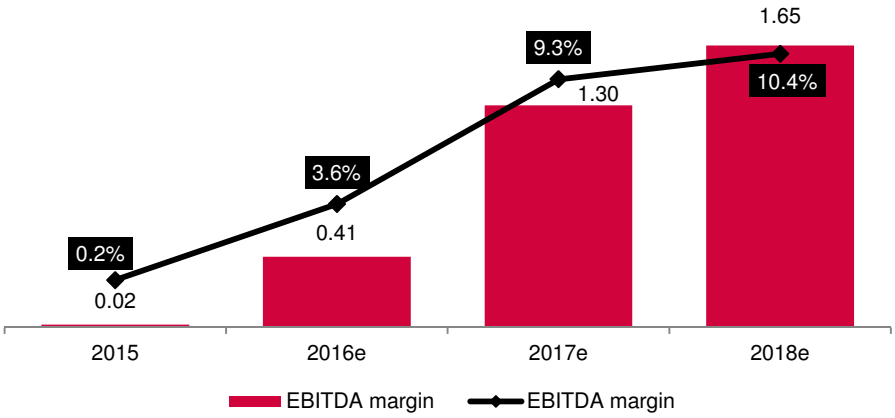
However, we do not expect any significant changes in the other expenses and earnings positions in comparison to previous years, although the decline in research and development costs is likely to result in a lower level of capitalized own expenses. Since these were most recently higher than depreciation, we expect a slight increase in depreciation. On the other hand, we do not expect any depreciation of property, plant and equipment because the CAPEX should not be significant in the future.

With regards to the earnings trend in the further course of the year, it should be noted that the half-year result has always been negative in spite of the predominantly positive annual results in recent years. This is reflected in the high sales in the second half of the year, which is accompanied by significantly higher earnings contributions. A corresponding contribution to earnings in the third and fourth quarters is therefore also to be expected for the current FY 2016, although we are still not assuming that a positive EBIT will be achieved in FY 2016 due to the order shift in the semiconductor sector.

All in all, therefore, we expect a significant increase in operating profit for the years 2017 and 2018 for NanoFocus AG, without the inclusion of the subsidiaries. The aforementioned effects should be noticeable in the case of a corresponding increase in sales in the coming years. On the basis of our estimates, the company should succeed in achieving an EBITDA margin of 10.4% by 2018. With regard to the past years, EBITDA margins of 10.6% have already been achieved in the years 2011 and 2012, so we consider this trend to be readily achievable again. In our opinion, there is potential to outperform

and elevate our earnings forecasts if the planned sales increases develop better than we expect in the coming financial year and in comparison to the company's projections.

Expected EBITDA Trends (in mil. €)



Source: NanoFocus, GBC

As far as financial income is concerned, we do not expect any significant changes because we believe that the rising profitability in the coming years will not lead to a significant additional loan capital requirement. For this reason, we also expect the net income for the year to be correspondingly positive, which should be in line with the development in EBITDA.

Note: Since NanoFocus AG has not yet prepared a consolidated financial statement, the valuation has been carried out on an AG basis. The subsidiary companies, in particular Breitmeier Messtechnik GmbH and mikroskin GmbH, are reported as financial assets in fixed assets in the AG balance sheet and are not consolidated. As a result, the revenue and EBIT contributions are not included in the profit and loss statement. As a result, free cash flow calculations in our discounted cash flow model do not include the subsidiaries' cash flows. On the contrary, these are taken into account as a financial asset in the model and are added to the value of the discounted free cash flows in the amount of their balance sheets. As of 6/30/2016, the value of the subsidiaries amounted to €5.62 million.

VALUATION

Assumptions DCF Model

We assessed NanoFocus AG using a three-level DCF model. Beginning with the concrete estimates for the years 2016 to 2018 in Phase 1, the forecast for the approach of value drivers will follow in the second phase from 2019 to 2023. At the same time, we expect sales to grow by 10.0%. We have chosen 11.0% as the target EBITDA margin. We considered the tax rate to be 30.0% in phase 2. In the third phase, a residual value IS also determined by means of the perpetual annuity after the end of the forecast horizon. We assume a growth rate of 2.0% in the final value.

The valuation of NanoFocus AG was carried out on the basis of a post-money approach. This means that we have already included the planned capital increase in the valuation. We took into account a full placement of the capital increase with 2.1 million new shares at an issue price of €1.75. For this reason, we considered a capital inflow from the capital increase of €3.68 million in the valuation model, as well as the dilution effect.

Determination of the Cost of Capital

The weighted capital costs (WACC) of NanoFocus AG are calculated from the shareholders' equity costs and loan capital costs. The fair market premium, the company-specific beta, as well as the risk-free interest rate must be determined to determine the equity costs.

The risk-free interest rate is derived from current interest rate curves for risk-free bonds in accordance with the recommendations of the Expert Committee on Business Valuations and Management (FAUB) of the IDW. This is based on the zero bond rates published by the Deutsche Bundesbank using the Svensson method. The average yields for the previous three months are used to smooth short-term market fluctuations and the result is rounded to 0.25 base points. **The currently used value of the risk-free interest rate is 0.50%.**

We use the historical market premium of 5.50% as a reasonable expectation of a market premium. This is supported by historical analyses of stock market returns. The market premium reflects what percent of the stock market will have better returns than expected when compared to low-risk sovereign debt.

According to the GBC estimation method, a beta of 1.72 is currently determined.

Equity costs of 9.95% (beta multiplied by risk premiums plus risk-free interest rate) are calculated using the assumptions made. Since we assume a sustained weighting of the equity costs of 100%, this results in weighted capital costs (WACC) of 9.95%.

Valuation Result

The discounting of future cash flows is based on the entity approach. We calculated the corresponding capital costs (WACC) at 9.95%. We have determined a fair value of the equity of NanoFocus AG of € 19.22 million, taking into account the issue of 2.1 million new shares as part of the capital increase. For a diluted number of shares of 6.63 million shares, this corresponds to a value per share of €2.90.

DCF Model

NanoFocus AG - Discounted Cashflow (DCF) Valuation

Value Driver of the DCF - Model after the estimate phase:

Consistency Phase	
Sales growth	10.0%
EBITDA margin	10.5%
Dep. to operational fixed assets	19.8%
Working capital to sales	25.0%

Final Phase	
Perpetual sales growth	2.0%
Perpetual EBITA margin	7.7%
Effective tax rate in the final value	30.0%

Three level DCF Model:

Phase	estimate		consistency						final
in mil. EUR	FY 16e	FY 17e	FY 18e	FY 19e	FY 20e	FY 21e	FY 22e	FY 23e	Final value
Sales	11.50	14.00	15.80	17.38	19.12	21.03	23.13	25.45	
Sales change	6.5%	21.7%	12.9%	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Sales to operational fixed assets	3.78	4.39	4.81	5.13	5.51	5.95	6.45	7.01	
EBITDA	0.41	1.30	1.65	1.82	2.01	2.21	2.43	2.67	
EBITDA margin	3.6%	9.3%	10.4%	10.5%	10.5%	10.5%	10.5%	10.5%	
EBITA	-0.14	0.70	1.00	1.18	1.34	1.52	1.73	1.96	
EBITA margin	-1.2%	5.0%	6.3%	6.8%	7.0%	7.2%	7.5%	7.7%	7.7%
Taxes on EBITA	0.04	-0.21	-0.30	-0.35	-0.40	-0.46	-0.52	-0.59	
to EBITA	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
EBI (NOPLAT)	-0.09	0.49	0.70	0.82	0.94	1.07	1.21	1.37	
Return on investment	-1.6%	8.3%	10.4%	11.4%	12.1%	12.9%	13.8%	14.7%	14.0%
Working capital	2.86	3.54	3.92	4.35	4.78	5.26	5.78	6.36	
Working capital to sales	24.8%	25.3%	24.8%	25.0%	25.0%	25.0%	25.0%	25.0%	
Investments in working capital	0.58	-0.69	-0.38	-0.43	-0.43	-0.48	-0.53	-0.58	
Operational fixed assets (OFA)	3.04	3.19	3.29	3.39	3.47	3.53	3.59	3.63	
Dep. on OFA	-0.55	-0.60	-0.65	-0.65	-0.67	-0.69	-0.70	-0.71	
Dep. to OFA	18.1%	18.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	
Investments in OFA	-1.00	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	
Invested capital	5.90	6.73	7.20	7.73	8.25	8.79	9.37	9.99	
EBITDA	0.41	1.30	1.65	1.82	2.01	2.21	2.43	2.67	
Taxes on EBITA	0.04	-0.21	-0.30	-0.35	-0.40	-0.46	-0.52	-0.59	
Total investments	-0.42	-1.44	-1.12	-1.18	-1.18	-1.23	-1.28	-1.33	
Investments in OFA	-1.00	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	
Investments in working capital	0.58	-0.69	-0.38	-0.43	-0.43	-0.48	-0.53	-0.58	
Investments in goodwill	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Free cashflows	0.03	-0.35	0.23	0.29	0.42	0.52	0.63	0.75	15.13

Operational business value (balance sheet date)	9.25	10.51
Present value of explicit FCFs	1.46	1.94
Present value of the continuing value	7.79	8.57
Net debt	-9.34	-8.71
Shareholders' equity value	18.58	19.22
Minority interests	0.00	0.00
Share capital value	18.58	19.22
Outstanding shares in mil.	6.63	6.63
Fair value of shares in EUR	2.80	**2.90**

Determination of Cost of Capital:

Risk-free rate	0.5%
Market risk premium	5.5%
Beta	1.72
Cost of Equity	9.9%
Target weighting	100.0%
Cost of Debt	6.0%
Target weighting	0.0%
Tax shield	30.2%
WACC	**9.9%**

		WACC				
		8.9%	**9.4%**	**9.9%**	**10.4%**	**10.9%**
ROCE	**13.0%**	3.04	2.91	2.79	2.69	2.60
	13.5%	3.10	2.97	2.85	2.74	2.65
	14.0%	3.17	3.02	**2.90**	2.79	2.69
	14.5%	3.23	3.08	2.95	2.84	2.74
	15.0%	3.30	3.14	3.01	2.89	2.78

APPENDIX

§1 Disclaimer

This document is for informational purposes only. All data and information from this study come from sources that GBC considers to be reliable. In addition, the authors have taken the utmost care to ensure that the facts and opinions expressed are appropriate and accurate. Despite this, no guarantee or liability can be assumed for its correctness – either explicitly or tacitly. In addition, all information may be incomplete or summarized. Neither GBC nor the individual authors accept any liability for damages resulting from the use of this document or its contents or otherwise in this context.

We would also like to point out that this document is neither an invitation to subscribe nor to purchase any securities and should not be interpreted in this sense. Neither may it or part of it serve as the basis for a binding contract of any kind, or be used as a reliable source in this context. A decision in connection with an anticipated sale of securities regarding the company or companies discussed in this publication should be made solely on the basis of information contained in prospectuses or quotations issued in connection with such an offer.

GBC assumes no guarantee that the indicated return or the mentioned target prices will be achieved. Changes in the relevant assumptions on which this document is based may have a material impact on the targeted returns. Income from investments is subject to fluctuations. Investment decisions always require the advice of a investment consultant. Thus, the present document can not assume any advisory function.

Sales Outside the Federal Republic of Germany:

If published in the UK, this publication may only be made available to persons deemed to be authorized or exempted in the sense of the Financial Services Act 1986 or to persons as defined in Section 9 (3) of the Financial Services Act 1986 (Investment Advertisement) (Exemptions) issued in 1988 (as amended) and may not be communicated directly or indirectly to other persons or groups of persons.

Neither this document nor a copy thereof may be brought, transferred or distributed to the United States of America or to its territories or possessions. The distribution of this document in Canada, Japan or other jurisdictions may be restricted by law, and persons who come to possess this publication should be aware of and comply with any restrictions. Any failure to comply with this limitation may constitute a violation of US, Canadian, or Japanese securities laws or the laws of any other jurisdiction.

By accepting this document, you accept any disclaimer and the aforementioned limitations.

The notices to the disclaimer can also be found at:
http://www.gbc-ag.de/de/Disclaimer.htm

Legal Notices and Publications Pursuant to §34b Para. 1 WpHG and FinAnV

The notices are also available on the Internet at the following address:
http://www.gbc-ag.de/de/Offenlegung.htm

§ 2 (I) Updating:

A concrete update of the present analysis/analyses at a fixed time has not yet been determined by date. GBC AG reserves the right to make an unannounced update of the analysis.

§ 2 (II) Recommendation / Rating:

Since 7/1/2006, GBC AG has been using a three-level absolute share rating system. Since 7/1/2007, the ratings refer to a time horizon of at least 6 months to a maximum of 18 months. Previously, the ratings were based on a time horizon of up to 12 months. When the analysis is published, the investment recommendations are determined according to the ratings described below with reference to the expected return. Temporary price deviations outside these areas do not automatically lead to a change in the rating, but they give rise to the revision of the original recommendation.

The respective recommendations / ratings are bound to the following expectations:

BUYING	The expected return, originating from the determined target price, including dividend paymen within the corresponding time horizon is > = + 10%.
HOLDING	The expected return, originating from the determined target price, including dividend paymen within the corresponding time horizon is > - 10 % and < + 10 %.
SELLING	The expected return, originating from the determined target price, including dividend paymen within the corresponding time horizon is <= - 10 %.

GBC AG's target prices are determined on the basis of the fair value per share, which is based on generally accepted and widely used methods of fundamental analysis such as the DCF method, the peer group comparison and / or the sum-of-the-parts method. This is done by taking into account fundamental factors such as e.g. share capital, capital reductions, capital increases, M & A activities, share buybacks, etc.

§ 2 (III) Historical Recommendations:
GBC's historical recommendations for the present analysis/analyses are available on the Internet at:
http://www.gbc-ag.de/de/Offenlegung.htm

§ 2 (IV) Information Base:
For the purposes of the present analysis/analyses, publicly available information on the issuer(s) that GBC considered as reliable (where available, the three most recently published annual and quarterly reports, ad hoc announcements, press releases, securities prospectuses, company presentations, etc.) were used. In addition, discussions were conducted with the management of the company/companies concerned in order to provide a more detailed explanation of the business development issues.

§ 2 (V) 1. Conflicts of Interest According to §34b Para. 1 WpHG and FinAnV:
GBC AG and the responsible analyst hereby declare that the following possible conflicts of interest for which the company/companies mentioned in the analysis exist at the time of publication and therefore comply with the obligations of §34b WpHG. An exact explanation of the possible conflicts of interest is also listed in the catalog of potential conflicts of interest under § 2 (V) 2.

There is the following potential conflict of interest with regard to the securities or financial instruments discussed in the analysis: (4,5a,5b,6a,7,10,11)

§ 2 (V) 2. Catalog of Possible Conflicts of Interest:
(1) GBC AG or a legal entity associated with it holds shares or other financial instruments in this company at the time of publication.
(2) This company holds more than 3% of the shares in GBC AG or a legal entity associated with it.
(3) GBC AG or a legal entity associated with it is a market maker or designated sponsor in the financial instruments of this company.
(4) GBC AG or a legal entity associated with it was involved in or led the public issue of financial instruments of this company during the previous 12 months.
(5) (a) GBC AG or a legal entity associated with it has concluded an agreement on the compilation of research reports with this company for a fee during the previous 12 months. Under this agreement, the draft of the analysis (without valuation portion) was made available to the issuer before publication.
(5) (b) The draft of the financial analysis was amended on the basis of justified information from the issuer.
(6) (a) GBC AG or a legal entity associated with it has entered into an agreement on the production of research reports with a third party regarding this company during the previous 12 months. Under this agreement, the draft of the analysis (without valuation portion) was made available to the issuer before publication.
b) The draft of the financial analysis was amended on the basis of justified indications from the client of the financial analysis.
(7) The responsible analyst, chief analyst, deputy chief analyst and / or another person involved in the preparation of the studies holds shares or other financial instruments in the company at the time of publication of the study.
(8) The responsible analyst of this company is a member of the management board or the supervisory board.
(9) The responsible analyst has received or acquired shares in the company he has analyzed before public issue prior to the date of the publication.
(10) GBC AG or a legal entity associated with it has concluded an agreement for the provision of consulting services with the company analyzed during the previous 12 months.
(11) GBC AG or a legal entity associated with it has significant financial interests in the analyzed company, such as, for example, the acquisition and / or exercise of mandates in the analyzed company or the acquisition and / or provision of services for the analyzed company (e.g., presentation at conferences, roundtables, roadshows, etc.).

§ 2 (V) 3. Compliance:
GBC has made internal regulatory arrangements to prevent possible conflicts of interest and to disclose them, if applicable. The current Compliance Officer, Susanne Klebl, is responsible for compliance with regulations; email: klebl@gbc-ag.de.

§ 2 (VI) Entity Responsible for Preparation:
The company responsible for the preparation of the present analysis/analyses is GBC AG which is based in Augsburg and which is reported as a research institute at the responsible supervisory authority (Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), Lurgiallee 12, 60439 Frankfurt).

GBC AG is currently represented by its board members Manuel Hölzle (chairman) and Jörg Grunwald.

The analysts responsible for this analysis are:
Felix Gode, CFA, Dipl. Wirtschaftsjurist (FH), Vice-Head of Research
Lukas Spang, Bachelor of Science, Financial Analyst

Other persons involved in the preparation of the study:
Manuel Hölzle, Dipl. Kaufmann, Head of Research

§ 3 Copyright

GBC AG
Halderstrasse 27
D 86150 Augsburg
Tel.: 0821/24 11 33-0
Fax: 0821/24 11 33-30
Internet: http://www.gbc-ag.de

E-Mail: compliance@gbc-ag.de

GBC AG®

- R E S E A R C H & I N V E S T M E N T A N A L Y S E N -

GBC AG
Halderstrasse 27
86150 Augsburg, Germany
Website: http://www.gbc-ag.de
Fax: ++49 (0)821/241133-30
Tel.: ++49 (0)821/241133-0
E-mail: office@gbc-ag.de