EDISON

Nano Dimension

FY17 results

First commercial sales refine proposition

Tech hardware & equipment

Nano Dimension commenced commercial roll-out during H217 and has sold eight commercial grade DragonFly Pro printers so far. While there is considerable interest in the technology for structural electronics applications in addition to PCB prototyping, customers remain cautious about committing to purchase. We therefore reduce our estimates again and cut our indicative valuation from US$6.39/ADS to US$4.16ADS.

Year end	Revenue (US$m)	EBITDA (US$m)	PBT* (US$m)	EPADS* (US$)	DPADS (US$)	P/E (x)
12/16	0.0	(6.5)	(6.8)	(0.83)	0.00	N/A
12/17	0.9	(14.1)	(16.4)	(1.45)	0.00	N/A
12/18e	6.0	(10.8)	(12.3)	(0.68)	0.00	N/A
12/19e	11.7	(7.4)	(9.1)	(0.47)	0.00	N/A

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

First commercial sales benefit Q417

Nano Dimension reported its first material revenues in FY17, benefitting from a hike in sales from $143k in Q317 to $440k in Q417 as the first three printers were delivered. During the first three quarters, revenues were derived solely from leasing printers to beta site customers and ink sales. Gross margin excluding amortisation of IP was 50.7%. Reported operating losses widened by $8.3m to $17.3m in FY17, reflecting higher levels of investment in R&D (+$2.0m), sales and marketing expenses (+$1.2m) and a change to fully expensing R&D in Q416 (+$4.7m). Net cash flow, excluding $13.1m cash raised during the year, totalled $20.1m, with management citing current cash burn at c $1.3m/month. Management raised $13.8m earlier in Q118 and has stated that it will need to raise further funds to get to sustainable cash break-even.

Push from structural electronics

As with any potentially disruptive technology, it is not possible to predict how customers will respond until commercial grade equipment is available. Initial customer successes indicate that the DragonFly is being used for structural electronics applications such as antennas and sensors which conventional PCB (printed circuit board) manufacturing equipment cannot tackle, as well as in-house prototyping of multi-layer PCBs.

Valuation: Significant upside on volume roll-out

We have revised our indicative DCF-based valuation to reflect the time taken to close orders and it now stands at US$4.16/ADS, NIS2.88/ordinary share (formerly US$6.39/ADS or NIS 4.49/ordinary share). We use a discount rate of 12% to reflect the current uncertainty regarding the rate of commercial ramp-up. Delivery of meaningful volumes of the DragonFly Pro in H218 would improve visibility and remove some uncertainty. Our revised estimates identify a c US$1.5m funding gap in FY19, with further finance required. We model this as satisfied through debt, although it could potentially be dilutive if financed through the issue of new shares.

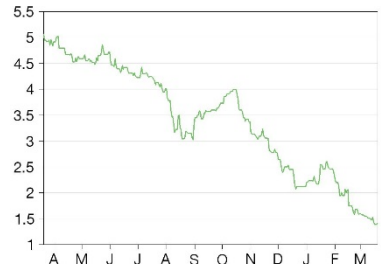
22 March 2018

Price*	**NIS1.42**
Market cap	**NIS143m**
	NIS3.46:US$1.00

*Priced at 19 March 2018

Net cash (US$m) at end December 2017 excluding public offer and exercise of over-allotment option of $13.8m	6.1
Shares in issue	96.5m
ADRs in issue	19.3m
Free float	88%
Code	NNDM
Primary exchange	TASE
Secondary exchange	NASDAQ

Share price performance



%	1m	3m	12m
Abs	(18.7))	(33.8)	(73.5)
Rel (local)	(17.2)	(34.4)	(75.1)
52-week high/low	NIS5.1		NIS1.4

Business description

Nano Dimension focuses on the development of advanced 3D printed electronic systems and advanced additive manufacturing. The company's initial products include a 3D printer for rapid prototyping of multi-layer PCBs and associated nanotechnology conductive and dielectric inks.

Next events

Q118 results	May 2018

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Financials

FY17 performance compared with estimates

FY17 revenues totalled $0.9m compared with our $1.2m estimate. $0.3m of the total was from printer sales, $0.2m from ink sales with the remainder from rental from printers leased to beta customers. We had modelled sales of eight commercial units, but only three units were delivered in FY17, one under a leasing agreement close to the period end, thus making minimal contribution to the total. Gross margin (50.7% excluding amortisation of IP) was in line with our estimate. Operating expenses totalling $17.0m were slightly lower than our $17.4m estimate because of lower share-based payments, but $0.9m finance expenses from the exchange rate difference resulted in adjusted losses before tax being $0.7m greater than our estimate at $16.4m.

FY17 cash flow and balance sheet

Excluding $13.1m cash raised during the year, cash consumption totalled $20.1m. Operating losses formed the majority of this. Other significant elements were a $2.3m increase in inventory as management built up raw materials and finished goods to fulfil anticipated demand for printers and ink. Management expects this to be worked through during FY18. Investment in plant and equipment totalled $3.6m as the company expanded its ink production capability. Cash at the end of FY17 was $6.1m. There is no debt, only a $0.8m long-term liability relating to grants from the Israeli Innovation Authority under which Nano Dimension will be liable to pay 3% royalties on sales up to the value of the grants received.

Changes to estimates

Exhibit 1: Revisions to estimates

	FY17			FY18e			FY19e
	Est	Actual	Diff.	Old	New	change	New
Printer deliveries	18*	13*	-27.8%	60	40	-33.3%	75
Revenues (US$m)	1.2	0.9	-28.8%	9.5	6.0	-36.8%	11.7
EBITDA (US$m)	(14.6)	(14.1)	-3.0%	(9.6)	(10.8)	12.1%	(7.4)
PBT (US$m)	(15.7)	(16.4)	4.2%	(11.0)	(12.3)	12.4%	(9.1)
EPADS (US$)	(1.41)	(1.45)	2.8%	(0.60)	(0.68)	12.2%	(0.47)
Net cash (US$m)	7.7	6.1	-20.9%	9.6	9.3	-3.2%	(1.2)

Source: Company accounts, Edison Investment Research. Note: *Including 10 beta phase units.

- As discussed in our August outlook note, now that Nano Dimension has a commercial-grade printer available and an effective distribution network in place, management is better able to judge how long it takes to complete sales. Since Nano Dimension is selling a completely new, high ticket value piece of equipment to large organisations, the sales cycle is prolonged and purchases have to fit within customers' budgetary calendars, meaning that some sales that were initially expected to land in FY17 have been pushed into customers' next financial year and slipped into FY18. The issue with lengthy cycles is compounded by a shift in customer interest from multi-layer PCB prototyping to structural electronics applications. We have reduced the rate of printer roll-out again to reflect a situation where customers are having to justify budget for a new technology which is being deployed for emerging applications, albeit applications where only this technology appears able to meet their requirements. We expect that FY18 revenues will be strongly weighted towards the second half.
- We model an average sales price per printer in FY18 after deductions to distributors of $180k/unit (previously $175k/unit).
- We model gross margin (excluding amortisation of IP) at similar levels to FY17, which is lower than our previous model because the percentage of revenues from ink sales is less.

- We maintain operating costs in FY18 at similar levels to FY17. We expect the increase in sales and marketing costs associated with initiatives discussed below to be balanced by a reduction in R&D costs as Nano Dimension shifted from development to a commercial phase of evolution.
- We assume that most of the inventory build-up at the end of FY17 will be worked through during FY18.
- We assume that capital expenditure will be lower in FY18 than in FY17, as there is already sufficient ink production capacity.

Refining the marketing proposition

Additive PCBs not a straight switch from conventional PCBs

As with any potentially disruptive technology, it is not possible to predict how customers will respond until commercial grade equipment is available. In our initiation note we commented that the DragonFly could be used for manufacturing low volumes of multi-layer PCBs, sensors and antennas. While we emphasised deployment for PCB prototyping, as this was a large and established market, we noted potential reservations regarding mass adoption since the materials used do not have identical mechanical, thermal or electrical performance to conventional PCBs. This means that users can develop multiple iterations of a prototype in-house using a DragonFly printer, but still have to switch to conventional PCB production for the final version of the prototype to check how the circuitry will perform following the switch to volume production. For companies designing a large number of prototypes each year, or those in the defence sector, where security of IP is of paramount importance, the ability to create the multiple variants of prototypes in-house, completing a single variant overnight and checking it the next day, outweighs the disadvantage of having to switch technology for the final version of the prototype. However, this need to switch for the final version of the prototype appears to be discouraging some less sophisticated users.

Helping customers make the transition

Nano Dimension is addressing potential concerns on how its materials perform this by providing samples of material for testing, offering an on-line print-on-demand service and opening customer experience centres in California and Israel. The print-on-demand service and customer experience centres enable potential customers to pay to have circuits they have designed manufactured using the DragonFly additive process. Customers can then compare these circuits with ones manufactured using conventional techniques. Nano Dimension intends to open additional customer experience centres during FY18. It is also building up its distribution networks, preferring to work with third parties who have the expertise necessary to operate a DragonFly printer so they can provide a complete advisory service to customers. For example, the most recent distributor to be signed up, EDA Technologies in South Africa, will purchase a DragonFly Pro for demonstration and customer training purposes.

Additive PCBs open up new applications

The more sophisticated users who have embraced the new technology are using it to make sensors, antennas and experimental structural electronics elements. These include one of the world's top ten PCB manufacturers, global manufacturing giant Jabil, Harris Corporation, which is using the technology to develop lightweight, high-reliability circuitry for space applications; a research institute in Hong Kong; and the University of Technology in Sydney, Australia. The creation of customer experience centres is helpful in encouraging potential customers to experiment using the technology for new applications. Nano Dimension has partnered with Dassault Systèmes to create an add-in for the popular SOLIDWORKS design software. This makes it easy to design

complex 3D geometric structures with embedded electronics, encapsulated sensors and antennas within the SOLIDWORKS suite and convert this information on how different layers of material combine to form a functional circuit into instructions for the DragonFly printer. In another initiative to expand the user-base, Nano Dimension has joined Techniplas' open innovation programme. Techniplas develops human-to-machine interfaces, predominantly for the automotive industry. The initiative creates a way of designing and manufacturing electronic conductive paths within the interior and facia surfaces of cars in a single step.

Structural electronics a significant opportunity

The potential for 3D printing as the structural electronics markets begins to unfold is significant. A report published by SmarTech in October 2016, "Opportunities for 3D Printing in the Electronics Industry", forecasts that the market would be worth $428m by 2022, rising to $2.8bn by 2025.

Valuation

Exhibit 2: Revenues from printer and ink sales

US$m unless stated	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e
Total units delivered	40	75	115	161	209	255	294	323	346	363
Price per unit (US$k)*	175	180	175	172	163	155	147	140	133	126
Revenues from equipment sales and leasing	5.8	10.9	21.6	28.1	34.2	37.5	41.0	42.9	43.6	43.5
Revenues from ink sales	0.3	0.9	3.4	5.8	8.8	12.4	16.4	20.6	24.8	28.9
Total revenues	6.0	11.7	25.0	32.0	41.2	50.0	57.4	63.4	68.3	72.4
EBITDA	(10.8)	(7.4)	(0.1)	2.2	6.2	10.1	13.2	15.4	17.3	19.5
EBITDA margin (%)	N/A	N/A	N/A	7%	15%	20%	23%	24%	25%	27%

Source: Edison Investment Research. Note: *After commissions to distributors.

We continue to present a DCF calculation for valuation purposes. This adopts the roll-out assumed in our estimates for the first two years, then ramps up revenues through to FY27 as shown in Exhibit 2. This sales progression is predicated on Nano Dimension making the step from initial commercial deliveries to meaningful volumes.

Exhibit 3: DCF valuation

		Base case					Base case		
US$/ADS		Discount rate			NIS/ordinary share		Discount rate		
		10.0%	12.0%	14.0%			10.0%	12.0%	14.0%
Term growth	0.0%	4.82	3.66	2.88	Term gowth	0.0%	3.33	2.53	1.99
	1.0%	5.21	3.89	3.02		1.0%	3.60	2.69	2.09
	2.0%	5.70	4.16	3.19		2.0%	3.95	2.88	2.20
	3.0%	6.34	4.50	3.38		3.0%	4.38	3.11	2.34
	4.0%	7.18	4.92	3.62		4.0%	4.97	3.40	2.50

Source: Edison Investment Research

As there remains significant execution risk with regard to the volume ramp-up, which will not be reduced until the first commercial deliveries commence at the end of this year, we keep our discount rate at 12% as well as holding the terminal growth rate at 2%. This gives an indicative share price at current levels of risk of NIS2.88/ordinary share or US$4.16/ADS (previously NIS4.49/ordinary share or US$6.39/ADS). The share price has declined by 9% since the Q417 results and is now NIS1.38/ordinary share (US$2.00/ADS), substantially below our indicative valuation. In our opinion, this reflects investor concerns on how long it will take to win meaningful sales volumes following on from eight received so far.

So far Nano Dimension has stuck broadly to the roll-out timetable detailed in our initiation note, which is very encouraging for an early stage technology company. Once investors gain confidence that Nano Dimension is able to secure meaningful levels of orders for the DragonFly Pro we would expect a lower-risk discount (say, 10%) to be more appropriate. However, while the current share

price appears to already factor in a somewhat slower roll-out, further delays in initial commercial sales present a risk to the share price and our valuation. We note also the potential share price dilution if the funding gap that we have identified is satisfied through the issue of new shares. This analysis excludes the earlier-stage development initiatives such as structural electronics and human tissue printing.

Exhibit 4: Financial summary

US$'000	2015	2016	2017	2018E	2019E
Year-end 31 December	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS					
Revenue	0	46	861	6,010	11,745
Cost of Sales (including amortisation of capitalised IP)	0	(193)	(1,196)	(3,547)	(5,843)
Gross Profit	0	(147)	(335)	2,463	5,903
EBITDA	(2,437)	(6,465)	(14,144)	(10,776)	(7,405)
Operating Profit (before amort. and except.)	(2,473)	(6,829)	(15,505)	(12,314)	(9,127)
Intangible Amortisation	0	0	0	0	0
Exceptionals	0	(149)	0	0	0
Other	(3,262)	(2,025)	(1,821)	(1,821)	(1,821)
Operating Profit	(5,735)	(9,003)	(17,326)	(14,135)	(10,948)
Net Interest	355	38	(847)	0	0
Profit Before Tax (norm)	(2,118)	(6,791)	(16,352)	(12,314)	(9,127)
Profit Before Tax (FRS 3)	(5,380)	(8,965)	(18,173)	(14,135)	(10,948)
Tax	0	0	0	0	0
Profit After Tax (norm)	(2,118)	(6,791)	(16,352)	(12,314)	(9,127)
Profit After Tax (FRS 3)	(5,380)	(8,965)	(18,173)	(14,135)	(10,948)
Average Number of Shares Outstanding (m)	5.4	8.2	11.3	18.2	19.3
EPADS -(normalised) (c)	(39.49)	(83.30)	(144.61)	(67.76)	(47.29)
EPADS - (IFRS) (c)	(1.00)	(1.10)	(1.61)	(0.78)	(0.57)
Dividend per share (c)	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	N/A	N/A	N/A	41.0	50.3
EBITDA Margin (%)	N/A	N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)	N/A	N/A	N/A	N/A	N/A
BALANCE SHEET					
Fixed Assets	4,151	8,903	12,273	12,035	12,463
Intangible Assets	2,910	6,787	6,755	5,983	5,211
Tangible Assets	1,131	2,006	5,172	5,706	6,906
Restricted deposits	110	110	346	346	346
Current Assets	9,057	13,323	9,223	11,997	6,942
Stocks	0	0	2,336	836	1,836
Debtors	264	814	677	1,727	4,727
Cash	8,665	12,379	6,103	9,327	272
Restricted deposits	128	130	107	107	107
Current Liabilities	(907)	(1,968)	(2,195)	(3,245)	(6,245)
Creditors	(907)	(1,968)	(2,195)	(3,245)	(6,245)
Short-term borrowings	0	0	0	0	0
Long-Term Liabilities	(254)	(956)	(1,135)	(1,135)	(2,635)
Long-term borrowings	0	0	0	0	(1,500)
Liability in respect of government grants	(254)	(956)	(1,135)	(1,135)	(1,135)
Net Assets	12,047	19,302	18,166	19,652	10,525
CASH FLOW					
Operating Cash Flow	(3,330)	(6,055)	(17,330)	(9,276)	(8,405)
Net Interest	0	141	922	0	0
Tax	0	0	0	0	0
Investment in intangible & tangible assets	(2,344)	(4,167)	(3,646)	(1,300)	(2,150)
Acquisitions/disposals	0	0	0	0	0
Financing	14,362	13,525	13,075	13,800	0
Dividends	0	0	0	0	0
Net Cash Flow	8,688	3,444	(6,979)	3,224	(10,555)
Opening net debt/(cash)	(207)	(8,665)	(12,379)	(6,103)	(9,327)
HP finance leases initiated	0	0	0	0	0
Other	(230)	270	703	0	0
Closing net debt/(cash)	(8,665)	(12,379)	(6,103)	(9,327)	1,228

Source: Company accounts, Edison Investment Research

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