paragon

Electrifying performance

Initiation of coverage

Automotive electronics

paragon is set to deliver 22%, 44% and 46% three-year CAGR in revenues, PBT and EPS respectively, driven predominantly by substantial growth from the group's move into electromobility and new product areas such as body kinematics. This is built upon a strong core business in automotive electronics with a unique culture and development approach at the forefront of technological trends. With few directly comparable peers that can match such growth, we use a DCF valuation approach yielding a €30.1/share fair value.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/14	79.0	4.3	0.67	0.0	26.8	N/A
12/15e	99.3	7.9	1.29	0.0	13.9	N/A
12/16e	117.7	10.3	1.68	0.0	10.7	N/A
12/17e	141.8	12.9	2.10	0.0	8.5	N/A

Note: *PBT and EPS are normalised, excluding intangible amortisation, exceptional items and share-based payments.

Strategy to rapidly expand non-automotive reach

Founded in 1988, paragon's core business has been built on a strategy of identifying emerging trends and developing systems ahead of, as opposed to in response to, requests from OEMs. This has led to significant success in automotive, accounting for 95% of 2014 revenues, 80% of which are derived from strong German OEMS. With the same R&D and systems approach being used to rapidly expand in electromobility, we forecast that 27% of revenue will come from non-automotive markets by 2017, supported by existing contracts and partnerships and providing higher growth and margin potential.

Trajectory highlighted in H1 results

H115 results highlighted the benefits of the group's growth strategy with revenues up 18% to €44.6m (H114: €37.8m), EBIT more than doubling to €3.8m (H114: €1.5m) and EPS rising to €0.46 (H114: €0.09), driven by growth across all divisions and an initial contribution from the February 2015 acquisition of SphereDesign. With significant contract wins in the period for starter batteries, intralogistics and body kinematics, the group has a 2015-19 order backlog of >€640m and 97% order cover for FY15 targets of c €100m revenue and 10% EBIT margin.

Valuation: Multiple growth drivers exist

paragon has multiple growth drivers to accelerate performance and deliver enhanced shareholder value. With the opening of Voltabox Texas complete and delivery expected from the Chinese production facility in the coming months, we anticipate the growth trajectory to continue over the next three years. As this growth is delivered, the rating should rapidly compress. We feel however that short-term ratings do not fully reflect this potential and therefore use a DCF approach to yield a fair value of €30.1 per share, assuming 10% margins, 2% terminal value at a 10% WACC.

2 September 2015

Price	**€17.95**
Market cap	**€74m**

Net debt (€m) at 30 June 2015	27.4
Shares in issue	4.1m
Free float	48%
Code	PGN
Primary exchange	Frankfurt
Secondary exchange	N/A

Share price performance

%	1m	3m	12m
Abs	(7.5)	6.0	34.0
Rel (local)	5.7	21.0	26.8
52-week high/low		€20.38	€11.40

Business description

paragon designs and manufactures advanced automotive electronics solutions as a direct supplier to the automotive industry. Products include: sensors; acoustics; cockpit; electromobility; and body kinematics. Production facilities are in Germany, the US and production will soon commence in China.

Next event

IAA Frankfurt Motor Show	17-25 September 2015

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Edison profile page

paragon is a research client of Edison Investment Research Limited

Investment summary

Company description: Electrifying performance

paragon has an established track record since 1988, originally as an industrial electronics subcontract manufacturer, but subsequently concentrating primarily on the automotive market. Its strategy is to develop products and systems ahead of OEM demand to capture unique, market leading positions in niche applications. This success has been consistently demonstrated and the group is currently commencing a significant growth phase based on: 1) a strong underlying automotive core with increasing systems content and revenue per vehicle, worth several times product sales, offsetting potential cyclicality; and 2) new market segments such as electromobility and body kinematics, which over the next three years alone, are set to contribute c 65% of growth.

Valuation: Rating does not reflect growth and technology

We believe that paragon should be rated as a high growth, technology-rich automotive supplier. It appears paragon is rated in line with larger automotive electronics and systems peers in the short term. However, there is little premium attached to the group's strategy and the substantial growth potential of the Electromobility division, which in our forecasts, is set to become the largest single contributor by 2017. To gain a true appreciation of the intrinsic value within paragon, we feel that a DCF valuation provides a more complete view of both the growth and margin potential that exists with our DCF fair value, yielding a fair value of €30.1.

Financials: H115 demonstrates trajectory

H115 results highlighted the benefits of the group's growth strategy with revenues up 18% to €44.6m (H114: €37.8m), EBIT more than doubling to €3.8m (H114: €1.5m) and EPS rising to €0.46 (H114: €0.09), driven by growth across all divisions, an initial contribution from the February 2015 acquisition of SphereDesign and the start of returns from the group's investment in new divisions in 2013 and 14. With significant contract wins in the period received for starter batteries, intralogistics and body kinematics, the group has an order backlog of over €640m and 97% order cover for management's FY15 targets of c €100m revenue and 10% EBIT margin.

Sensitivities: Decreasing exposure to direct automotive

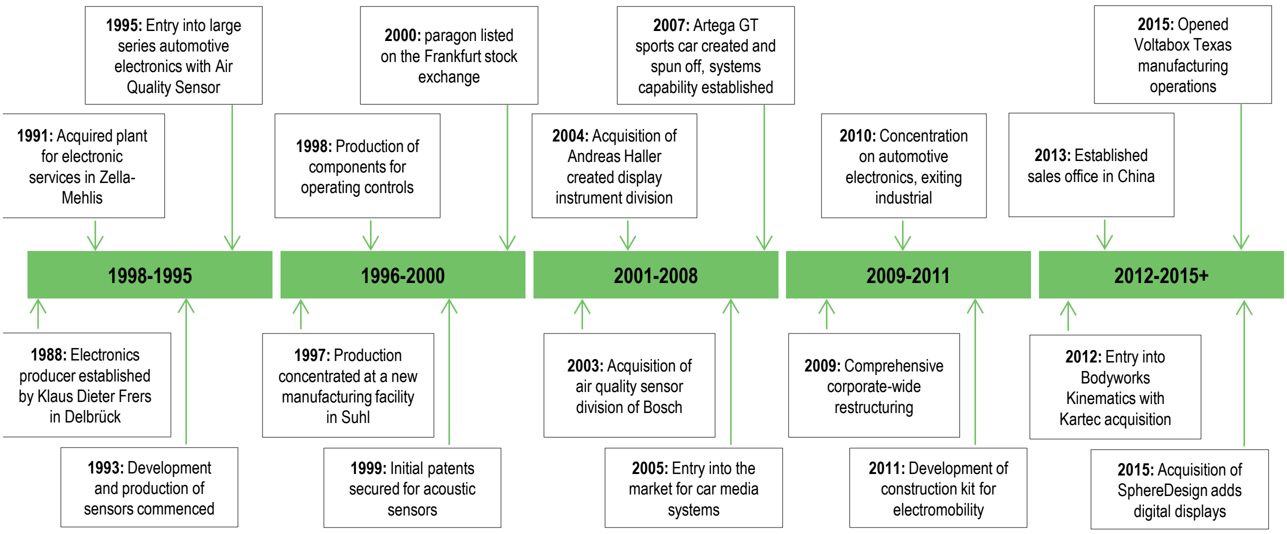
With the majority of sales still direct to the automotive market, paragon is sensitive to economic conditions and automotive trends; however it is less correlated to the mass market and associated cyclicality.

- Decoupling from direct end-market fortunes – 80% of group revenues are from the German premium manufacturers, while increasing revenue per car being won in new systems provides a non-linear relationship to underlying automotive volumes. Automotive cost pressures and competition exist, however the group designs technologically advanced products through a best-cost design for manufacture approach, with a high degree of automation.
- Expansion to new market segments – to provide a further balancing of the group's exposure to direct automotive factors, the group has expanded to adjacent markets where similar high-quality systems engineering requirements exist, particularly in electromobility. It approaches this through relationships with strong partners in each target market, supported by good contract visibility and dedicated production facilities, mitigating inherent risks of this strategy.
- Management and ownership concentration – the group is exposed to a high reliance on a small number of key personnel, in particular CEO Klaus Dieter Frers. This is mitigated by the three man supervisory board, as well as the recent appointment of Dr Schwehr as CTO, providing governance as well as broadening management bandwidth.

Company description: Imagineering the future

paragon was established by founder and major shareholder, Klaus Dieter Frers in March 1988, originally as an industrial electronics subcontract manufacturer, but subsequently concentrating primarily on the automotive market. Exhibit 1 below highlights the group's timeline.

Exhibit 1: Timeline of development/major milestones



Source: Edison Investment Research

The group has undergone five key phases: 1988-95: start-up in industrial electronics; 1996-2000: entry into automotive electronics; 2001-08: emergence as a systems supplier; 2009-11: concentration on automotive; and 2012-15 and beyond: expansion to higher-quality systems and adjacent markets. The approach has been to identify emerging trends and develop products ahead of OEMs. Acquisitions have also played a part, such as SphereDesign in February 2015, which expanded the group's capability into digital cockpit displays. The group is organised by product divisions with existing business managed by dedicated customer teams as shown in Exhibit 2.

Exhibit 2: paragon's divisional structure

	Sensors (40%)	Acoustics (18%)	Cockpit (35%)	Body Kinematics (5%)	Electromobility (2%)
2014 revs	€31m	€14m	€28m	€4m	€2m
Products	**Solutions for improving air quality within the vehicle cabin:** • Air quality sensor (AQS), conditioner (AQC) and improver (AQI) • CO_2 sensor • PM 2.5 particle sensor • Fragrance system **Solutions for optimising drivetrain control systems:** • Position sensors • All gear sensors • Start-stop sensors • 3-D sensor • Gear lever sensors	**Products designed to ensure the transmission of speech without loss of quality:** • Microphones for use with hands-free kits or noise sensing • Integrated seatbelt microphone: belt-mic	**Broad portfolio of products designed for the cockpit:** • Media interfaces • Wireless charging phone trays • cTablet docking station • MirrorPilot: head unit platform for entry- and mid-market vehicles • Control systems • Display instruments: analogue and digital • Stepper motors • Reversing camera system	**Innovative technical solutions for the efficiency and comfort of the moving parts of the automobile body:** • Steering column paddle shifters • Aerodynamics: spoiler, windshield deflector and cooling louvre systems systems • Convertible-top systems: rear side flaps and wind deflectors	**Li-Ion battery packs marketed through two subsidiaries: Voltabox Deutschland (Germany) and Voltabox Texas (US) serving various markets:** • Buses (electric, hybrid, trolley) • Intralogistics (fork lifts, AGV) • Starter batteries (cars, bikes, scooters, military) • Traction batteries (scooters) • Power generators (military) • Stationary systems (grid levelling, solar back-up)
Main Competitors	• SGX • Applied Sensor • Sensata • Hella • Denso • NTK • AEC • Samsung • Sharp • Panasonic • Bosch • Casco • Kostal • Behr • BYD • Cherry •Tyco • Electricfil	• AKG • Peiker	• Peiker • Novero • Sonceboz • Juken • Kostal • Preh • BHTC • Continental • S1nn • Parrot • Bosch • Visteon • Stoneridge	• Suspa • HS Genion	• Visteon • ACTIA • Navitas • Enerdel • Akasol

Source: paragon, Edison Investment Research

paragon operates a centralised, highly-automated manufacturing approach with products designed for ease of production from the outset, giving the company a competitive edge over many of its peers. While there appear to be many competitors, in reality there are very few participate in more than one or two specific product lines. Exhibit 3 shows the locations of paragon's operations.

Exhibit 3: paragon's operating locations

Source: paragon

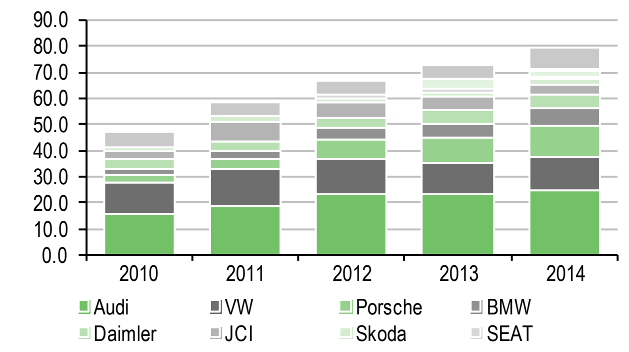
Strategy of evolution and incremental opportunities

The group's strategy is to deliver revenue and earnings growth through a diversified revenue mix, while becoming less dependent on developments in the automotive industry, to achieve the optimal mix between growth opportunities and sustainability. There are several key pillars to the strategy.

Supply successful blue-chip customers with a focus on premium segment

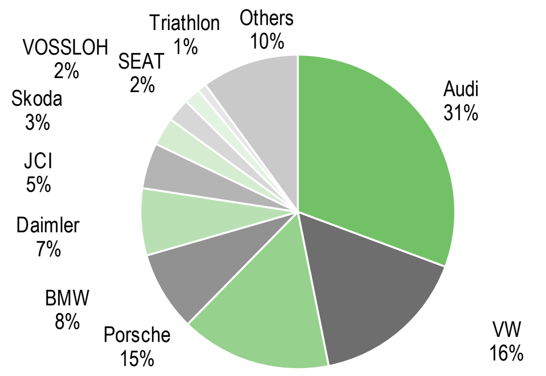
paragon has a strong and diverse list of customers as shown in Exhibits 4 and 5 below.

Exhibit 4: Sales to current top 10 (2010-14, €m)



Source: paragon

Exhibit 5: Top 10 customers 2014



Source: paragon

As shown, c 80% of the group's revenues are derived from the German automakers VW Group, Daimler and BMW. This distribution channel and access as a tier-one supplier to such clients is a key differentiator of the group and has taken significant time to build. In order to achieve such a position, paragon has focused on the creation of products that are designed to enhance end-user experience in the car, whether it be improved air quality or improved quality of communication. With such features, paragon has a natural customer base in the premium end of the automotive market where these are most often valued by OEMs.

We believe that this customer concentration provides the group with substantial resilience in its core automotive business, as these OEMs have outperformed the mass-market peers over each of the past five years and account for c 66% of the global premium automotive market. Global automotive markets are expected by LMC Automotive to grow by 2.1% in 2015 with growth of 4-5% thereafter, as current growth in the US and Western Europe is tempered by easing rates in China and difficulties in Russia and Brazil. The volume share of the premium market from the German OEMs is anticipated to rise further by the German Association of the Automotive Industry (VDA) to c 70%, equating to 14% of all production.

Creating superior systems

With innovation a key component of paragon's strategy, the group spends an above-average level on R&D, averaging c 10% of revenue pa over the past five years. The group has a unique combination of capabilities across systems engineering, electronics, software, sensor chemistry and physics, as well as electromechanics, which positions it to develop products with unique selling points that OEMs demand. In return, paragon maintains significant IP and superior margin performance compared to typical peers in the automotive equipment supply chain. This position is highlighted by the fact that c 64% of the group's sales are supplied under sole-source contracts.

paragon has also moved from a provider of simply components and products to a developer of entire systems, both increasing the content per vehicle to many times that of a single product and also becoming increasingly involved with development with OEMs as a strategic partner. There are numerous recent examples of new systems developments.

- Body kinematics – spoiler drive for German Supercar. paragon received an advanced development order for a spoiler module from a renowned German sports car manufacturer. The group also received several further serial production orders for numerous movable flaps, highlighting how this high-growth segment is increasing in importance to high-end manufacturers as a means to not only improve handling characteristics, but also improving CO_2 emissions through improved whole-car aerodynamic performance.
- Electromobility – battery packs. Key to paragon's approach is the highly modular approach to its lithium-ion battery pack offering, allowing a common cell core to be used to maintain low-cost production, while also providing scalable solutions to meet differing power needs.
- Cockpit – head unit for the mid market. At the forthcoming Frankfurt motor show, paragon will be exhibiting its MirrorPilot system, designed to integrate a wide range of in-car communication, navigation and control features in a scalable architecture, to enable head unit functionality to be achieved at a price point suitable for mid-market vehicles. This brings together a broad range of paragon's cockpit capabilities, as well as significant software and systems engineering.
- Cockpit – acquisition of SphereDesign. Through the February 2015 acquisition of SphereDesign, paragon not only added digital instruments to its cockpit portfolio, but also brought increased capabilities in controls and display systems development to complement its existing strength in analogue display production. SphereDesign's MD Markus Barth was simultaneously appointed as director in charge of paragon's Cockpit division.

Become a leader in electromobility – key growth driver

Following the decision to directly enter the electromobility market through creation of its Voltabox subsidiary, paragon secured an initial contract with Vossloh-Kiepe in June 2013 to supply 42 backup power modules for trolley buses in Geneva and Lucerne providing combined battery, power management and electronics control with stringent automotive safety quality. The group then commenced the expansion of a highly automated manufacturing facility in Delbrück. paragon has followed a clear strategy to concentrate on those markets where batteries are already established, and the group's lithium-ion batteries provide an advantage over traditional lead-acid batteries, with 60% lower weight, better cold start characteristics and longer life. While the group's expertise in electronics, power management and systems integration positions it to provide entire power systems solutions. This has meant targeting markets such as: electric, hybrid and trolley buses; intralogistics markets such as fork lifts; starter batteries for traditional combustion engines; traction batteries for scooters; and small scale power generators and load levellers for stationary applications. This will allow paragon to diversify away from the pure automotive market, reducing potential cyclicality.

Strategic partnerships accelerate route to market

paragon has also ensured it has the most appropriate route to market for each segment by aligning itself with strong partners with established distribution networks and clients. By doing so, the group has been able to ensure it can rapidly secure revenues, without the need to establish its own distribution networks or incurring the associated costs:

- Vossloh-Kiepe – following the initial contract in 2013, paragon established a strategic relationship with Vossloh-Kiepe, which provides ready-made access to trolley buses through this leader in electric buses with annual sales of c €200m. The relationship was extended in May 2014 when paragon's US subsidiary, Voltabox of Texas, received a major order for battery packs, worth double-digit millions of dollars for supply of backup power supply batteries for a new fleet of 200 electric trolley buses in Seattle and San Francisco, initial production commenced in 2014 and is due for delivery throughout 2015 and 16. The order includes an option for a further potential 330 battery packs to cover a total of 530 electric buses, highlighting the benefit of this partnership.

- Triathlon Batterien – in March 2015, paragon announced it had entered into a strategic partnership for the European market with Triathlon Batterien in an exclusive agreement for the supply of lithium ion batteries for the intralogistics market. Triathlon is one of the leading providers in Germany of traditional lead acid batteries to this market and wants to expand this through the use of Voltabox's high performance lithium-ion batteries. The long-term agreement covers production of several thousand battery modules a year with initial production in 2015 of several hundred modules, rising from 2016 onwards. This secures a second electromobility revenue stream of several million euros pa with contractually agreed minimum volumes and we expect that this cooperation will be extended to include North America.

Other contracts already in place provide visibility

In addition to the partnerships with Vossloh-Kiepe and Triathlon, paragon also announced on 31 July 2015, that it had received a €72m, six-year contract from a well-known German automotive OEM for its battery packs to be used as starter motors within conventionally powered vehicles. Initial specimens were supplied in August 2015 and production will start in May 2016. We believe that combined, announced contracts from these three opportunities alone provide a backlog of almost €200m in electromobility and will generate annualised revenue of a c €38m pa run rate, set to make the division the group's largest, within three years. With numerous other potential follow-on and expanded contracts with these three partners, let alone other potential customers, we see significant embedded growth from this division over the coming five years and beyond.

Internationalise the group

paragon had in recent years, been predominantly focused in Germany, but recognised that further internationalisation of the group was required to capitalise on the market opportunities afforded by its leading position in areas such as air quality systems and growing position in electromobility.

US – Voltabox Texas supports 'buy American' requirements

Having secured a contract to supply battery packs to Vossloh-Kiepe for Seattle and San Francisco, paragon initially supplied its battery packs from leased premises. On 21 July 2015, the group held the grand opening of a purpose-built production facility in Austin, Texas, built at a cost of €6m. The 2,000m^2 facility is highly automated and mirrors the Voltabox Desutschland facility in Delbrück, providing improved efficiency, flexibility and lead times, as well as a significant capacity increase to support anticipated business volumes. Part of the facility will also be leased to Voltabox's partners for their US offices.

In addition, the Austin facility and Voltabox's battery packs delivered from it are certified as complying with the Buy American Act with well over 60% of content derived from US suppliers. This opens up numerous potential markets where only buy American-certified suppliers can be used such as for government contracts, military and many private-sector opportunities.

China – global growth market with increasing quality needs

Having set up a sales office in Shanghai in 2012 to address the local Chinese market, paragon entered into discussion with a potential JV partner, designed to access local OEMs. Having failed to agree mutually acceptable terms, paragon announced in April 2015 that it had decided to pursue the Chinese opportunity alone and is in the process of moving into a new production facility in Kunshan, near Shanghai, with production due to commence in the Autumn. This will initially concentrate on production of paragon's air quality sensors and systems, which have been enhanced to provide additional protection in the high-density pollution cities in China, as well as stepper motors for displays with the expansion of the product range due in a second phase. This will provide incremental opportunities with total RoW sales currently accounting for c 7% of revenues.

The Chinese business is being run by Wolfgang Ketter, an experienced executive who has run the Chinese operations of a global automotive supplier for seven years and who brings with him substantial experience in developing several production sites in China and customer acquisition over 25 years. The business has already secured several direct contracts with Chinese OEMs since the decision to produce locally was announced, and we see this as a long-term upside opportunity for the group.

Management philosophy key to success

Key to paragon's approach is the management philosophy that has been instilled by the founder and CEO Klaus Dieter Frers since the group's creation in 1988, whereby product development is guided through analysis of what the end user will require in the future. As the group has grown, the same approach to creativity has been fostered and enhanced, maintaining the family-owned agile and entrepreneurial culture, while benefitting from the larger corporate integration capability.

In April 2014, the management board was expanded with the appointment of Dr Stefan Schwehr to the post of chief technology officer, responsible for development, sales and customer management. The appointment has allowed Mr Frers to concentrate on the development of the new growth segments and the internationalisation of the group.

Financials support sustained growth trajectory

Over the past three years, paragon has delivered consistent revenue growth in line with its guidance of mid-single digit growth. 2015 is expected to yield further growth through both organic contact wins and the contribution of February 2015's SphereDesign acquisition. Management is targeting revenues of up to €100m and an EBIT margin of 10%, which is supported by a short-term order backlog (2015-19) of over €640m, of which 97% of forecast sales are already secured for FY15 with a lifetime value in excess of €1bn. A high degree of order conversion to sales occurs in these long-term programmes, typically spread over the life of a car model, stretching from between five and seven years in duration.

H1 results highlight benefits of new business developments

paragon's Q2 results highlighted the inherent growth potential across the group and the benefits of the new business streams developed over the past two years.

- Revenue – paragon's H115 revenue increased by 18.2% to €44.6m (H114: €37.8m), with further momentum secured in Q215, up 25.1% over Q214. This was driven by growth across all divisions including a more than doubling of revenue within Body Kinematics, an initial meaningful contribution from Voltabox of Texas within electromobility and the benefit of SphereDesign contributing to the Cockpit division.
- EBITDA and EBIT – cost of materials rose by 18.4%, in line with revenue growth, while personnel expenses rose slightly higher at 19.2%, primarily due to new staff recruited into the group. Overall, H115 EBITDA increased by 78.2% to €6.7m (H114: €3.8m) at an EBITDA margin of 15.0% (H114: 10.0%). Net of depreciation and amortisation of €2.9m (H114: €2.7m), EBIT more than doubled to €3.8m (H114: €1.5m) corresponding to an EBIT margin of 8.6% (H114: 4.0%). We expect this improving margin trend to continue as higher margin Voltabox sales are delivered, following the opening of the US production facility.
- PBT and EPS – with net financial interest marginally up by 8% to €1.0m (H114: €0.9m), PBT was up nearly fivefold to €2.8m (H114: €0.6m). Following taxes of €0.9m (H114: €0.2m), net

income increased by 422% to €1.9m (H114: €0.4m), with a commensurate increase in EPS to €0.46 per share (H114: €0.09).

The good operating performance also delivered a significant improvement in H115 cash flow from operations of €8.0m (H114: €0.1m) benefitting from the strong earnings position, receivables management and the non-recurrence of a prior-year charge relating to the outsourcing of pension obligations. Significant investment of €13.6m was undertaken during H115 (H114: €4.5m) due to investment in property, plant and equipment (PPE, €7.8m) relating to the construction of a production facility in the US, the takeover of PPE of SphereDesign and further replacement/new investment in machinery. A further €5.8m related to investment in intangible assets and the takeover of SphereDesign (H114: €1.2m).

Balance sheet and funding

Net debt at 30 June 2015 increased to €27.4m (H114: €13.0m). We see 2015 as a heavy investment year, however we anticipate investment to return to more normal levels from 2016 onwards. The group's funding is supported through a combination of bank debt and a corporate bond, launched in 2013 with authorisation of up to €20m to support the growth of the group. The group currently has €13m of corporate bonds outstanding.

Forecasts reflect growth expectations across the group

We forecast that there will be growth across all divisions over the coming three years, generating a three-year (2014-2017e) CAGR in sales of 22%, PBT of 44% and EPS of 46%, with the vast majority coming from incremental new market penetration.

- Sensors – we forecast that sensors will grow significantly above market rates of 1-2%, as paragon delivers increasing systems content and more revenue per car, including new orders received in H115, such as second generation air-quality improvers, CO_2 sensors and filter systems. H115 revenues increased by 14% and are supported by lifetime orders of €408.6m.
- Acoustics – we anticipate that acoustics will perform more in line with market growth rates, including inclusion of the group's belt-mic in a basic model of a German automaker's vehicle, but with a more conservative view of development. H115 revenues increased by 3%.
- Cockpit – revenues are forecast to increase substantially in 2015, due to the inclusion of SphereDesign acquired in February 2015, which had revenues of €4m in 2014 and increased orders. In addition, several strategically important orders were received in H115 including in wireless charging systems. H115 revenues increased by 12% year-on-year.
- Body Kinematics – this new segment is forecast to grow substantially over the next three years driven by new spoiler products and systems entering serial production, more development contracts and the increasing importance of aerodynamic systems in reducing CO_2 emissions. H115 revenues more than doubled from €1m to €2.7m and we forecast further growth as new orders received in H115 enter production.
- Electromobility – with substantial orders in hand, including the recently announced starter battery contract, we forecast that Electromobility will become the group's largest division within three years. Growth is expected to ramp up in the US following the opening of the Voltabox of Texas production facility, while the partnership with Triathlon Batterien will deliver several thousand units in 2015, increasing to multiples of that from 2016, highlighting the substantial growth potential. Management has stated it believes that Electromobility will generate between €220-300m of revenues over the next five years, this compares to our conservative forecast of €70m cumulative revenue over the next three years.

Exhibit 6 highlights our specific divisional and group forecasts.

Exhibit 6: Edison divisional and group forecasts for paragon AG

(€m)	FY12	FY13	Growth (%)	FY14	Growth (%)	FY15e	Growth (%)	FY16e	Growth (%)	FY17e	Growth (%)
Revenue											
Sensors	26	28	5.2	31	13.4	34	8.0	35	3.0	36	3.0
Acoustics	11	12	7.1	14	23.7	15	2.0	15	1.0	15	1.0
Cockpit	33	27	-17.2	28	0.8	34	22.0	34	2.0	35	3.0
Body Kinematics	0	4	N/M	4	5.7	7	80.0	12	75.0	18	50.0
Voltabox (Germany)	0	4	N/M	1	-70.6	1	30.0	10	592.5	20	100.0
Voltabox (US)	0	0	N/M	1	N/M	9	852.1	12	33.3	18	50.0
Group	**70**	**74**	**4.9**	**79**	**7.0**	**99**	**25.6**	**118**	**18.6**	**142**	**20.5**
Other income	5	3	-34.2	7	140.7	11	56.3	8	-33.1	5	-37.9
Group operating performance	**75**	**77**	**2.5**	**86**	**12.3**	**111**	**28.2**	**125**	**13.3**	**147**	**16.9**
COGS	-37	-36	-1.9	-42	15.4	-53	25.6	-62	18.6	-75	20.5
Gross profit	38	41	6.7	44	9.5	58	30.6	63	8.4	71	13.4
Personnel expenses	-19	-20	4.0	-22	11.0	-27	24.0	-29	8.0	-34	15.0
Depreciation & amortisation	-4	-4	10.9	-4	-1.0	-6	50.0	-7	2.0	-7	1.0
Impairment	0	0	98.5	0	-93.7	0	5.0	0	5.0	0	5.0
Other operating expenses	-7	-9	14.6	-12	42.8	-15	20.0	-15	2.0	-16	10.0
Group EBIT	**8**	**8**	**1.9**	**6**	**-21.1**	**10**	**61.2**	**12**	**23.1**	**15**	**20.3**
Underlying net interest	-1.1	-1.5	38.3	-2.0	31.7	-2.2	10.5	-2.1	-3.1	-2.0	-4.8
PBT (EBT)	**6.7**	**6.4**	**-4.0**	**4.3**	**-33.4**	**7.9**	**84.4**	**10.3**	**30.3**	**12.9**	**25.5**
Tax	-2.1	-2.5	20.3	-1.5	-39.2	-2.6	72.6	-3.4	30.3	-4.3	25.3
Net profit	**4.6**	**3.9**	**-14.8**	**2.8**	**-29.7**	**5.3**	**90.9**	**6.9**	**30.2**	**8.7**	**25.5**
EPS (€)	**1.13**	**0.96**	**-14.8**	**0.67**	**-29.7**	**1.29**	**90.9**	**1.68**	**30.2**	**2.10**	**25.5**

Source: Edison Investment Research

Sensitivities to economy and corporate development

As a supplier into the automotive and related markets, paragon's development is linked to an extent to global economic growth and automotive market drivers. The group is also influenced by evolving corporate development, as it grows to address adjacent markets:

- Decoupling from direct end-market fortunes – while paragon will be affected by global economic growth and drivers in the automotive market, there are a number of factors that provide the group with above-market growth potential. These include c 80% exposure to the German premium manufacturers, as well as the increasing revenue per car being won in new systems, which provides a non-linear relationship to underlying automotive volumes.
- Automotive cost pressures – traditional automotive cost pressures and competition exist for the group. It mitigates this through a design for manufacture approach and a high degree of automation, as well as its positioning as a design leader.
- Expansion to new market segments – to provide a further balancing of the group's exposure to direct automotive factors, paragon has expanded its reach to adjacent market segments, where similar requirements for high-quality systems engineering exist, particularly in electromobility. The ability of the group to deliver suitable contracts and performance in these markets will influence EPS growth over the next three years. This expansion has been enhanced through paragon's relationship with strong partners in each target market, supported by good contract visibility and dedicated production facilities.
- Management and ownership concentration – given the high degree of management ownership and reliance on CEO Klaus Dieter Frers, the group is exposed to a high reliance on a small number of key personnel. This is mitigated from a management perspective by the three-man supervisory board, as well as the recent appointment of Dr Schwehr as CTO. This provides an improved governance structure as well as broadening the management bandwidth to pursue new markets and internationalisation of the group.

Valuation – rating does not reflect technology approach

We believe that paragon should be rated as a high-growth, technology-rich, automotive supplier. While there are a number of potential relative peers as shown in Exhibit 7 below, it appears that paragon is currently largely rated in line with larger automotive electronics and systems peers in the short term. However, as can be seen by the three-year forecast CAGR in both sales and EPS, there currently appears little premium attached to the significant growth potential from the group's strategy across all divisions, and the substantial growth potential, backed by orders already received, of the Electromobility division, which in our view, is set to become the largest single contributor by 2017.

Exhibit 7: Selected relative peer group ratings

	Price (local CCY)	Mkt cap (€m)	3-yr CAGR (2014-17e)		P/E		EV/Sales		EV/ EBITDA		EBITDA margin (%)		EV/EBIT		EBIT margin (%)	
			Sales	EPS	2015e	2016e	2015e	2016e	15e	16e	2015e	2016e	2015e	2016e	2015e	2016e
Electronics/interiors/cockpit																
Continental (Ger)	185	36,991	8.2	7.4	12.8	11.7	1.1	1.0	6.7	6.2	16.0	16.3	9.4	8.6	11.4	11.7
Denso (Jap)	5081	33,241	5.0	9.9	12.3	10.4	0.8	0.8	5.6	5.2	14.7	15.2	8.8	7.9	9.4	10.1
Johnson Controls (US)	39	22,660	-3.2	11.3	11.5	10.0	0.9	0.9	8.3	7.6	10.3	11.3	10.9	9.9	7.8	8.6
Delphi (US)	72	18,023	3.9	13.6	13.5	11.3	1.4	1.3	8.6	7.5	16.6	17.2	10.9	9.2	13.2	13.9
Magna (US)	47	17,128	0.3	12.3	10.1	8.5	0.6	0.5	5.9	5.2	10.1	10.5	7.9	6.9	7.6	7.9
Lear (US)	106	7,138	4.3	14.8	10.6	9.4	0.5	0.4	5.5	5.0	8.7	8.9	7.1	6.5	6.7	6.9
Hella (Ger)	36	4,042	6.2	9.8	11.5	10.3	0.7	0.6	4.9	4.5	13.8	13.4	8.7	7.8	7.7	7.7
Visteon (US)	99	3,523	-23.2	-4.5	49.4	33.2	1.3	1.3	16.4	14.5	7.7	8.8	25.7	21.5	4.9	6.0
Electronics/interior cockpit average*			**3.5**	**11.3**	**11.8**	**10.2**	**0.8**	**0.8**	**6.5**	**5.9**	**12.9**	**13.3**	**9.1**	**8.1**	**9.1**	**9.5**
paragon	**17.5**	**72.0**	**21.5**	**46.1**	**13.6**	**10.4**	**0.9**	**0.8**	**5.5**	**4.8**	**16.6**	**16.1**	**9.0**	**7.3**	**10.1**	**10.5**

Source: Bloomberg. Note:*Average excludes outlier Visteon. Prices as at 1 September 2015.

To gain a true appreciation of the intrinsic value within paragon, we feel that a DCF valuation provides a more complete view of both the growth and margin potential that exists. Exhibit 8 highlights our DCF fair-value assumptions, which yield a fair value of €30.1 using a terminal growth rate of 2%, WACC of 10% and a long-term margin of 10%.

Exhibit 8: DCF fair value assessment

Year ended 31 December (€m)	2015e	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e
Assumptions											
Sales	99	118	142	163	179	188	198	208	214	220	225
% change	N/A	18.6%	20.5%	15.0%	10.0%	5.0%	5.0%	5.0%	3.0%	3.0%	2.0%
EBIT	10	12	15	16	18	19	20	21	21	22	22
Margin	10.1%	10.5%	10.5%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
% change	n/a	23.1%	20.3%	9.3%	10.0%	5.0%	5.0%	5.0%	3.0%	3.0%	2.0%
Tax	(3)	(3)	(4)	(5)	(6)	(6)	(7)	(7)	(7)	(7)	(7)
% tax rate	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
NOPAT	7	9	11	11	12	13	13	14	14	15	15
% margin	7.5%	7.6%	7.5%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%	6.7%
% change	N/A	20.6%	18.5%	2.5%	10.0%	5.0%	5.0%	5.0%	3.0%	3.0%	2.0%
Depreciation & amortisation	6	7	7	7	8	8	8	9	9	9	10
Change in working capital	(2)	(4)	(5)	(5)	(5)	(5)	(5)	(4)	(4)	(4)	(4)
Capex	(10)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Free cash flow to firm	**2**	**9**	**9**	**10**	**12**	**13**	**13**	**16**	**16**	**17**	**18**
WACC	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Year	1	2	3	4	5	6	7	8	9	10	11
Discount factor	1.10	1.21	1.33	1.46	1.61	1.77	1.95	2.14	2.36	2.59	2.85
Present value free cash flow	**2**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**6**	**6**
Cumulative present value	2	9	16	22	30	37	44	51	58	65	71

Net present value – forecast FCF	71
Net present value – terminal year	80
Enterprise value	**151**
Net debt	(27)
Minorities	0
Value attributable to shareholders	**124**
Shares outstanding (m)	4.11
Value per share (€)	**30.13**

	WACC				
Terminal growth	**8.0%**	**9.0%**	**10.0%**	**11.0%**	**12.0%**
0.0%	36.6	30.8	26.2	22.5	19.4
1.0%	40.1	33.2	28.0	23.8	20.4
2.0%	44.6	36.3	**30.1**	25.4	21.6
3.0%	51.0	40.4	32.9	27.3	23.0
4.0%	60.6	46.2	36.6	29.9	24.8

Source: Edison Investment Research

A 2% reduction in our long-range revenue forecasts would reduce the DCF fair value by 12% to €26.5/share, while a 2% reduction in our margin assumption would result in a 19% decrease in fair value to €24.3/share.

With a strong backlog and order visibility, we believe that execution is now the major focus for the group. We believe that as paragon begins to demonstrate delivery against its 2015 target of up to €100m revenue and 10% EBIT, then investors should begin to look forward to the growth drivers in 2016 and 2017, as Electromobility begins to ramp up significantly, and bake these into forecasts, which we believe could act as a catalyst to a rerating of the stock.

Exhibit 9: Financial summary

€m	2011	2012	2013	2014	2015e	2016e	2017e
Year end 31 December	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS							
Revenue	67.1	70.4	73.9	79.0	99.3	117.7	141.8
Other operating income	1.9	2.0	1.1	1.4	2.0	2.1	2.2
Increase or decrease in inventory of finsihed goods / WIP	0.1	0.6	0.6	0.3	0.8	2.4	0.5
Other own work capitalised	1.3	2.0	1.7	5.2	7.0	5.0	2.0
Group operating performance	70.3	75.1	76.9	86.3	110.7	125.3	146.5
Cost of Sales	(33.7)	(37.0)	(36.3)	(41.8)	(52.6)	(62.3)	(75.1)
Gross Profit	36.7	38.1	40.6	44.5	46.7	55.4	66.7
EBITDA	12.9	11.7	12.2	10.5	16.5	18.9	21.5
Operating Profit (before amort. and except.)	8.8	7.8	7.9	6.2	10.1	12.4	14.9
Intangible Amortisation	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating Profit	8.8	7.8	7.9	6.2	10.1	12.4	14.9
Net Interest	(1.3)	(1.1)	(1.5)	(2.0)	(2.2)	(2.1)	(2.0)
Profit Before Tax (norm)	7.5	6.7	6.4	4.3	7.9	10.3	12.9
Profit Before Tax (FRS 3)	7.5	6.7	6.4	4.3	7.9	10.3	12.9
Tax	(2.2)	(2.1)	(2.5)	(1.5)	(2.6)	(3.4)	(4.3)
Profit After Tax (norm)	5.3	4.6	3.9	2.8	5.3	6.9	8.7
Profit After Tax (FRS 3)	5.3	4.6	3.9	2.8	5.3	6.9	8.7
Average Number of Shares Outstanding (m)	4.1	4.1	4.1	4.1	4.1	4.1	4.1
EPS - normalised (€)	1.30	1.13	0.96	0.67	1.29	1.68	2.10
EPS - normalised and fully diluted (€)	1.30	1.13	0.96	0.67	1.29	1.68	2.10
EPS - (IFRS) (€)	1.30	1.13	0.96	0.67	1.29	1.68	2.10
Dividend per share (€)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Margin (%)	54.7	54.1	55.0	56.3	47.1	47.1	47.1
EBITDA Margin (%)	19.2	16.6	16.6	13.3	16.6	16.1	15.2
Operating Margin (before GW and except.) (%)	13.2	11.0	10.7	7.9	10.1	10.5	10.5
BALANCE SHEET							
Fixed Assets	17.1	18.6	18.8	30.1	34.0	29.5	25.0
Intangible Assets	3.3	4.9	5.6	9.4	7.4	5.4	3.4
Tangible Assets	13.3	13.5	13.0	20.2	26.1	23.6	21.1
Investments	0.6	0.1	0.2	0.5	0.5	0.5	0.5
Current Assets	24.3	25.4	33.1	32.3	36.3	40.3	46.3
Stocks	6.9	7.3	7.5	6.9	12.9	14.9	17.9
Debtors	2.1	4.0	8.0	12.2	10.2	12.2	15.2
Cash	11.2	10.1	16.3	11.8	11.8	11.8	11.8
Other	4.1	4.0	1.3	1.5	1.5	1.5	1.5
Current Liabilities	(14.4)	(13.9)	(12.2)	(16.2)	(10.1)	(10.1)	(9.1)
Creditors	(11.7)	(11.5)	(9.3)	(10.7)	(4.6)	(4.6)	(3.6)
Short term borrowings	(2.7)	(2.4)	(2.9)	(5.5)	(5.5)	(5.5)	(5.5)
Long Term Liabilities	(17.2)	(17.1)	(33.6)	(41.9)	(49.8)	(46.4)	(42.4)
Long term borrowings	(12.5)	(12.3)	(20.2)	(24.7)	(33.7)	(31.3)	(28.3)
Other long term liabilities	(4.7)	(4.8)	(13.4)	(17.1)	(16.1)	(15.1)	(14.1)
Net Assets	9.8	13.0	6.2	4.3	10.4	13.3	19.8
CASH FLOW							
Operating Cash Flow	11.4	9.2	8.4	10.3	13.3	13.9	15.5
Net Interest	(1.2)	(1.0)	(1.4)	(1.9)	(2.4)	(2.1)	(2.0)
Tax	(1.6)	(2.4)	(1.9)	(1.4)	(2.6)	(3.4)	(4.3)
Capex	(2.0)	(2.7)	(2.3)	(10.5)	(10.0)	(5.0)	(3.1)
Acquisitions/disposals	(1.3)	(3.5)	(2.5)	(5.2)	(6.3)	0.0	0.0
Financing	0.0	0.0	0.0	0.0	0.0	0.0	(2.1)
Dividends	0.0	0.0	(1.4)	(1.0)	(1.0)	(1.0)	(1.0)
Net Cash Flow	5.3	(0.3)	(1.2)	(9.7)	(9.0)	2.4	3.0
Opening net debt/(cash)	13.6	4.0	4.6	6.7	18.4	27.4	25.0
HP finance leases initiated	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	4.4	(0.2)	(1.0)	(1.9)	0.0	0.0	(0.0)
Closing net debt/(cash)	4.0	4.6	6.7	18.4	27.4	25.0	22.0

Source: Company reports, Edison Investment Research

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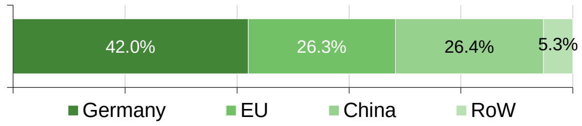

Management team

CEO and founder: Klaus Dieter Frers

Klaus Dieter Frers (62) got his degree in mechanical engineering at University of Stuttgart, Germany. He started his career at AEG-Telefunken and joined Nixdorf Computer in Paderborn, Germany in 1983, where he led electronics production. Five years later he founded his own business, paragon as a manufacturer of electronics. In the mid-90s he managed the access to the automotive market. Since November 2000, paragon has been a listed company at the Prime Standard of the German Stock Exchange in Frankfurt. Mr Frers also founded the German sports car company Artega.

Chief technology officer: Dr Stefan Schwehr

Dr Schwehr joined paragon in April 2014 from Daimler, where he gained some 20 years' of managerial experience, while working on the preliminary development and development of electronic components. In his last role, he was responsible for the preliminary development of vehicle instrumentation and control systems. He had previously headed up various departments, including instrumentation and mechatronics.

Chairman of supervisory board: Professor and doctor of engineering Lutz Eckstein

Following completion of his studies in mechanical engineering, including a doctoral degree from the University of Stuttgart, Professor Eckstein worked for ten years in research and development at Daimler, followed by five years in a management position at BMW Group in the electrical/electronic area. Since 2010, he has headed the Institute of Automotive Engineering at RWTH Aachen University, the key current research areas of which notably include electromobility, lightweight design and networking of driver-assistance systems with vehicle-control systems. Among his professional activities, Professor Eckstein is a member of the National Platform for Electromobility (NPE), a German federal government advisory committee, and is the inventor of more than 80 German and international patents.

Principal shareholders	(%)
Klaus Dieter Frers	51.8
Lupus Alpha Investment	0.7
Metzler Asset Management	0.7

Companies named in this report

VW Group, Daimler, BMW, Johnson Controls, Ford, General Motors, Vossloh, Contintental, Denso, Delphi, Magna International, Lear Corp, Hella, Visteon

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