EDISON

Thin Film Electronics

R2R update/Q1 results

Getting the R2R ball rolling

Tech hardware & equipment

Thinfilm (THIN) has announced plans to commence R2R production by end-2017 and also plans to move to a larger plant in the US in 2017 to accommodate the line. We see the news as supportive of our NOK7.52 DCF valuation because of the prospects for greater efficiencies from the new plant. Nevertheless, we expect THIN to have to further de-bottleneck its existing sheet-based plant in 2016/17 in order to meet product demand, particularly for NFC OpenSense. In addition, property lease costs are expected to rise in 2017 with the opening of the new facility, leading us to increase our cash burn forecasts for 2016 and 2017 by $13m. Thinfilm's Q116 earnings reflected the hiatus in EAS unit production in the first quarter, but were otherwise in line with expectations.

Year end	Revenue ($m)	PBT* ($m)	EPS* (c)	DPS (c)	EV/sales (x)	EV/EBITDA (x)	Yield (%)
12/14	4.5	(24.2)	(4.9)	0.0	77.2	N/A	N/A
12/15	4.4	(28.3)	(5.3)	0.0	81.7	N/A	N/A
12/16e	12.0	(32.5)	(5.3)	0.0	30.5	N/A	N/A
12/17e	48.3	(28.7)	(4.3)	0.0	8.5	N/A	N/A
12/18e	196.2	14.6	2.2	0.0	2.0	19.1	N/A

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

First quarter above all about the future

Thinfilm's Q116 revenues halved to $811k from the Q415 level, due to lower Xerox tech transfer fees and a hiatus in sales of EAS tags as the company undertook a product modification at the client's request. EBITDA losses dropped from $8.8m in Q415 to $8.2m, being boosted in both quarters by high materials costs arising from running the plant 24/7 for yield, design and product development work. The long-term picture remains upbeat after a slew of new partnership and collaboration agreements and the securing of $42m in equity funding from Woodford IM in Q116. THIN delivered its first shipment of NFC OpenSense tags to Jones Packaging in Q116 and is also on track to increase plant capacity to 40m OpenSense equivalent (OSE) units in Q216 and launch sensor labels later in the year.

New facility planned to house new R2R line

Thinfilm has completed the initial planning and development stage for its new R2R line, which will be built on a new site with a significantly larger manufacturing clean room. R2R equipment purchases are now scheduled to commence in Q316, and THIN will move to a new production site in the US from early 2017. R2R production of memory products is scheduled to begin at the end of that year, with NFC OpenSense and Sensor products moving to the line in 2018.

Valuation: New R2R plans are neutral for valuation

We have increased our 2016 capex forecasts and reduced our 2017 earnings estimates to reflect the capex and opex impacts of the R2R plan. We believe that Thinfilm should be able to drive greater cost savings from the new plant and as a result have not revised our DCF valuation of NOK7.52 per share.

19 May 2016

Price	**NOK4.54**
Market cap	**NOK3,070m**
	NOK8.1554/US$
Net cash ($m) at end-Q116	49.1
Shares in issue	676.2m
Free float	84.0%
Code	THIN
Primary exchange	Oslo
Secondary exchange	OTCQX

Share price performance

%	1m	3m	12m
Abs	27.9	48.9	(32.7)
Rel (local)	25.6	40.5	(23.4)
52-week high/low		NOK6.7	NOK2.2

Business description

Thin Film Electronics (Thinfilm) commercialises printed electronics and owns key patents for printing rewritable, non-volatile memory and printable NFC circuits. It also licenses technology from others to develop complete printed systems.

Next events

Q216 results	12 August 2016
Q316 results	4 November 2016
Q416 results	24 February 2017

Analysts

Anna Bossong +44 (0)20 3077 5737

Katherine Thompson +44 (0)20 3077 5730

tmt@edisongroup.com

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Q1 results reflect temporary halt to EAS sales

Thinfilm reported Q116 revenues up 16% y-o-y to $811k, but approximately half of the Q415 total, which was boosted by Xerox revenue transfer fees of c $600k. Revenues in the quarter were also affected by the temporary cessation of sales of Electronic Article Surveillance (EAS) tags to enable Thinfilm to add a glue layer to the product at the request of client Nedap.

A continued high level of engineering runs of the production facilities in San Jose, with the plant continuing to run 24/7 in testing phase, led to another quarter of high premises and supplies costs of almost $2.5m (Q415: $2.7m). R&D costs in the quarter, focused on printed batteries, displays and R2R printing process, totalled $2.6m in Q1 vs $10.9m in 2015. Although normalised EBITDA losses were up 29% y-o-y to $8.2m, reductions in service costs helped THIN to reduce them from the Q415 level of $8.8m. Pre-tax losses were boosted to $9.9m by net financial costs of $967k, principally due to FX losses arising from the weak US$/NOK rate during the quarter.

Exhibit 1: Q116 results summary

US$000s	Q116	Q115	Change y-o-y (%)	Q415	2015
Sales revenue	150	253	(40.7)	989	2,214
Other operating revenue	557	380	46.6	485	1,791
Other income	104	65	60.0	125	408
Total revenue	811	698	16.2	1,599	4,413
Payroll	(4,648)	(4,224)	10.0	(4,591)	(16,663)
Share-based payments	(186)	(41)	353.7	(476)	(1,064)
Premises, supplies	(2,479)	(1,388)	78.6	(2,687)	(7,562)
Other operating costs	(1,916)	(1,489)	28.7	(3,105)	(9,375)
Total operating costs	(9,229)	(7,142)	29.2	(10,859)	(34,664)
EBITDA	(8,418)	(6,444)	30.6	(9,260)	(30,251)
EBITDA (normalised)	(8,232)	(6,403)	28.6	(8,784)	(29,187)
D&A	(552)	(344)	60.5	(458)	(1,537)
Reported operating profit	(8,970)	(6,788)	32.1	(9,718)	(31,788)
Net financial items	(967)	60	NA	368	2,406
PBT (IFRS 3)	(9,937)	(6,728)	47.7	(9,350)	(29,382)
Tax	(299)	0	NA	0	0
Profit for the period	(10,236)	(6,728)	52.1	(9,350)	(29,382)
Normalised profit for the period	(10,050)	(6,687)	50.3	(8,874)	(28,318)
Normalised loss per share	0.016	0.013	26.5	0.016	0.053

Source: Thin Film Electronics

Update on R2R capacity expansion plans

Thinfilm has revealed plans to lease new, larger premises from early 2017. It plans to launch R2R production at the new site by end-2017, with capacity of up to 1bn OSE units in 2018. The new site is expected to house a significantly larger manufacturing clean room as well as to accommodate both the existing sheet-based plant and the new R2R line. Initial production on the new R2R line will be limited to simpler non-transistor products, such as EAS labels, with production of tags containing transistors, such as NFC OpenSense and NFC SpeedTap, commencing in 2018.

THIN intends to continue its lease at the existing San Jose plant (using it for prototype development and small-volume production for field trials) for the first six months of 2017, running it in parallel with the new site in order to ensure production continuity and speed up new product development. The San Jose site is currently leased for c $1.1m pa, with a sub-lease generating revenues of $0.4m a year. The lease is set to expire in February 2017, but Thinfilm plans to extend it to the middle of the year to accommodate these plans. We understand that the lease for the new plant will cost more than the existing lease, but being considerably larger, it represents a saving based on a per metre comparison.

Forecast revisions

Our most recent forecasts assumed that THIN would start R2R production in mid-2017 to accommodate rising product demand and avoid extra de-bottlenecking work. De-bottlenecking work undertaken in recent months is on track to see the capacity of Thinfilm's sheet-based plant rise this quarter from 28m to 40m OpenSense equivalent units a year. Our forecasts of rapidly rising demand for NFC OpenSense products lead us to believe that THIN will be only slightly constrained by this level of capacity in 2016. We nevertheless forecast that this plant will become fully utilised over the next 12 months, with the group experiencing demand equal to 196m OSE units, ie well in excess of the currently planned 40m capacity, in 2017.

Subject to THIN being able to demonstrate the viability of the manufacturing processes of its recently developed products, we believe that new licensing deals could give the group the ability to satisfy this excess demand without further capacity expansion. Nevertheless, in view of the uncertainty surrounding this scenario, for the purposes of our model we have assumed that THIN will not sign any licensing deals to satisfy customer demand in 2017.

Management has previously indicated that it could undertake a further de-bottlenecking of the group's existing sheet-based plant to bring capacity to 120m units. At present, we understand that no decision has been made as to whether to proceed to this next stage, although management feels that it could be accomplished relatively rapidly if required. Based on the above assumptions concerning licensing arrangements, we have assumed there will be another round of de-bottlenecking of the sheet-based plant in late-2016. This has increased our capex forecast in 2016 from $9m to $16m ($8m capacity expansion and $8m down payment on the new R2R line), but also required us to reduce our forecast of 2017 production from 196m to 120m OSE units, reducing our 2017 revenues from $72m to $48m. For 2018, with the R2R line assumed to be fully up and running for all products from Q118, we have reduced our revenue forecast by only $0.5m to $196.2m (see Exhibit 2).

Exhibit 2: Change in earnings forecasts

US$000s	2015	2016e new	2016e old	Change (%)	2017e new	2017e old	Change (%)	2018e new	2018e old	Change (%)
Production NFC OpenSense (m units)	0.0	11.8	11.8	0.0	103.8	153.2	(32.3)	506.2	506.2	(0.0)
Production EAS labels (m units)	11.2	35.8	35.8	0.0	35.8	73.6	(51.4)	151.5	151.5	0.0
Production (OpenSense equivalent, m units)	3.2	24.0	24.0	0.1	120.0	196.0	(38.8)	644.6	644.6	0.0
Average unit price/OSE unit (c)	68.4	40.2	40.3	(0.3)	38.3	35.2	8.9	30.1	30.1	(0.0)
Sales revenue	2,214	9,652	9,665	(0.1)	45,978	68,964	(33.3)	194,116	194,114	0.0
Total revenue	4,413	12,031	12,182	(1.2)	48,268	71,503	(32.5)	196,184	196,674	(0.2)
Payroll	(16,663)	(16,052)	(16,052)	0.0	(17,474)	(17,474)	0.0	(21,030)	(22,234)	(5.4)
Share-based payments	(1,064)	(1,092)	(1,092)	0.0	(1,188)	(1,188)	0.0	(1,430)	(1,512)	(5.4)
Premises, supplies	(7,562)	(8,716)	(8,643)	0.8	(10,172)	(6,757)	50.5	(9,510)	(11,334)	(16.1)
Other operating costs	(9,375)	(17,888)	(17,881)	0.0	(44,859)	(62,532)	(28.3)	(144,608)	(143,319)	0.9
of which COGS (e)	N/A	(9,602)	(9,595)	0.1	(34,150)	(51,823)	(34.1)	(132,992)	(131,704)	1.0
Total operating costs	(34,664)	(43,730)	(43,668)	0.1	(73,693)	(87,951)	(16.2)	(176,577)	(178,398)	(1.0)
EBITDA, reported	(30,251)	(31,698)	(31,486)	0.7	(25,425)	(16,448)	54.6	19,606	18,276	7.3
D&A	(1,537)	(2,187)	(1,921)	13.8	(3,714)	(2,839)	30.8	(4,575)	(3,872)	18.2
Operating profit, reported	(31,788)	(33,885)	(33,407)	1.4	(29,139)	(19,286)	51.1	15,031	14,404	4.4
PBT, normalised	(28,318)	(32,465)	(31,986)	1.5	(28,746)	(18,893)	52.1	14,587	14,041	3.9
Reported profit (loss) per share (c)	(5.5)	(5.4)	(4.9)	11.3	(4.4)	(2.5)	75.5	1.9	1.6	23.6
Normalised profit (loss) per share (c)	(5.3)	(5.3)	(4.7)	12.5	(4.3)	(2.4)	79.1	2.2	1.8	22.3
Capex	(4,809)	(16,000)	(9,000)	77.8	(17,000)	(17,000)	0.0	(2,083)	(2,083)	0.0
Cash generation (burn)	(31,440)	(48,553)	(41,530)	16.9	(44,758)	(38,840)	15.2	10,631	13,156	(19.2)
Net cash	15,940	9,183	16,206	(43.3)	(35,575)	(22,634)	57.2	(24,945)	(9,478)	163.2

Source: Thin Film Electronics accounts, Edison Investment Research

We have increased our 2017 lease cost by $0.65m as lease and sub-lease revenues from the San Jose site ($1.102m and $421m in 2015) are assumed to cease from mid-2017 and lease costs at the new site are forecast to commence from the start of 2017 at an estimated $1.2m pa. With test plant at both sites running simultaneously, we have assumed higher outlays on materials for test runs, giving rise to a 50% increase in the premises and supplies line to $10.2m. This is offset by lower COGS (from reduced production), giving rise to 16% lower opex. Normalised loss before tax is forecast at $28.7m, vs our previous estimate of $18.9m.

We expect the move to the new plant to begin to pay off in our forecasts from 2018. While revenues will be slightly affected (c $0.4m pa) by the elimination of sub-lease revenues from the San Jose plant from mid-2017, cost savings from the new plant and the elimination of the additional lease expense should feed into higher margins. We expect normalised PBT to come in at $14.6m, vs a previous $14.0m.

Exhibit 3: Financial summary

US$000s	2014	2015	2016e	2017e	2018e
Year-end December	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS					
Revenue	4,479	4,413	12,031	48,268	196,184
EBITDA	(23,550)	(29,187)	(30,607)	(24,236)	21,036
Operating Profit (before amort. and except.)	(24,855)	(30,724)	(32,794)	(27,951)	16,461
Intangible Amortisation	0	0	0	0	0
Exceptionals	0	0	0	0	0
Share-based payments	(941)	(1,064)	(1,092)	(1,188)	(1,430)
Operating Profit	(25,796)	(31,788)	(33,885)	(29,139)	15,031
Net Interest	701	2,406	329	(795)	(1,874)
Profit Before Tax (norm)	(24,155)	(28,318)	(32,465)	(28,746)	14,587
Profit Before Tax (FRS 3)	(25,096)	(29,382)	(33,556)	(29,934)	13,157
Tax	0	0	0	0	0
Profit After Tax (norm)	(24,155)	(28,318)	(32,465)	(28,746)	14,587
Profit After Tax (FRS 3)	(25,096)	(29,382)	(33,556)	(29,934)	13,157
Average Number of Shares Outstanding (m)	493.5	535.4	615.8	676.2	676.2
EPS - normalised (c)	(4.9)	(5.3)	(5.3)	(4.3)	2.2
EPS - (IFRS) (c)	(5.1)	(5.5)	(5.4)	(4.4)	1.9
Dividend per share (c)	0.0	0.0	0.0	0.0	0.0
EBITDA Margin (%)	N/A	N/A	N/A	N/A	10.7
Operating Margin (before GW and except.) (%)	N/A	N/A	N/A	N/A	8.4
BALANCE SHEET					
Fixed Assets	7,189	10,390	24,320	37,606	35,114
Intangible Assets	2,319	2,602	2,720	2,720	2,720
Tangible Assets	4,870	7,788	21,601	34,887	32,395
Investments	0	0	0	0	0
Current Assets	33,870	19,425	16,418	18,856	33,969
Stocks	451	367	434	1,207	1,290
Debtors	2,565	3,118	6,801	13,224	37,624
Cash	30,854	15,940	9,183	4,425	(4,945)
Other	0	0	0	0	0
Current Liabilities	(4,748)	(5,170)	(6,522)	(50,991)	(49,026)
Creditors	(4,748)	(5,170)	(6,522)	(10,991)	(29,026)
Short term borrowings	0	0	0	(40,000)	(20,000)
Long Term Liabilities	0	0	0	0	0
Long term borrowings	0	0	0	0	0
Other long term liabilities	0	0	0	0	0
Net Assets	36,311	24,645	34,216	5,471	20,057
CASH FLOW					
Operating Cash Flow	(24,079)	(26,036)	(33,005)	(26,963)	14,588
Net Interest	569	146	570	(795)	(1,874)
Tax	0	0	0	0	0
Capex	(3,217)	(4,751)	(16,118)	(17,000)	(2,083)
Acquisitions/disposals	(2,700)	(799)	0	0	0
Financing	16,477	16,527	41,796	0	0
Dividends	0	0	0	0	0
Net Cash Flow	(12,949)	(14,914)	(6,757)	(44,758)	10,631
Opening net debt/(cash)	(43,803)	(30,854)	(15,940)	(9,183)	35,575
HP finance leases initiated	0	0	0	0	0
Other	0	0	0	0	0
Closing net debt/(cash)	(30,854)	(15,940)	(9,183)	35,575	24,945

Source: Thin Film Electronics accounts, Edison Investment Research

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Frankfurt +49 (0)69 78 8076 960
Schumannstrasse 34b
60325 Frankfurt
Germany

London +44 (0)20 3077 5700
280 High Holborn
London, WC1V 7EE
United Kingdom

New York +1 646 653 7026
245 Park Avenue, 39th Floor
10167, New York
US

Sydney +61 (0)2 9258 1161
Level 25, Aurora Place
88 Phillip St, Sydney
NSW 2000, Australia

Wellington +64 (0)48 948 555
Level 15, 171 Featherston St
Wellington 6011
New Zealand