

paragon

On track to meet FY17 guidance

Following recent corporate events, we believe the market is familiar with the paragon growth story. Based on 9M17 results, both paragon and its 60%-owned subsidiary Voltabox are on track to achieve management's FY17 guidance. Adjusting for Voltabox, paragon's implied FY17e EV/sales multiple of 0.93x for the electronics and mechanics segments is comparable to peers. Our revenue and earnings estimates are largely unchanged and broadly in line with consensus as we wait for more details on the potential entrance to the autonomous driving market. We have adjusted our DCF valuation from \$2.1/share to \$6.4/share mainly to reflect the recently completed IPO of Voltabox.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/16	102.8	5.8	0.84	0.25	81.6	0.4
12/17e	123.8	7.8	1.16	0.25	59.1	0.4
12/18e	155.7	13.1	1.95	0.25	35.1	0.4
12/19e	205.0	20.1	2.51	0.25	27.3	0.4

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

9M17 results: On track to meet FY17 guidance

paragon reported 9M17 revenues of €84.5m (up 15% y-o-y), EBIT of €6.1m (up 20% y-o-y) and EPS of €0.49 (up 139% y-o-y). Management reiterated its FY17 revenue guidance of €120-125m and EBIT margin of 9.0-9.5% (including an uplift from Voltabox's maiden EBIT profit). We assume that at the end of October 2017 Voltabox had net cash of €130m and paragon, on a standalone basis, had net debt of €37m, implying a consolidated net cash position of c €93m.

New growth engine: Autonomous driving

paragon is seeking to create a new growth engine in autonomous driving: biometric sensors to monitor drivers. In the medium term, paragon's aim is to play a pivotal role in the sensor fusion (ie combination of sensor data to empower better decisions) in order to generate revenue streams from sensor data. As the product roadmap is still under development, we await for more details from the company to update our estimates. We understand that management may update the market on its new development plans in early 2018.

Valuation: DCF revised to reflect increase in cash

Stripping out Voltabox's revenue, net cash position post IPO and 60% of its current market value, paragon's standalone FY17e EV/sales ratio of 0.93x based on the electronics and mechanics segments is in line with peers. EBIT metrics may not be comparable given that paragon capitalises approximately 85% of R&D. Using a WACC of 7% and a terminal growth rate of 2% in our model, we have adjusted our DCF valuation from €82.1 to €86.4/share mainly to reflect the net effect of an increase in net cash following the recently completed IPO of Voltabox.

Outlook and strategy

Automobiles & parts

24 November 2017

Price	€68.55
Market cap	€ 310m
Net debt (€m) at 30 September 2017	50.0

Shares in issue 4.53m
Free float 50%
Code PGN

Primary exchange Frankfurt (Xetra)
Secondary exchange N/A

Share price performance



Business description

paragon designs and manufactures automotive electronics and solutions, selling directly to OEMs. Products include sensors, acoustics, cockpits and body kinematics. Production facilities are in Germany, the US and China. Following the IPO in October 2017, paragon owns 60% of Voltabox.

Next events

Eigenkapitalforum	27-29 November 2017
FY17 results	28 March 2018

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Edison profile page

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Company description: Focus on the interior of vehicles

Founded in 1988 by CEO/chairman Mr Klaus Dieter Frers, paragon is a tier 1 auto parts and electronics supplier, with c 80% of revenues derived from its electronics products for the interior of vehicles. It currently consists of three divisions: Electronics (sensors, cockpits and acoustic), Voltabox (battery modules and management systems) and Mechanics (body kinematics). Audi, Volkswagen, Porsche, Daimler and BMW were the five largest customers in 2016, accounting for c 70% of paragon's firm-wide revenues. In terms of geographic breakdown, 70% revenues are from Germany, 25% from the rest of Europe and 5% from other geographies. In Q416, the Chinese manufacturers Changan, GAC-Group and Geely became new customers, primarily for air-quality sensors. paragon is currently developing driver monitoring biosensors and solutions, to provide the functionality required for the driver's safety and wellbeing in autonomous driving.

9M17 results: On track to meet FY17 guidance

Based on 9M17 results, both paragon and Voltabox are on track to achieve FY17 guidance. Revenues from sensors, cockpits and acoustics totalled €64.8m during the first three quarters of 2017, up 2% year-on-year. Top-line growth during the period was driven by Voltabox, with third-party revenue of €13.8m, up 100% year-on-year. Management reiterated its FY17e guidance of €120-125m in total revenue, including €25m from Voltabox. This implies a flattish trend year-on-year for paragon's electronics segment (sensors, cockpits and acoustics). The guided FY17e EBIT margin of 9.0-9.5% incorporates the expected positive EBIT contribution from Voltabox.

Exhibit 1: 9M17 vs 9M16 results				
€000 (except margin, EPS)	9M17	9M16	% y-o-y	Comment
Revenue	84,745	73,699	15%	Increase driven by Voltabox's 100% growth year-on-year
Operating performance (including WIP)	97,082	82,012	16%	
Gross profits	51,513	43,220	19%	Decrease in material cost ratio
Gross margin	53.1%	52.7%	N/A	
Personnel expenses	(25,765)	(21,573)	19%	
Depreciation & amortisation	(6,458)	(5,028)	28%	Due to increase in capex and capitalised development costs
Impairment	(5)	(37)	(86%)	
Other operating expenses	(13,155)	(11,484)	15%	
EBITDA	12,595	10,163	24%	
EBITDA margin	14.9%	13.8%	N/A	
Operating profits	6,132	5,098	20%	Voltabox's operating losses down 36% year-on-year
Operating margin	7.2%	6.9%	N/A	
Net financing expenses	(2,886)	(2,359)	22%	€50m bond issue in early July 2017
Profit before taxes	3,246	2,739	19%	
Income taxes	(1,105)	(1,923)	(43%)	Voltabox enjoyed €0.7m in tax benefits in 9M17
Net profits (loss)	2,143	815	163%	
EPS diluted (€)	0.47	0.2	139%	
Operating cash flows	(3,180)	8,443	N/A	Mainly due to an €8m increase in trade receivables
Investing cash flows	(12,856)	(16,450)	(22%)	Slight lower investment in property, plant and equipment
Financing cash flows	35,578	3,785	840%	€49m in net cash flow from bond issue
Source: Company data; Edison Investment	Research			

Voltabox: 60% owned by paragon

Management has reiterated its FY17 guidance for Voltabox's revenue to increase by 72% y-o-y to €25m and positive EBIT. During the first nine months of 2017, Voltaxbox posted third-party revenue of €13.8m, up 100% y-o-y. EBIT adjusted for foreign currency effects was -€0.2m (vs the previous year: -€3m). Voltabox manufactures battery modules (with cells sourced from leading suppliers



such as Toshiba, Samsung and CATL) and designs battery solutions and management systems for auto OEMs and industrial clients. Production facilities are located in Delbrück, Germany and near Austin, Texas (US).

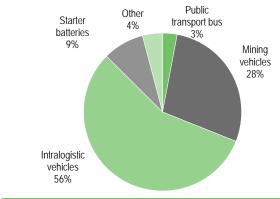
Voltabox consists of three business units:

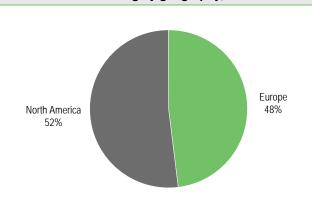
- Voltapower: battery solutions for large specialised vehicles in sectors such as public transport, mining and intralogistics. Customers include Triathlon Batterien, KUKA Roboter, Kiepe Electric, FORI AUTOMATION, and Komatsu Mining (formerly Joy Global). Currently, the vast majority of revenues are from this segment.
- Voltaforce: standardised low-voltage lithium-ion batteries for the mass market such as starter batteries for motorcycles. 48-volt batteries for mild hybrid passenger vehicles are under development. The shipment of starter batteries for BMW motorcycles began in Q317.
- Voltamotion: R&D centre in Aachen, Germany. The goal is to become a full-service provider for the electrification of vehicles. Power electronics products under development include inverters, chargers and DC/DC-converters. Revenue contribution is expected in H118.

The order backlog was approximately €805m as of 30 June 2017 for the period 1 July 2017 to 31 December 2022 (approximately 77% is attributable to two large customers). The order backlog is determined by signed orders and framework agreements (100% probability) and an additional order backlog weighted by a range of probabilities between 30% and 90%. On the basis of this backlog, Voltabox management aims to achieve revenues of c €100m in 2019. Voltabox's dividend policy is currently based on a pay-out ratio of 25%.



Exhibit 3: Order backlog by geography, H117





Source: Company data

Source: Company data

Valuation

We have revised our DCF-based valuation for paragon from €82.1/share to €86.4/share to reflect a net impact from an increase in consolidated net cash and minority following the Voltabox IPO. Our valuation is subject to revision once management provides more information regarding its product roadmap for autonomous driving and the investment plan required to achieve expansion into this new market. We understand that the company may update the market on new developments in early 2018.

We now include capitalised R&D in our DCF model as part of investments and slightly revise our capex assumptions for FY17 and FY18 to bring them in line with company's guidance (FY17 investments of c €21m with the portion of the originally planned spend postponed to FY18). We keep all our other assumptions (including those underpinning our terminal value) and estimates largely unchanged for now. Based on management guidance, we assume that Voltabox had net



cash of €130m and paragon, on a standalone basis, had net debt of €37m as at the 30 October 2017. This implies paragon's consolidated net cash position of €93m.

€m	FY17e	FY18e	FY19e	FY20e	FY21e	FY22e	FY23e	FY24e	FY25e	FY26e	FY276
Sales	124	156	205	246	283	297	312	321	331	337	344
change	N/A	25.8%	31.6%	20.0%	15.0%	5.0%	5.0%	3.0%	3.0%	2.0%	2.0%
EBIT	11	17	23	28	34	36	37	39	40	40	41
margin	9.1%	10.7%	11.3%	11.5%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
change	N/A	47.8%	38.9%	22.6%	20.0%	5.0%	5.0%	3.0%	3.0%	2.0%	2.0%
Tax	(4)	(5)	(8)	(9)	(11)	(12)	(12)	(13)	(13)	(13)	(14)
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	8	11	15	19	23	24	25	26	27	27	28
D&A	8	9	10	10	10	10	11	11	11	12	12
Change in working capital	(10)	(5)	(5)	(5)	(5)	(5)	(4)	(4)	(4)	(4)	(4)
Capex + capitalized R&D	(21)	(25)	(18)	(12)	(8)	(8)	(8)	(8)	(8)	(8)	(8)
Free Cash Flow to Firm	(15)	(10)	3	12	20	21	24	25	26	27	28
WACC	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Discount factor	1.00	1.07	1.14	1.23	1.31	1.40	1.50	1.61	1.72	1.84	1.97
PV of FCF	(15)	(9)	3	10	15	15	16	15	15	15	14
NPV - forecast FCF	93										
NPV - terminal value	267										
Enterprise value	360				WACC	5.0%	6.0%	7.0%	8.0%	9.0%	
Net cash	93			wth	0.0%	102.0	83.1	69.6	59.5	51.8	
Minorities	62			Gro	1.0%	119.8	93.8	76.6	64.3	55.2	
Equity value	391			<u>la</u>	2.0%	149.5	110.0	86.4	70.7	59.6	
Shares outstanding (m)	4.5			Terminal Growth	3.0%	208.8	137.0	101.1	79.7	65.4	
Value per share (€)	86.4			Te	4.0%	386.7	190.9	125.7	93.1	73.6	

We think it is a good exercise to value paragon based on its 60% stake in Voltabox, assuming that Voltabox is fairly valued by the market. Stripping out Voltabox's revenue, c €130m in net cash post its IPO and 60% of its market value attributable to paragon, paragon's electronics and mechanics segments look comparable with the tier 1 auto peers in terms of FY17 EV/sales, but undervalued on EV/EBIT and EV/EBITDA metrics (see Exhibit 5 and Exhibit 6). (We note paragon's relatively small size compared to the peer group.) However, EBIT/EBITDA metrics may not be comparable as paragon has been capitalising approximately 85% of its R&D spending (vs, for example, Valeo's 33% capitalised spending). paragon spent €12.8m and €15.2m on R&D in 2015 and 2016 respectively, equivalent to 12.8% and 15.2% of its revenues.

paragon's stake in Voltabox	60%
Voltabox market value	423
Voltabox's market value to paragon (1)	254
paragon's total market value (2)	310
Market value attributable to paragon's electronics and mechanics business (2)-(1)	56
Net debt to paragon (excluding Voltabox)	37
paragon's EV (excluding Voltabox)	93
paragon's FY17e EV/sales for the electronics and mechanics segment	0.9
paragon's FY17e EV/EBITDA for the electronics and mechanics segment	4.7
paragon's FY17e EV/EBIT for the electronics and mechanics segment	8.4



Exhibit 6: Peer group comparisons													
	Market	5-year (2013		P/ (x		EV/s (x		EV/EBI (x)	TDA	EV/E		EBIT margin	EBITDA margin
Company	cap	Sales	EPS	2017 e	2018 e	2017e	2018e	2017e	2018e	2017e	2018e	2017e	2017e
Continental	€42.771m	6.7%	7.9%	13.5	12.2	1.1	1.1	7.0	6.4	10.0	9.1	10.8%	15.6%
Denso	JPY5,120bn	3.6%	2.9%	16.5	15.6	0.9	0.9	7.6	7.2	12.0	11.5	7.8%	13.2%
Valeo	€14,257m	12.4%	18.8%	13.8	12.1	0.8	0.7	6.4	5.6	10.4	9.1	7.9%	12.8%
Hella	€5,550m	7.8%	13.8%	13.7	12.7	0.8	0.8	5.8	5.3	10.1	9.5	8.1%	14.1%
Visteon	\$4,044m	N/A	N/A	20.9	18.6	1.2	1.2	10.4	9.6	13.6	12.6	8.9%	11.6%
Average				15.9	14.2	1.0	1.0	7.4	6.8	11.2	10.4	8.7%	13.5%
paragon	€310m	16.1%	15.2%	59.1	35.1	2.9	2.3	18.7	14.0	32.1	21.7	9.1%	15.7%

Source: Edison Investment Research, Bloomberg data. Note: Priced at 23 November 2017. *Denso based on FY18/FY19e; Visteon carved out its Climate business in 2015.

Sensitivities

Given paragon's operating history, clientele, product portfolios and R&D activities, investors should take heed of the following risk factors:

- **Key person issues:** The company is 50% (plus one share) owned by its founder and CEO/chairman Mr Klaus Dieter Frers. There is no succession plan in place yet.
- Valuation of Voltabox: The market capitalisation of paragon is highly correlated to the valuation of Voltabox, which is 60%-owned by paragon.
- Threat from electric vehicles: The five largest customers in 2016 (Audi, Volkswagen, Porsche, Daimler and BMW) accounted for c 80% of paragon's consolidated sales excluding Voltabox. If German OEMs lag behind in the race to electrification and lose their collective global market shares and paragon has not significantly diversified its clientele, it will have adverse effects on paragon.
 - Voltabox currently does not have exposure to the BEV (battery electric vehicle) market. Power electronics products under development include inverters, chargers and DC/DC-converters and revenue contribution to Voltabox is expected in H118. The 48 volt batteries for mild hybrid passenger vehicles are still under development.
- Technology issues: While paragon has sufficient firepower to invest in the development of new products (eg biosensors for driver monitoring), there is no guarantee that the new portfolio of products/services will gain significant traction with OEM customers.



€m	2015	2016	2017e	2018e	2019e
/ear end 31 December	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS	05.0	400.0	400.0	455.7	
Revenue	95.0	102.8	123.8	155.7	205.0
Group operating performance Gross Profit	112.4 56.9	118.3 60.5	134.1 66.7	166.0 81.2	213.3 101.6
EBITDA	14.1	16.1	19.3	25.7	33.5
Operating Profit (before amort. and except.)	7.8	8.9	11.2	16.6	23.1
exceptionals	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0
Operating Profit (reported)	7.8	8.9	11.2	16.6	23.1
Net Interest	(2.8)	(3.2)	(3.4)	(3.5)	(3.0)
Profit Before Tax (norm)	5.0	5.8	7.8	13.1	20.1
Profit Before Tax (FRS 3)	5.0	5.8	7.8	13.1	20.1
Tax Profit After Tax (norm)	(1.6)	(2.2)	(2.6) 5.2	(4.3) 8.8	(6.6) 13.5
Profit After Tax (FRS 3)	3.4	3.6	5.2	8.8	13.5
let income to minority	0.0	0.0	0.0	0.0	(1.1
Average Number of Shares Outstanding (m)	4.1	4.2	4.5	4.5	4.5
EPS - normalised (c)	82.7	84.4	116.0	194.5	250.6
EPS - normalised (c)	82.7	84.4	116.0	194.5	250.6
EPS - (IFRS) (€)	0.83	0.84	1.16	1.95	2.51
Dividend per share (c)	25.0	25.0	25.0	25.0	25.0
Gross Margin (%)	59.8	58.9	53.8	52.1	49.0
EBITDA Margin (%)	14.8	15.6	15.6	16.5	16.3
Operating Margin (before GW and except.) (%)	8.2	8.7	9.1	10.7	11.3
BALANCE SHEET					
Non-current assets	59.7	75.8	88.8	104.7	112.3
ntangible Assets (including capitalized R&D and goodwill)	24.7	38.0	47.5	56.7	65.4
Plant, property and equipment	34.6	37.4	40.8	47.5	46.4
nvestments and other assets	0.4	0.4	0.4	0.4	0.4
Current Assets	32.9	39.7	213.8	212.7	226.6
nventory	11.2	13.7	18.7	24.7	31.7
Trade and other receivables	13.2	8.4	18.4	24.4	27.4
Other Cash	0.0 8.5	3.4 14.3	5.0 173.4	7.0 160.2	10.0 164.1
von-current liabilities	46.0	44.9	80.7	80.7	80.7
Financial leases	1.7	2.2	2.2	2.2	2.2
Non-current loans	23.8	20.4	20.4	20.4	20.4
Non-current bonds	13.0	13.2	49.0	49.0	49.0
Other non-current liabilities	7.5	9.1	9.1	9.1	9.1
Current liabilities	27.0	35.9	40.9	47.9	56.9
Financial leases	0.6	1.0	1.0	1.0	1.0
Bank loans	8.7	12.4	12.4	12.4	12.4
Frade payables	10.7	16.4	21.4	28.4	37.4
Other current liabilities Net assets	7.0 19.4	6.2 34.7	6.2 180.9	6.2 188.7	6.2 201.2
Minority	0.0	0.0	61.8	61.8	62.9
-	0.0	0.0	01.0	01.0	02.7
CASH FLOW	F 0	FO	7.0	10.1	20.1
Earnings before tax (EBT) Depreciation & amortization	5.0 (6.3)	5.8 (7.1)	7.8 (8.1)	(9.1)	20.1
Financial results	2.8	3.2	3.4	3.5	3.0
Change in receivables	(1.0)	4.8	(10.0)	(6.0)	(3.0
Change in payables	6.2	6.2	5.0	7.0	9.0
Change in inventory	(3.7)	(2.5)	(5.0)	(6.0)	(7.0
Other	9.9	6.5	10.1	10.4	11.3
Net cash flows from operating activities	12.9	16.8	3.3	12.9	23.0
nvestment in plant, property and equipment	(19.6)	(7.7)	(7.0)	(11.0)	(4.0
nvestment in tangible assets (including capitalized R&D)	(12.3)	(14.4)	(14.0)	(14.0)	(14.0
Company acquisitions	(1.2)	(1.2)			
Other Let cash flows from investing activities	(32.3)	0.1 (23.2)	(21.0)	(25.0)	(18.0
Dividends	(1.0)	(1.0)	(1.0)	(1.0)	(1.0
Proceeds from equity contributions	(1.0)	13.1	142.0	(1.0)	(1.0
oan repayments	(3.8)	(3.8)	2.0		
oan proceeds	19.5	4.8			
Dither State	0.0	(0.9)	35.8		
let cash flows from financing activities	14.7	12.2	176.8	(1.0)	(1.0
Opening cash position	13.3	8.5	14.3	173.4	160.2
Change in net cash	(4.8)	5.8	159.1	(13.1)	3.9
Ending cash position	8.5	14.3	173.4	160.2	164.1
Vet debt (cash) at the end of the period	39.4	34.9	(88.4)	(75.2)	(79.2



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