



quirin bank

paragon AG

quirin bank Equity Research

16 December 2015

paragon AG

**Rating** Buy  
**Share price (EUR)** 27.19  
**Target price (EUR)** 30.00

Bloomberg PGN GY  
Sector Technology

**Share data**

Shares out (m) 4.1  
Daily volume shs (m) 0.3  
Free float (%) 48.00  
Market cap (EUR m) 109  
EV (EUR m) 145  
Dividend/Share (EUR) 0.25  
Dividend yield (%) 1.9  
Payout ratio (%) 34.1

**Performance**

ytd (%) 88.5  
12 months (%) 131.1  
12 months rel. (%) 107.1  
Index SDAX

**Share price performance**



Source: Bloomberg

**Next triggers**

3 march 16 FY15 report

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# Premium for the car – premium for the portfolio

**Well established automotive supplier with a focus on the premium segment**

paragon AG is an automotive supplier from Delbrück. The company's particular focus is on automotive interior solutions. Pursuant to its claim "Premium for the car", paragon develops and produces components such as air-quality sensors, microphones, display instruments and spoiler systems which offer added value to end customers. paragon is the single source supplier for more than 64% of its products.

**Strong growth dynamic in the latest division: electromobility**

paragon has successfully established a quickly growing, new division: electromobility. This helps the company to reduce its dependence on the automotive sector. Under the brand name "Voltabox", the company produces high-performance battery packs, which can be used for passenger and goods transport vehicles and in buildings. paragon also announced that it had received its first large-scale order from a well-known German carmaker for starter batteries in conventionally powered vehicles. The order has a volume of EUR 72m.

**World premieres at the IAA**

At this year's IAA paragon and Voltabox presented numerous global novelties, which are to be gradually transferred to the large series. Among other things, the company showed high-performance electric motors and inverters. The combination of a lithium-ion battery storage with additional SuperCaps (high-performance capacitors) was another global novelty. These innovations might lift potential sales in the medium to long term.

**Strong 9M-15 sales growth**

The company's 9M figures reflect its robust product portfolio: at EUR 67.4m, group sales were up 20.4% in comparison to the preceding year (EUR 56.0m). EBIT more than doubled, to EUR 4.6m (9M-14: EUR 2.0m). The company benefited from a strong favourable development not only of its new divisions (body kinematics and electromobility), but also of its traditional segments. The sensors division was supported by strong demand in the air quality management segment (AQS, AQI) and increased its sales from EUR 22.5m to EUR 25.1m. The acoustics division saw its sales rise from EUR 10.9m to EUR 11.9m, the cockpit division from EUR 20.2m to EUR 24.0m. The management therefore confirmed its sales forecast for the year as a whole (up to EUR 100m). Due to considerably higher expenditure for the new divisions the EBIT margin target for 2015 was adjusted downwards, from ~10% to the preceding year's level (7.9%).

**Coverage initiated, price target of EUR 30 – Buy**

Based on our valuation models, we initiate coverage on paragon with a EUR 30 price target and BUY recommendation

Key figures		2013	2014	2015e	2016e	2017e
Sales	EUR m	74	79	97	107	127
EBITDA	EUR m	13	11	15	17	20
EBIT	EUR m	8	6	8	10	13
EPS	EUR	0.96	0.67	0.88	1.08	1.61
Sales growth	%	4.9	7.0	22.7	10.2	19.0
EBIT growth	%	1.9	-21.1	22.6	25.6	32.2
EPS growth	%	-14.8	-29.7	30.5	23.2	48.7
EBITDA margin	%	16.9	13.3	15.1	15.7	15.5
EBIT margin	%	10.7	7.9	7.9	9.0	10.0
Net margin	%	5.3	3.5	3.7	4.2	5.2
EV/Sales	ratio	1.56	1.59	1.49	1.34	1.08
EV/EBITDA	ratio	9.2	12.0	9.8	8.6	7.0
EV/EBIT	ratio	14.5	20.2	18.9	14.9	10.8
P/E	ratio	9.5	19.2	30.2	24.5	16.5
P/BV	ratio	2.4	3.1	5.5	4.7	3.8
Dividend yield	%	2.7	1.9	1.1	1.3	1.7

Source: Bloomberg, Company data, quirin bank estimates

## Investment Case

### *Focus on attractive niches*

#### **Broad range of products, no. 1 supplier for several products**

paragon AG was founded in 1988 by Klaus Dieter Frers and has been a well-established automotive supplier for years. The company has five divisions – sensors, acoustics, cockpit, body kinematics and Voltabox – and offers a broad range of products. paragon is the global market leader for several products, for example air-quality sensors.

### *Dynamic sales growth likely, not least in the traditional core business*

#### **Voltabox**

The company produces high-performance lithium-ion battery packs under the brand name “Voltabox”. These batteries can be used for numerous purposes, which is why the company puts the aggregate sales potential for the coming five years at EUR 220-300m. In fact, long-term framework contracts have already been signed with strategic partners, for example with Vossloh-Kiepe for trolley buses, Triathlon for intralogistics vehicles and a German carmaker for starter batteries. Global novelties such as the electric motor recently presented at the IAA support the growth potential. We also expect strong growth in the core business divisions.

#### **paragon produces mainly for the premium segment**

The company focuses on solutions for the premium segment, which is expanding at above-average rates. As an active developer of components which add value for end customers, paragon pursues a push strategy.

### *Display instrument capabilities raised by takeover*

#### **Takeover of SphereDesign GmbH**

In February 2015 paragon announced the takeover of SphereDesign GmbH. SphereDesign is a well-established development service provider and supplier to the automotive industry. The company has specialised on control and digital display instruments and is an excellent fit with paragon’s product portfolio of analog instruments. This takeover cements paragon’s claim of being a premium product supplier.

### *Plans to raise per-customer sales*

#### **System supplier**

paragon aims to develop from a component producer to a system supplier and thus to increase its sales revenue per car. The battery packs and the electric motors with inverters presented at the IAA are good examples of this strategy.

#### **Move to China**

The sales subsidiary in Shanghai, which was established in 2012, has been expanded into a manufacturing plant during the current financial year. The new plant will start to manufacture air quality sensors, air quality improvement systems and stepper motors for display instruments in 2016. The product range is to be expanded in a second stage. paragon supplies not only German carmakers; in fact, the company has already won business from several Chinese car producers.

#### **Full order books**

According to company figures, the volume of the existing framework contracts amounts to EUR 1,064.2m (lifetime), with EUR 617.71m of this total covering the period until end-2019. The volume of projects with an order probability of more than 50% amounts to EUR 409.3m (lifetime), of which EUR 234.5m until end-2019.

#### **Guidance 2015**

The Managing Board sees the ongoing positive performance in the current fourth quarter as confirming its full-year revenue forecast for 2015, which predicts sales of up to EUR 100m. Despite the substantial additional expenses for the far-reaching development of new business divisions, the full-year EBIT margin will match the prior year’s figure (i.e. 7.9%). On an adjusted basis, however, it will clearly exceed the prior year’s figure. In the current year paragon has consistently invested in its Voltabox subsidiaries, in real estate at its headquarters in Delbrück and in the US to expand its production capacity, and additionally and substantially in its Body Kinematics and Acoustics business divisions. These additional investments alone were EUR 3.3m higher than in the prior year. The company has thus laid a foundation to generate further significant growth.

#### **Guidance 2016**

Consolidated Group revenue is set to grow by around 8% compared with 2015 and cross the EUR 100m mark. Earnings are also expected to rise, with an EBIT margin of around 9%. Alongside the ongoing strong business performance with sensors, microphones and

### *Order backlog supports future growth*

cockpit systems, the key growth drivers will be the Body Kinematics business division and above all Electromobility. This business division -with its Voltabox subsidiaries in Germany and the US - should contribute revenue of more than EUR 15m and thus account for an increasingly significant share of total group sales.

#### **Guidance 2016**

For 2017, paragon expects another jump in sales by a further 15% to 20%. This will largely be driven by new products.

#### **Manipulations at Volkswagen**

According to paragon, the company has for a long time been analysing its order book and order entry constantly and in detail. It says that it has not detected any fall in the turnover of any of the VW brands in the current data since the various problems came to light in September 2015.

For the current business year paragon assumes a VW proportion of turnover of about 60%. In 2014 this was still about 67%. According to the 2016 plan, the VW Group proportion of turnover will fall again to about 56%. The reasons for this are the increase in sales to vehicle manufacturers that do not belong to the VW Group and the growth in the Electromobility Division ("Voltabox").

paragon believes that, because of its dynamic growth thanks to new products, the supply of higher-quality systems, new international customers and new markets such as Electromobility, the VW scandal will in all probability not play a major role in the future either. This is also confirmed by many discussions with buyers in the VW Group. Therefore sentiment at paragon is not cautious at all with regard to its forecasts for 2016 and beyond. The latest order placements have given paragon very precise sales figures at VW/Seat/Skoda that do not show any fall.

According to paragon the majority of its sales to the VW Group are made with air quality sensors and microphones. These products are extras whose "take rate" is constantly increasing because of the growing importance of air conditioning units and interior comfort. For this reason paragon assumes an increase in units sold.

#### **BUY, PT EUR 30**

Based on our valuation models we derive a fair value of EUR 30.43 and therefore initiate coverage with a PT of EUR 30.

*Callbacks have not caused a drop in demand*

## Valuation

### Summary

In our valuation of paragon's equity we have focused on a discounted cash flow methodology based on free cash flow to the firm and a peer group valuation: As a peer group approach is more static and does not fully reflect paragon's growth potential, we decide to weight the DCF fair value by 2/3 and the multiple approach by 1/3. Based on the methods we derive a fair value of EUR 30.43 per share.

### Multiple valuation

In our multiple approach we considered how car suppliers are valued by the capital market: We used EV/EBITDA, EV/EBIT and P/E multiples from FY 2015e to 2017e:

#### paragon Peer Group valuation:

Peer Group Overview	EV/EBITDA			EV/EBIT			P/E		
	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
CONTINENTAL AG	8.4	7.9	7.4	11.8	11.0	10.3	15.8	14.6	13.5
NORMA GROUP SE	11.2	10.5	9.9	14.3	13.2	12.4	19.5	17.7	16.6
GRAMMER AG	4.9	4.1	3.7	9.0	7.0	5.9	13.6	10.4	8.6
LEONI AG	5.8	4.9	4.3	11.7	8.8	7.3	15.1	10.7	8.4
SHW AG	4.0	3.9	3.6	7.9	7.7	6.7	9.7	9.8	8.6
FEDERAL-MOGUL HOLDINGS CORP	7.0	6.4	6.1	15.6	13.5	14.0	9.7	10.7	9.6
TENNECO INC	5.5	5.1	4.7	7.5	6.8	6.3	11.7	10.2	9.1
UMICORE	9.5	8.8	8.1	15.4	14.0	12.4	19.0	17.4	15.5
NOK CORP	5.9	5.5	5.2	10.0	9.5	9.0	12.9	12.4	11.6
LKQ CORP	12.4	11.0	9.9	14.6	12.9	11.3	21.0	18.4	16.2
BORGWARNER INC	7.8	6.8	6.3	10.2	9.0	8.3	14.3	12.6	11.3
GKN PLC	5.8	5.4	5.0	8.2	7.8	6.9	11.6	10.9	9.7
SKF AB-B SHARES	8.2	7.5	7.0	10.4	9.6	9.0	12.7	12.4	11.5
JOHNSON MATTHEY PLC	9.3	8.9	8.4	13.0	12.2	11.5	16.3	15.3	14.0
<b>Median</b>	<b>7.4</b>	<b>6.6</b>	<b>6.2</b>	<b>11.1</b>	<b>9.5</b>	<b>9.0</b>	<b>14.0</b>	<b>12.4</b>	<b>11.4</b>

Source: Bloomberg, quirin bank

We applied these multiples from the peer group to our financial forecasts for paragon. We deducted the company's net financial debt and pension provisions from the derived enterprise values in order to get the fair value of equity. With the P/E, EV/EBIT and EV/EBITDA multiples for 2015e to 2017e, we calculated the fair value of equity. The peer group approach indicates a fair value of EUR 19.29 per share.

Peer Group Results									
in EUR m	EBITDA 2015e	EBITDA 2016e	EBITDA 2017e	EBIT 2015e	EBIT 2016e	EBIT 2017e	EPS 2015e	EPS 2016e	EPS 2017e
Multiple	14.7	16.8	19.7	7.7	9.6	12.7	0.88	1.08	1.61
Enterprise value	7.4x	6.6x	6.2x	11.1x	9.5x	9.0x	14.0x	12.4x	11.4x
Enterprise value	108.5	110.9	122.0	85.0	91.6	114.3	-	-	-
Pension provisions					1.9				
Minorities					0.0				
Net debt					14.7				
<b>Fair value of equity</b>	<b>91.9</b>	<b>94.4</b>	<b>105.4</b>	<b>68.4</b>	<b>75.0</b>	<b>97.8</b>	<b>50.5</b>	<b>55.4</b>	<b>75.6</b>
Average					79.4				
Number of shares (m)					4.1				
<b>Fair value per share (in EUR)</b>					<b>19.29</b>				

Source: Bloomberg, quirin bank

### DCF valuation

Our DCF model indicates a fair value of EUR 36.00 for paragon. Our assumptions are as follows:

#### Phase 1 (2015-17E):

We estimated the free cash flows (FCF) of phase 1 according to our detailed financial forecasts for this period stated in the financials section.

**Phase 2 (2015-21E):**

For Phase 2, we initially used more general assumptions. We assumed a sales growth of 10% which should drop to ~1% in 2022e. Furthermore, we forecast constant EBIT margins of 10%.

**Phase 3:**

For the calculation of the terminal value, we applied a long-term FCF growth rate of 2.0% which equals the estimated long-term inflation rate.

Based on these assumptions, we calculated a fair value of the operating business of EUR 164.7 m. We deducted paragon's net debt (cash minus financial debt) and current pension provisions. The resulting fair value of equity is EUR 148.1m. The fair value per share amounts to EUR 36.00 according to our DCF model.

**paragon: Discounted Cash Flow Model**

EURm	PHASE 1			PHASE 2							PHASE 3
	2015e	2016e	2017e	2016e	2017e	2018e	2019e	2020e	2021e	2022e	∞
Sales	97.0	106.9	127.2	139.9	149.7	157.1	162.4	166.3	169.1	171.1	
YoY growth	22.7%	10.2%	19.0%	10.0%	7.0%	4.9%	3.4%	2.4%	1.7%	1.2%	
EBIT	7.7	9.6	12.7	14.0	15.0	15.7	16.2	16.6	16.9	17.1	
EBIT margin	7.9%	9.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	
Income tax on EBIT (cash tax rate)	-1.6	-1.9	-2.8	-4.2	-4.5	-4.7	-4.9	-5.0	-5.1	-5.1	
Depreciation and amortisation	7.0	7.2	7.0	4.2	4.5	4.7	4.9	5.0	5.1	5.1	
Change in long-term provisions	0.4	0.2	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Other non-cash items	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Change in net working capital	-2.4	-1.3	-2.7	-2.5	-2.0	-1.5	-1.1	-0.8	-0.6	-0.4	
Net capital expenditure	-28.0	-9.4	-6.3	-4.3	-4.6	-4.9	-5.0	-5.2	-5.2	-5.1	
<b>Free cash flow</b>	<b>-16.6</b>	<b>4.5</b>	<b>8.7</b>	<b>7.7</b>	<b>9.0</b>	<b>10.0</b>	<b>10.7</b>	<b>11.3</b>	<b>11.7</b>	<b>12.2</b>	
<b>Present values</b>	<b>-16.5</b>	<b>4.2</b>	<b>7.5</b>	<b>6.2</b>	<b>6.7</b>	<b>6.9</b>	<b>6.9</b>	<b>6.8</b>	<b>6.5</b>	<b>6.3</b>	<b>123.1</b>
Present value Phase 1	-4.8										
Present value Phase 2	46.4										
Present value Phase 3	123.1										
Total present value	164.7										
+ Excess cash/Non-operating assets	13.3										
- Financial debt	-28.0										
-Pension provisions	-1.9										
Fair value of equity	148.1										
Number of shares (m)	4.1										
Fair value per share (EUR)	36.00										

Risk free rate	3.00%	Target equity ratio	40.0%
Equity risk premium	6.00%	Beta (fundamental)	1.5
Debt risk premium	2.75%	<b>WACC</b>	<b>7.24%</b>
Tax shield	30.0%	<b>Terminal growth</b>	<b>2.0%</b>

Sensitivity analysis						
WACC		Terminal growth (Phase 3)				
		1.0%	1.5%	2.0%	2.5%	3.0%
6.2%	39.72	43.32	47.77	53.40	60.77	
6.7%	35.21	38.06	41.52	45.78	51.20	
7.2%	31.42	33.72	<b>36.00</b>	39.78	43.88	
7.7%	28.20	30.08	32.29	34.92	38.11	
8.2%	25.42	26.98	28.79	30.91	33.44	

Source: quirin bank

## SWOT analysis

### Strengths

- Visibility and long-term planning reliability are high at paragon: carmakers sign sales contracts for the duration of a production cycle of a construction series. The OEMs often use the same suppliers for follow-up models, provided that they were content with the quality of the products.
- paragon's balance sheet is very robust; the equity ratio amounted to 27.6% as of 31 December 2014.
- Last year Dr.-Ing. Stefan Schwehr joined paragon as Chief Technology Officer. Dr Schwehr has gained about 20 years of management experience at Daimler AG, where he was responsible for the advance and frontline development of electronics components. He will provide operative support to Mr Frers, who managed paragon for a long time alone.
- paragon focuses on German premium carmakers: The Center Automotive Research at the University of Essen forecasts that vehicle sales will grow by 3.5% annually between 2015 and 2030, with German premium carmakers expanding at a rate of 6%.
- Mr Frers is the founder, CEO and majority shareholder (52%) of paragon. He has therefore considerable personal interest in the company's continuing its profitable growth path.

### Weaknesses

- Clear dependence on the automotive sector.
- The share of premium producers BMW and Daimler in total sales is currently low. However, the company says it has received several orders, most of them from BMW, but some also from Daimler, which will have an effect on sales in the coming years.
- paragon's development is heavily dependent on Mr Frers and Dr Schwehr. However, all of paragon's 5 business units are run by experienced product development managers.

### Opportunities

- The new division electromobility offers considerable growth potential and will significantly reduce the dependence on the automotive sector.
- Products and solutions which were originally developed for premium cars are increasingly used for medium-sized and small cars, too.
- Development of further innovative products, as paragon explicitly does not focus on existing solutions.
- Growth with new product groups
- International expansion, particularly to China and Houston/Texas
- Rising demand for Voltabox products in the logistics and packaging industries

### Risks

- paragon is forced to constantly develop new products which meet carmakers' high demands in terms of quality and innovation.
- It is possible that carmakers postpone their demand to later quarters or reduce orders if they change their planning assumptions.
- Volkswagen is paragon's most important customer. While we currently do not expect Volkswagen's sales to decline, any losses at the Volkswagen level would hit paragon as well.

## Company history

- 1988 Founded as electronics manufacturer in Delbrück
- 1991 Electronic services plant in Zella-Mehlis
- 1993 Launch of sensors development and production
- 1995 paragon's first air-quality sensors in cars
- 1998 Production of components for operating controls
- 1999 Initial patents for acoustic sensors
- 2000 IPO as paragon AG
- 2003 Takeover of air-quality sensor division from Bosch
- 2004 Launch of display instrument business
- 2005 Market entry for car media systems
- 2009 Extensive group-wide restructuring
- 2010 Full focus on automotive industry
- 2011 Development of a modular kit for electromobility
- 2012 Opening of sales office in China
- 2013 Production of battery packs and spoiler systems
- 2014 Spin-off of electromobility business under its own brand to Group subsidiaries Voltabox Deutschland GmbH and Voltabox of Texas, Inc.
- 2014 Launch of battery pack production in the US
- 2015 Takeover of SphereDesign GmbH
- 2015 Opening of the production plant in China

## Ownership structure and management.

### **Klaus Dieter Frers (majority shareholder (52%), CEO)**

Graduate in mechanical engineering, worked first at AEG-Telefunken

1983 – 1987: Production director at the electronics plant of Nixdorf Computer AG

1988: Founding of paragon GmbH

1999: Founding of paragon AG

Responsible for business strategy and development, production, finance and human resources

### **Dr.-Ing Stefan Schwehr (CTO)**

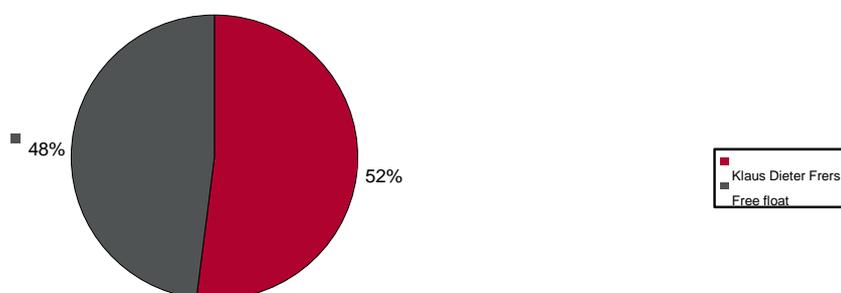
20 years of management experience at Daimler AG (advance and frontline development of electronics components)

Most recently responsible for advance development of vehicle display and control systems

Responsible for development and sales and customer management

### **paragon AG: Shareholder structure**

**Shareholder structure**



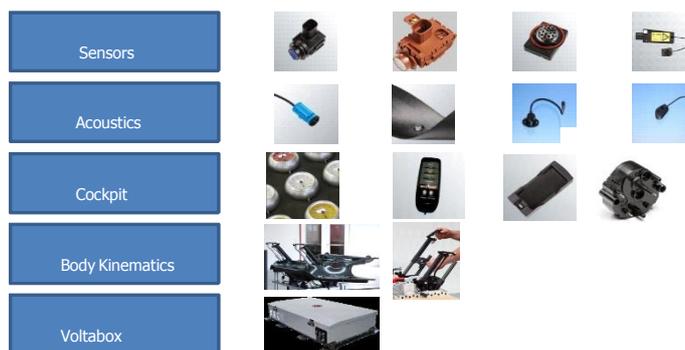
Source: paragon AG

## Corporate profile and business model

*Leading provider of value-added products*

### Well-established partner of the automotive industry

The company does business in different divisions; the divisions “sensors” and “acoustics” are currently its two most important sales pillars, with each of contributing more than 30% to the company’s total sales.



Source: paragon AG

### Sensors

The division produces sensors for a) air-quality management and b) the powertrain. We describe several products below.

- a) Air-quality management  
paragon’s AQS® air-quality sensors protect the passengers of a car and increase their well-being and health. They detect noxious gases such as diesel or gasoline vapours and prevent them from entering the vehicle’s interior.  
The air-quality improvement system AQI® (Air Quality Improver) uses a special technique to enhance the passengers’ well-being, security and health. It purifies the air in the vehicle’s interior and improves its quality to that of fresh air. With the help of artificial ionisation, AQI® actively improves the quality of air in the interior. The resultant, natural concentration of negatively charged ions increases the well-being of the passengers and reduces the number of noxious particles and germs in the air.

paragon has developed the first CO<sub>2</sub> sensor especially for automotive applications. It is integrated into the ventilation system and leads to health benefits for customers by reducing pollution in the interior. Furthermore, this sensor is also needed for the new CO<sub>2</sub> A/C systems.

Odorifier: The fragrance system developed by paragon provides an innovative option to highlight the owner’s individuality discreetly in the interior. Together with the vehicle manufacturer and an experienced perfume manufacturer paragon provides the customers with a range of selected fragrance creations.

- b) Powertrain  
paragon’s clutch travel sensor enables a smooth detection of the clutch pedal position. This enables start-stop solutions and enhances velocity control.

The all-gear sensor senses gear selection in manual transmissions. It is based on a sensor technique which accurately detects rotation and longitudinal motion in shafts and axles.  
The start-stop sensor recognises the neutral position in manual transmissions. Secure detection of the neutral position is necessary in order to start the motor reliably again after the automatic stop.

*Air-quality management sensors an important product for the Chinese market, too*

### *Clocks powered by self-developed stepper motors*

#### **Cockpit**

The division offers solutions for the cockpit area.

##### a) Display instruments

paragon offers, for example, high-quality clocks powered by self-developed stepper motors.

In addition, the company recently developed a curved high-resolution touch OLED central display with precise movement mechanics and concealed support compartments.

##### b) Charging trays/cradles

paragon offers consoles and cradles for mobile phones and smartphones which support hands-free communication and cable-free charging.

##### c) Media interfaces

Multimedia adapters and media interfaces by paragon make it possible to connect mobile devices smoothly to a vehicle's electronic system.

##### d) Controls

paragon offers steering wheel gearshift paddles, boot lid buttons and, just recently, touch steering wheel controls, which permit an intuitive operation of the desired functions by touching, wiping or pushing.

##### e) Stepper motors

Stepper motors by paragon meet all requirements on smooth running, torque, temperature resilience and precision and drive display instruments in vehicles.

### *High-quality microphones and sound systems*

#### **Acoustics**

The division produces hands-free, communication and sound systems.

##### a) Microphones

paragon produces hands-free microphones with very low wind sensitivity.

##### b) System solutions

Among other things, paragon offers 4D sound systems. In contrast to traditional systems, this is a decentralised system in which the amplifier channel and speaker and/or speaker groups are combined to create compact units and distributed as such in the vehicle via a newly developed digital two-wire audio bus.

### *Well-known sports cars producers as customers*

#### **Body kinematics**

paragon develops moving parts of a car's body, both on the inside and on the outside.

##### a) Aerodynamics

The company develops spoiler systems, mostly for premium sports cars.

##### b) Peripheral devices for convertible tops

paragon offers reliable and innovative solutions for complete and complex cover compartments.

### Electromobility

Voltabox Deutschland GmbH in Delbrück and Voltabox of Texas, Inc. produce high-performance lithium-ion batteries for all types of vehicles and for storage. The company works for the following sectors:

- **Public transport**  
The company has already received several large-scale orders from public transport companies. At the beginning of June 2013 paragon announced that it would produce high-performance battery packs for a fleet of trolley buses. The battery packs, which weigh about 500 kilograms each, are destined for trolley buses in Geneva and Lucerne. The order came from Vossloh-Kiepe, a subsidiary of Vossloh AG. This partnership was extended during the past year, with Voltabox of Texas, Inc. receiving a large-scale battery pack order in the double-digit million dollar segment. Vossloh-Kiepe, an engine specialist, will use the high-performance Voltabox systems as emergency batteries for roughly 200 new trolley buses in Seattle and San Francisco. Deliveries already started in 2014, and the order contains an expansion option to a total of 530 trolley buses. However, most of the sales revenues will probably be realised in 2015 and 2016.
- **Intralogistics**  
paragon also won large orders in the intralogistics segment. In March 2015, Voltabox Deutschland GmbH announced a strategic partnership with Triathlon Batterien GmbH, Glauchau, for the European market. Voltabox will supply lithium-ion batteries for intralogistics purposes, for example for electrical forklifts and driverless transport systems. Triathlon is a leading supplier of traditional lead batteries for this market segment in Germany and plans to improve its position by offering Voltabox's lithium-ion batteries. Triathlon is paragon's partner for North America, too. Thus, after the strategic partnership with Vossloh-Kiepe for electric buses, Voltabox is now getting access to a second large market segment.
- **Stationary storage**  
Voltabox offers professional suppliers of photovoltaics systems a useful supplement, namely battery systems which can be used for interim storage and can increase the potential utilisation of self-generated solar power to up to 100%.

In addition, the company offers Li-ion starter batteries.

Voltabox presented additional global novelties at the IAA, which should help to accelerate sales growth. The most interesting product is an electric motor with an inverter. The motor has a total output of 300 kW (peak output 390 kW) and a torque of 575 ft-lb. The maximum motor speed is 12,500 rpm, the maximum efficiency at 6,900 rpm is up to 95%.

*Large orders for trolley buses...*

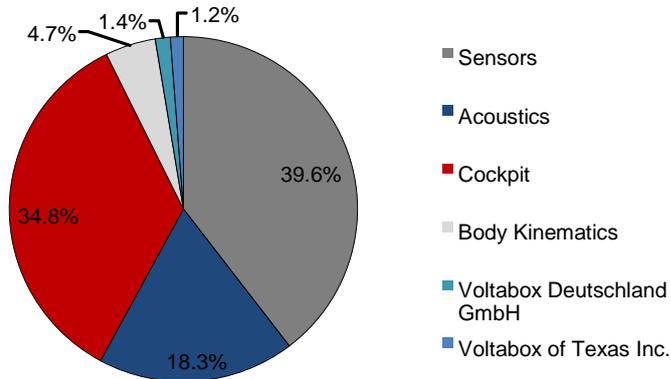
*... and forklifts*

*Batteries can be used to store solar power*

*Novelties presented at the IAA*

Currently most important division: sensors

Sales by business divisions in 2014



Source: paragon AG, quirin bank

paragon supplies well-known carmakers around the world

paragon supplies all well-known carmakers

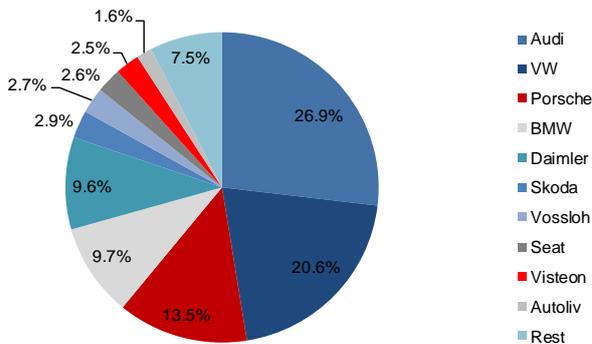


Source: paragon AG, quirin bank

Audi currently the most important customer

Customer structure

As of 30 June 2015, Audi was paragon's most important customer with a share of 26.9% in total sales. Volkswagen was in the second place (20.6%), followed by Porsche (13.5%). The accumulated share of premium carmakers (Audi, Porsche, BMW and Daimler) amounted to 59.7%. This clearly reflects paragon's focus on high-quality components.



Source: paragon AG, quirin bank

## Market environment

### Stable market development

The VDA (German Association of the Automotive Industry) explained in a statement in December 2015 that the three major automotive markets – Western Europe, the US and China – have grown again this year. They ensure that the global passenger car market will increase again in 2015 – by 1% to 76.9 million units.

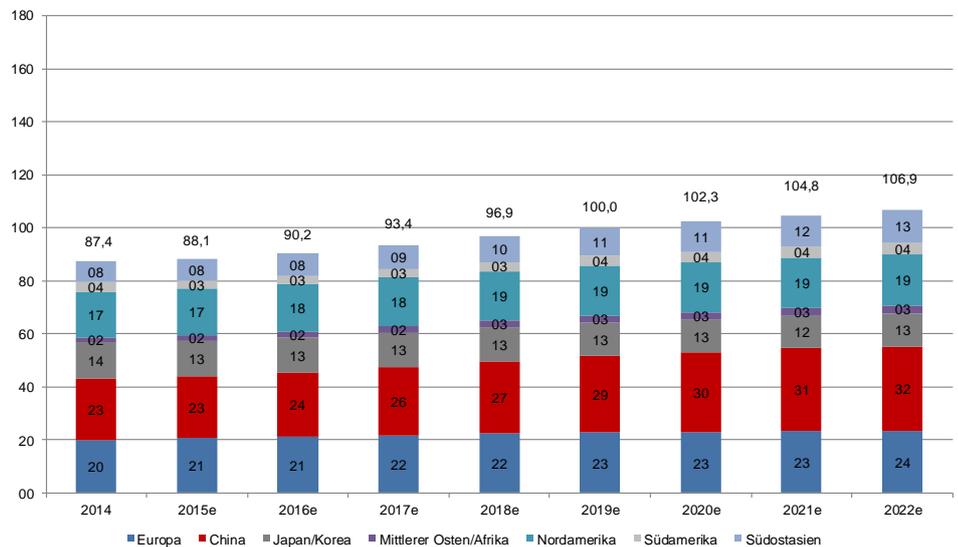
The US market exceeds the 17 million mark and will grow by 5% to 17.2 million light vehicles. Regarding China, the VDA expects 2015 to show a rise of 4% to over 19 million passenger cars. The five largest automotive countries in Western Europe all show growth: Germany is expanding by 4%, and France by 5%. The United Kingdom's increase of 6% puts it on a new record level. Italy and Spain both record double-digit growth. The smaller Western European markets are also continuing their recovery, for instance Portugal (+26%) and Ireland (+25%).

For 2016 the VDA's expectations are as follows: The global passenger car market is said to expand by 2% to 78.1 million units. In particular, the US market will in all probability increase by 1% in 2016 to 17.4 million light vehicles. In China the association expects a rise of 2% to 19.5m passenger cars and in Western Europe the VDA expects 2016 to bring expansion of 1% to nearly 13.1 million units. However, all forecasts for the coming year are made on the assumption that the general conditions will not become worse.

*IHS forecasts continued growth in the coming years*

### Global car production (October 2015)

According to IHS Automotive, global car output is likely to rise 2% in 2016, with increases in all major regions (Europe, China, US) and minor declines only in Latin America and Japan/Korea.



Source: IHS Automotive (October 2015)

## Financial situation and balance sheet

### Key aspects concerning the profit and loss statement, balance sheet and cash flows

#### *Strong sales growth likely*

- We forecast sales growth of ~23% for the current financial year. We expect medium to high one-digit growth rates for the sensors, acoustics and body kinematics divisions; sales in the cockpit division are likely to jump by about 20%, not least due to the takeover of SphereDesign GmbH. The two Voltabox companies are likely to double their sales to c. EUR 6.5m. We forecast growth of c. 10% (2016e) and 19% (2017e). Depending on the development of the electromobility division, this estimate might be too conservative.
- We expect higher write-downs due to the capital expenditure during the past year. In 2013 and 2014, write-downs (excl. depreciations) amounted to EUR 4.3m; for 2015 we forecast EUR 7.0m and for 2016 and 2017 more than EUR 7m, too.
- The EBIT margin of c. 7.9% forecast by the company for 2015 appears plausible. Due to cost degression effects and better procurement conditions for higher volumes the margin is likely to improve further, despite higher write-downs.
- The cash flow from current operations is likely to rise steadily due to the improved results. After EUR 6.9m in 2014, we forecast EUR 10.7m for 2015 and more than EUR 12m for 2016.
- The equity ratio is expected to stabilise and come in at just below 27.0% in 2016 (2014: 27.6%). We forecast a ratio of 23.9% for the current financial year, largely due to the investment expenditure.
- Investment expenditure is likely to amount to c. EUR 28m in 2015. One-off effects (acquisitions, purchase of buildings) make up more than EUR 10m of this total.

## Profit &amp; loss statement

Profit & loss statement (EUR m)	2013	YOY	2014	YOY	2015e	YOY	2016e	YOY	2017e	YOY
<b>Sales</b>	<b>73.9</b>	<b>4.9 %</b>	<b>79.0</b>	<b>7.0 %</b>	<b>97.0</b>	<b>22.7 %</b>	<b>106.9</b>	<b>10.2 %</b>	<b>127.2</b>	<b>19.0 %</b>
Unfinished Goods	0.3		0.8		1.0		1.1		1.3	
Other own work capitalized	1.7		5.2		5.0		2.6		3.3	
Other operating earnings	1.1		1.4		1.3		1.0		1.2	
Cost of goods	36.3		41.8		51.4		56.6		67.4	
Gross profit	40.6		44.5		52.9		55.0		65.6	
Personnel expenses	19.6		21.8		26.7		29.4		35.0	
Depreciation	4.6		4.3		7.0		7.2		7.0	
Other operating expenses	8.5		12.2		11.5		8.7		10.9	
<b>EBITDA</b>	<b>12.5</b>	<b>6.0 %</b>	<b>10.5</b>	<b>-15.8 %</b>	<b>14.7</b>	<b>39.5 %</b>	<b>16.8</b>	<b>14.3 %</b>	<b>19.7</b>	<b>17.5 %</b>
EBITDA margin (%)	16.92		13.32		15.14		15.71		15.51	
<b>EBIT</b>	<b>7.9</b>	<b>1.9 %</b>	<b>6.2</b>	<b>-21.1 %</b>	<b>7.7</b>	<b>22.6 %</b>	<b>9.6</b>	<b>25.6 %</b>	<b>12.7</b>	<b>32.2 %</b>
EBIT margin (%)	10.72		7.91		7.90		9.00		10.00	
Net interest	-1.5		-2.0		-2.5		-3.2		-3.2	
Income from Participations	0.0		0.0		0.0		0.0		0.0	
Net financial result	-1.5		-2.0		-2.5		-3.2		-3.2	
Exceptional items	0.0		0.0		0.0		0.0		0.0	
<b>Pretax profit</b>	<b>6.4</b>	<b>-4.0 %</b>	<b>4.3</b>	<b>-33.4 %</b>	<b>5.2</b>	<b>20.7 %</b>	<b>6.4</b>	<b>23.2 %</b>	<b>9.5</b>	<b>48.7 %</b>
Pretax margin (%)	8.71		5.42		5.33		5.96		7.45	
Taxes	2.5		1.5		1.6		1.9		2.8	
Tax rate (%)	38.63		35.27		30.00		30.00		30.00	
Earnings after taxes	3.9		2.8		3.6		4.5		6.6	
Minorities	0.0		0.0		0.0		0.0		0.0	
<b>Group attributable income</b>	<b>3.9</b>	<b>-14.8 %</b>	<b>2.8</b>	<b>-29.7 %</b>	<b>3.6</b>	<b>30.5 %</b>	<b>4.5</b>	<b>23.2 %</b>	<b>6.6</b>	<b>48.7 %</b>
No. of shares (m)	4.1		4.1		4.1		4.1		4.1	
<b>Earnings per share (EUR)</b>	<b>0.96</b>	<b>-14.8 %</b>	<b>0.67</b>	<b>-29.7 %</b>	<b>0.88</b>	<b>30.5 %</b>	<b>1.08</b>	<b>23.2 %</b>	<b>1.61</b>	<b>48.7 %</b>

## Balance sheet

Balance sheet (EUR m)	2013	YOY	2014	YOY	2015e	YOY	2016e	YOY	2017e	YOY
<b>Assets</b>										
Cash and cash equivalents	17.6		13.3		8.7		10.0		16.3	
Accounts receivables	6.0		9.8		12.0		13.2		15.7	
Inventories	7.5		6.9		8.5		9.3		11.1	
Other current assets	1.4		1.8		1.8		1.8		1.8	
Tax claims	0.5		0.6		0.6		0.6		0.6	
<b>Total current assets</b>	<b>33.1</b>	<b>30.4 %</b>	<b>32.3</b>	<b>-2.3 %</b>	<b>31.6</b>	<b>-2.3 %</b>	<b>35.0</b>	<b>10.6 %</b>	<b>45.5</b>	<b>30.3 %</b>
Fixed assets	13.0		20.2		31.2		33.4		32.6	
Goodwill	0.0		0.0		0.0		0.0		0.0	
Other intangible assets	5.6		9.4		19.4		19.4		19.4	
Financial assets	0.1		0.4		0.4		0.4		0.4	
Deferred taxes	0.0		0.0		0.0		0.0		0.0	
Other fixed assets	0.1		0.1		0.1		0.1		0.1	
<b>Total fixed assets</b>	<b>18.8</b>	<b>1.4 %</b>	<b>30.1</b>	<b>59.7 %</b>	<b>51.1</b>	<b>69.7 %</b>	<b>53.3</b>	<b>4.4 %</b>	<b>52.5</b>	<b>-1.4 %</b>
<b>Total assets</b>	<b>51.9</b>	<b>18.1 %</b>	<b>62.4</b>	<b>20.2 %</b>	<b>82.7</b>	<b>32.4 %</b>	<b>88.2</b>	<b>6.8 %</b>	<b>98.1</b>	<b>11.1 %</b>
<b>Equity &amp; Liabilities</b>										
Subscribed capital	4.1		4.1		4.1		4.1		4.1	
Reserves & other	2.5		2.5		2.5		2.5		2.5	
Revenue reserves	9.3		10.7		13.3		16.6		21.8	
Accumulated other comprehensive income	0.0		-0.1		-0.1		0.1		0.3	
<b>Shareholder's equity</b>	<b>15.9</b>	<b>22.0 %</b>	<b>17.2</b>	<b>8.2 %</b>	<b>19.8</b>	<b>15.1 %</b>	<b>23.2</b>	<b>17.3 %</b>	<b>28.6</b>	<b>23.2 %</b>
Minorities	0.0		0.0		0.0		0.0		0.0	
<b>Shareholder's equity incl. minorities</b>	<b>15.9</b>	<b>22.0 %</b>	<b>17.2</b>	<b>8.2 %</b>	<b>19.8</b>	<b>15.1 %</b>	<b>23.2</b>	<b>17.3 %</b>	<b>28.6</b>	<b>23.2 %</b>
<b>Long-term liabilities</b>										
Pension provisions	1.2		1.9		2.3		2.5		3.0	
Financial liabilities	10.2		10.1		8.1		8.1		8.1	
Tax liabilities	0.9		1.1		1.4		1.5		1.8	
Other liabilities	1.8		3.0		3.6		4.0		4.8	
<b>Total long-term debt</b>	<b>23.9</b>	<b>39.7 %</b>	<b>29.0</b>	<b>21.4 %</b>	<b>28.9</b>	<b>-0.1 %</b>	<b>29.7</b>	<b>2.6 %</b>	<b>31.2</b>	<b>5.2 %</b>
<b>Short-term debt</b>										
Other provisions	0.1		0.1		0.1		0.1		0.1	
Trade payables	3.4		6.1		7.5		8.3		9.8	
Financial debt	2.2		5.0		20.1		20.1		20.1	
Other liabilities	6.5		5.0		6.1		6.7		8.0	
<b>Total short-term debt</b>	<b>12.2</b>	<b>-12.1 %</b>	<b>16.2</b>	<b>33.4 %</b>	<b>33.9</b>	<b>108.8 %</b>	<b>35.3</b>	<b>4.2 %</b>	<b>38.2</b>	<b>8.2 %</b>
<b>Total equity &amp; liabilities</b>	<b>51.9</b>	<b>18.1 %</b>	<b>62.4</b>	<b>20.2 %</b>	<b>82.7</b>	<b>32.4 %</b>	<b>88.2</b>	<b>6.8 %</b>	<b>98.1</b>	<b>11.1 %</b>

## Financial key ratios

Key ratios	2013	2014	2015e	2016e	2017e
<b>Per share data (EUR)</b>					
EPS	0.96	0.67	0.88	1.08	1.61
Book value per share	3.9	4.2	4.8	5.6	7.0
Free cash flow per share	1.2	1.7	2.6	3.0	3.2
Dividend per share	0.25	0.25	0.30	0.35	0.45
<b>Valuation ratios</b>					
EV/Sales	1.56	1.59	1.49	1.34	1.08
EV/EBITDA	9.2	12.0	9.8	8.6	7.0
EV/EBIT	14.5	20.2	18.9	14.9	10.8
P/E	9.5	19.2	30.2	24.5	16.5
P/B	2.4	3.1	5.5	4.7	3.8
Dividend yield (%)	2.7	1.9	1.1	1.3	1.7
<b>Growth</b>					
Sales growth (%)	4.9	7.0	22.7	10.2	19.0
EBITDA growth (%)	6.0	-15.8	39.5	14.3	17.5
EBIT growth (%)	1.9	-21.1	22.6	25.6	32.2
EPS growth (%)	-14.8	-29.7	30.5	23.2	48.7
<b>Profitability ratios</b>					
EBITDA margin (%)	16.9	13.3	15.1	15.7	15.5
EBIT margin (%)	10.7	7.9	7.9	9.0	10.0
Net margin (%)	5.3	3.5	3.7	4.2	5.2
ROCE (%)	19.9	13.5	15.7	18.2	21.3
<b>Financial ratios</b>					
Total equity (EUR m)	15.9	17.2	19.8	23.2	28.6
Equity ratio (%)	30.6	27.6	23.9	26.3	29.2
Net financial debt (EUR m)	5.7	16.6	35.3	34.2	28.4
Net debt/Equity	0.3	0.3	0.2	0.3	0.3
Interest cover	5.2	3.2	3.1	3.0	3.9
Net debt/EBITDA	0.5	1.6	2.4	2.0	1.4
Payout ratio (%)	26.1	37.1	34.1	32.3	27.9
Working Capital (EUR m)	20.9	16.1	-2.3	-0.4	7.3
Working capital/Sales	0.28	0.20	-0.02	0.00	0.06

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16.12.2015	30.00	Buy	16.12.2015

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