EDISON

Nano Dimension

Q117 results

3D printer roll-out on track

Tech hardware & equipment

Q117 was another very successful quarter for Nano Dimension as it delivered its second batch of six DragonFly systems to potential customers for evaluation. The company appears on track to complete the beta testing phase in mid-2017 and to deliver 50 printers during FY17. We leave our estimates and valuation broadly unchanged.

Year end	Revenue (US$m)	EBITDA* (US$m)	PBT* (US$)	EPADS ($)	DPADS ($)	P/E (x)
12/15	0.0	(2.4)	(2.1)	(0.39)	0.0	N/A
12/16	0.0	(6.5)	(6.8)	(0.83)	0.0	N/A
12/17e	5.2	(7.7)	(8.8)	(0.85)	0.0	N/A
12/18e	35.7	12.2	11.0	0.87	0.0	7.3

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

Another milestone to commercialisation reached

Nano Dimension delivered its second batch of six DragonFly 2020 printers for evaluation during Q117, as per its stated target. Management notes that feedback so far has been generally positive. The company remains on track to deliver a total of around 50 printers during FY17, including around 35 in the commercial roll-out during H217, and to scale this up further during FY18. During the quarter Nano Dimension filed patents related to bio-printing, printing electrical circuits with embedded electrical components and printing rigid PCBs with flexible conductive connections, potentially extending the 3D print technology to other applications.

Revenues from beta test growing

Nano Dimension generated US$118k revenues during Q117 from leasing DragonFly printers to customers participating in the beta testing programme. Operating losses doubled year-on-year from US$1.6m to US$3.9m as no development costs were capitalised during Q117 compared to US$1.5m in Q116. Additionally, the number of employees, over half of whom are engaged in R&D, grew from 55 at end Q116 to 98 at end Q117. Cash fell by US$3.5m during the quarter to US$8.9m (there is no debt).The company recently raised c US$4m through a private placing at US$5.85/ADS.

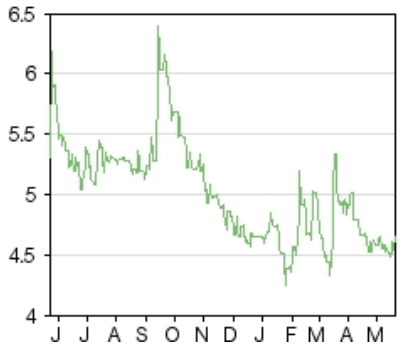
Valuation: Significant upside on volume roll-out

Delivery to our estimates and key milestones over the next year would justify significant share price appreciation, with our indicative valuation returning a fair value of US$12.47/ADS (previously US$12.97) or NIS8.99/ordinary share (previously NIS9.57/share). The changes reflect the impact of the May placing, a grant from the Israel Innovation Authority and FX moves. This indicative valuation excludes any additional potential contribution from early-stage development programmes such as bio-printing. Progress to commercialisation should serve to de-risk the strategy and act as a catalyst to share price appreciation.

1 June 2017

Price	**NIS4.54**
Market cap	**NIS226m**
Priced as at 19 May 2017	
	NIS3.60:US$
Net cash (US$m) at end March 2017 (prior to $4m May placing)	8.9
Shares in issue (after May placing)	53.2m
ADRs in issue (after May placing)	10.6m
Free float	71%
Code	NNDM
Primary exchange	TASE
Secondary exchange	NASDAQ

Share price performance



%	1m	3m	12m
Abs	(2.4)	(2.8)	(10.5)
Rel (local)	(5.2)	(1.8)	(14.7)
52-week high/low	NIS6.4	NIS4.3	

Business description

Nano Dimension focuses on the development of advanced 3D printed electronics 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

Q217 results	August 2017

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Edison profile page

PCB sector roll-out programme on track

Printer deliveries

Deliveries during Q117 were to a PCB design bureau, a medical device company in Tel Aviv, one of the 10 largest PCB manufacturers globally, a smart transportation company, an international company providing solutions to the defence industry and one of the top 10 contract manufacturers globally, which will deploy the DragonFly printer in its innovation centre. These customers will make payments to Nano Dimension on a leasing basis, as well as providing valuable feedback to direct further product development. The diversity of these customers highlights the attractiveness of in-house PCB manufacture to many companies. The DragonFly gives a compact, easy-to-use solution for creating complex multi-layer PCB prototypes very rapidly, eliminating the delay and potential breaches of IP security when prototypes are commissioned from a third party. This is very helpful for all electronic design departments seeking to speed up product development lifecycles. The security afforded by keeping design information in house is particularly attractive to defence companies.

Management has adopted a leasing model for the beta phase rather than a straight sales model. This means that revenues will not be recognised upfront, depressing the top-line P&L, but enables Nano Dimension to select beta site partners on the basis of their ability to provide useful feedback and, ultimately, to become long-term customers.

The feedback so far has been mainly positive. It has enabled Nano Dimension to refine the printer calibration and software, resulting in enhanced quality printing and improved reproducibility.

Management has confirmed that the roll-out programme is on track, with 50 printers scheduled for delivery during FY17. Having made a batch of six deliveries during Q117, management expects to deliver a slightly larger number, also to beta site customers, during Q217. Then around 35 printers will be delivered for the commercial roll-out during H217. The beta site printers will be manufactured in house and manufacturing will be outsourced to Flex (previously known as Flextronics) for the commercial volumes. Nano Dimension has recently completed the training required to enable Flex to take over manufacturing. Deliveries will be scaled up further during FY18.

Ink production facility

Nano Dimension is expanding the ink production facility so that it can provide the quantity needed once it enters the commercial phase and the volume of printers being sold ramps up. It has leased another floor in its existing facility in Ness Ziona near Tel Aviv to accommodate ink production. Management expects the new facility, which will cost an estimated $1.5m, to be opened ahead of volume shipments for the commercial roll-out in H217. We model most of the cost of this falling in FY17.

Simplifying the design process

In April Nano Dimension announced that it was working with Zuken, a leading supplier of software for designing PCBs, to make it easier and quicker to create multi-layer circuit boards. The aim of the collaboration is for designers using Zuken's native 3D, system-level design software to be able to convert information on the layout dimensions and internal structure of their circuits into instructions telling the DragonFly printer where exactly to deposit ink without any complex translation steps.

Strengthening routes to market

In May Nano Dimension announced that it is collaborating with Anglo Production Processes (APP) to develop the commercial and service infrastructure and capabilities needed to launch the DragonFly printer in the UK and Ireland. APP, based in Bromsgrove, England, is an established distributor of products and services to the UK electronics industry. Its client base includes many of the leading global electronic companies based in the UK and Ireland.

Technology progress

Although Nano Dimension is highly focused on completing the beta test phase for the PCB printer and software, it has made significant progress in developing 3D print systems for other sectors and the next-generation 3D print system for PCBs. Importantly, it is protecting this IP through patent applications.

Next-generation PCB printing

In January 2017 Nano Dimension announced that it had successfully 3D printed a series of multi-layered rigid PCBs, connected through printed flexible conductive connections. This process provides a solution to traditional production limitations in the electronics industry, enabling PCBs to be bent so that they fit inside curved and complex geometrical products. The company has filed a patent in the US for the flexible conductive and insulating inks that are used in this process, as well as for the printing process itself. Management believes that the company is the first in the world to successfully print multi-layered rigid circuits with flexible connections. The potential market for this solution includes aerospace, defence, wearable equipment and the Internet of Things (IoT).

Later in the same month, Nano Dimension announced that it had successfully 3D printed electrical circuits in which it had inserted embedded electrical components during the printing phase. This technique presents several advantages: it improves the PCB reliability by protecting components from the external environment, it eliminates the soldering process for attaching components to the board and improves connectivity to the components, which is a major source of device failure. The company has filed a patent application in the US to cover this development. Importantly, this represents a step towards printing complete electronic devices where the casing itself supports the electrical components and the connectors joining them, and the shape of the device is not constrained by the need to accommodate a rigid rectangular PCB.

In February 2017 Nano Dimension announced that it had received a budget from the Israel Innovation Authority to finance a project to develop 3D printing of advanced ceramic materials. This project is primarily intended to find a better way of manufacturing aerospace and automotive components. In addition, it potentially provides a route for replacing the insulating material in PCBs with ceramic, thus improving the substrate's mechanical and thermal characteristics. In May it received a grant approval from the Israel Innovation Authority to finance further development of the DragonFly. The total approved budget for this project is c $1.4m (NIS5.2m), of which the Israel Innovation Authority will finance 30%. The terms of the grant require Nano Dimension to pay royalties on future sales of any technology developed with these funds, up to the full grant amount.

New sectors

Management is in the process of forming a separate entity, which will be financed separately from the PCB programme, to commercialise the bio-printing opportunity. The new entity will focus initially on creating materials with similar functionality to kidney tissue. In April Nano Dimension filed a patent application with the US Patent and Trademark Office for the development of 3D inkjet printing of bioartificial, multi-layered complex structures composed of cells, extracellular matrices,

supportive components and stable and fugitive inks, with particular focus on nephron-like functioning structures that can filter blood. Management believes that the covered technology could lead to functioning multi-nephron, kidney-like structures for organ transplant, with clear industrial and medical applicability and significant commercial potential. In addition the technology has potential as an effective platform for drug development research and toxicology.

Financials

Rising revenues from beta leasing as printer numbers increase

Revenues during Q117 totalled US$118k. There were no revenues in Q116, as printer deliveries did not commence until Q416, when revenues totalled US$46k. Both the Q416 and Q117 revenues were derived from leasing DragonFly printers to customers participating in the beta testing programme. Operating losses doubled year-on-year from US$1.6m to US$3.9m. R&D expenses rose from US$0.4m year-on-year to US$2.5m as US$1.5m R&D expenses were capitalised in Q116 and none in Q117. In addition, the number of people engaged in R&D rose from 46 at the end of Q116 to 69 at the end of Q117. General and administrative expenses rose only slightly, from US$1.2m to US$1.3m.

Cash consumption during pre-commercialisation phase

Cash consumed during the quarter totalled $3.5m, including $1.1m on tangible assets, leaving $8.9m net cash at the end of March 2017. The company recently raised c US$4m through a private placing at US$5.85/ADS. We note that the new shareholder, Ayalim Trust Funds, an Israeli institutional investor, is locked for six months, was not issued with warrants as part of the deal and received a minimum discount to the market price, indicating appetite for the stock.

According to management, cash burn is currently around US$1m/month. Offsetting this against revenues from printer sales and leasing agreements and including $1.9m capex, most of which is allocated for the ink production facility, gives an estimated cash outflow during FY17 of US$9.4m, prior to the May placing, which leaves $7.0m of cash at the year-end, after including the placing funds. Our model shows Nano Dimension has sufficient cash to support it through the commercialisation phase of the 3D print system for PCBs, provided it achieves the roll-out rate and pricing assumed in our estimates (see our September note for details). However, it is possible that management may decide to secure further funding, such as that secured recently from Ayalim Trust Funds, so that it can address the commercial opportunities without being constrained by cash considerations.

Valuation

Our DCF analysis excludes any additional potential contribution from third-party ink sales or early-stage development programmes. Our indicative valuation gives a fair value of US$12.47/ADS (previously US$12.97) or NIS8.99/ordinary share (previously NIS9.57/share). The changes reflect the impact of the May placing, recent Israel Innovation Authority grant and FX moves. Further progress against major milestones, which in the short term are the onset of commercial deliveries and commissioning of the ink production facility, should act as a catalyst to elevate the share price beyond the current level towards our indicative value.

Exhibit 1: Edison DCF analysis

	US$/ADS	Discount rate			NIS/ordinary share	Discount rate		
		11.0%	13.0%	15.0%		11.0%	13.0%	15.0%
Terminal growth	0.0%	14.14	11.51	9.63	0.0%	10.18	8.29	6.94
	1.0%	14.87	11.95	9.91	1.0%	10.71	8.61	7.14
	2.0%	15.77	12.47	10.24	2.0%	11.36	8.99	7.37
	3.0%	16.89	13.10	10.61	3.0%	12.17	9.44	7.65
	4.0%	18.34	13.87	11.06	4.0%	13.21	9.99	7.97

Source: Edison Investment Research

Exhibit 2: Financial summary

US$'000	2015	2016	2017e	2018e
Year-end 31 December	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS				
Revenue	0	46	5,160	35,680
Cost of Sales (including amortisation of capitalised IP)	0	(193)	(2,461)	(12,535)
Gross Profit	0	(147)	2,699	23,145
EBITDA	(2,437)	(6,465)	(7,667)	12,159
Operating Profit (before amort. and except.)	(2,473)	(6,829)	(8,797)	11,016
Intangible Amortisation	0	0	0	0
Exceptionals	0	(149)	0	0
Other	(3,262)	(2,025)	(2,025)	(2,025)
Operating Profit	(5,735)	(9,003)	(10,822)	8,991
Net Interest	355	38	0	0
Profit Before Tax (norm)	(2,118)	(6,791)	(8,797)	11,016
Profit Before Tax (FRS 3)	(5,380)	(8,965)	(10,822)	8,991
Tax	0	0	0	0
Profit After Tax (norm)	(2,118)	(6,791)	(8,797)	9,253*
Profit After Tax (FRS 3)	(5,380)	(8,965)	(10,822)	8,991
Average Number of ADRs Outstanding (m)	5.4	8.2	10.3	10.6
EPADS - normalised ($)	(0.39)	(0.83)	(0.85)	0.87*
EPADS - normalised fully diluted ($)	(0.39)	(0.83)	(0.85)	0.65*
EPADS - (IFRS) ($)	(1.00)	(1.10)	(1.05)	0.84
DPADS ($)	0.0	0.0	0.0	0.0
Gross Margin (%)	N/A	N/A	52.3	64.9
EBITDA Margin (%)	N/A	N/A	N/A	34.1
Operating Margin (before GW and except.) (%)	N/A	N/A	N/A	30.9
BALANCE SHEET				
Fixed Assets	4,151	8,903	9,667	8,923
Intangible Assets	2,910	6,787	5,817	4,986
Tangible Assets	1,131	2,006	3,739	3,827
Restricted deposits	110	110	110	110
Current Assets	9,057	13,323	8,930	26,170
Stocks	0	0	250	1,250
Debtors	264	814	1,564	7,144
Cash	8,665	12,379	6,986	17,646
Restricted deposits	128	130	130	130
Current Liabilities	(907)	(1,968)	(2,718)	(8,298)
Creditors	(907)	(1,968)	(2,718)	(8,298)
Short-term borrowings	0	0	0	0
Long-Term Liabilities	(254)	(956)	(1, 376)	(688)
Long-term borrowings	0	0	0	0
Liability in respect of government grants	(254)	(956)	(1,376)	(688)
Net Assets	12,047	19,302	14,503	26,107
CASH FLOW				
Operating Cash Flow	(3,330)	(5,914)	(7,497)	11,059
Net Interest	0	0	0	0
Tax	0	0	0	0
Investment in intangible & tangible assets	(2,344)	(4,167)	(1,894)	(400)
Acquisitions/disposals	0	0	0	0
Financing	14,362	13,525	3,998	0
Dividends	0	0	0	0
Net Cash Flow	8,688	3,444	(5,393)	10,659
Opening net debt/(cash)	(207)	(8,665)	(12,379)	(6,986)
HP finance leases initiated	0	0	0	0
Other	(230)	270	0	0
Closing net debt/(cash)	(8,665)	(12,379)	(6,986)	(17,646)

Source: Company accounts, Edison Investment Research. Note: *Normalised for tax.

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