

Pixium Vision

Back to basics as Second Sight deal is called off

Merger termination

Pixium announced on 3 April that it had been notified by Second Sight of its unilateral decision to terminate the January 2021 memorandum of understanding (MOU) relating to the proposed business combination of both entities. Although Pixium is seeking legal avenues to gain compensation from Second Sight in excess of the €1m termination fee that had already been offered, we are not entirely disappointed the business combination plan fell through, because Pixium's shareholders will now benefit from the full future economics of the Prima system. Pixium remains focused and committed to advancing Prima, which is continuing in a pivotal EU study (PRIMAvera), and the company is examining short- and longer-term financing options, including methods to access US markets.

Year end	Revenue (€m)	PBT* (€m)	EPS* (€)	DPS (€)	P/E (x)	Yield (%)
12/19	1.8	(9.8)	(0.44)	0.0	N/A	N/A
12/20	2.1	(8.7)	(0.26)	0.0	N/A	N/A
12/21e	1.6	(11.0)	(0.24)	0.0	N/A	N/A
12/22e	1.6	(15.4)	(0.32)	0.0	N/A	N/A

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

Pixium shareholders retain full ownership of Prima

Under the MOU, Pixium shareholders would have had their interest in Prima assets diluted by c 40% (pre-financing) in exchange for c 24% interest (pre-financing) in Second Sight's assets (Orion and Argus II), which we believe are of less risk-adjusted value than Prima. Essentially, the main benefit of the transaction to Pixium, in our view, was the expanded access to US investors offered by Second Sight's Nasdaq listing. We expect Pixium to accelerate its efforts to shore up short- and longer-term financing solutions and seek an alternate strategy to access US markets and investors, preferably with less dilution than the Second Sight deal would have entailed. Pixium plans to update shareholders on potential alternative financing solutions at its annual general meeting (planned for May 2021).

Prima vision benefits for at least 24–30 months

A recent paper showed the second-generation transparent augmented reality (AR) glasses in the Prima system enables Prima-implanted patients to integrate their natural peripheral vision (in both the implanted and fellow eye) with the 'prosthetic vision' supplied by the system. Further, visual acuity (VA) improvements from the Prima chip were maintained at 24–30 months follow-up post-implantation, suggesting continued safety and stability of the implant over this period.

Valuation: Rolling forward estimates

We have rolled forward our valuation by a quarter, which increases our rNPV to €142.8m (from €138.7m previously). After adding €2.1m in Q121e net cash, we obtain an equity valuation of €144.9m, or €3.07 per share, versus our prior values of €142.0m and €3.23, respectively. The per-share value has decreased due to increased shares outstanding. We estimate that Pixium's gross cash (€9.3m Q121e) should last into FY22. We assume Pixium will need to raise €33.7m (from €35m previously) in additional funds before year-end 2023, modelled as illustrative long-term debt, to complete the PRIMAvvera study and launch the product.

Healthcare equipment & services

7 April 2021

Price **€1.58**

Market cap **€75m**

\$1.18/€

Net cash (€m) at 31 December 2020 (excluding lease liabilities) 3.3

Shares in issue 47.3m

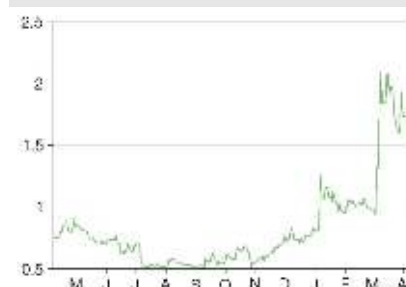
Free float 60%

Code ALPIX

Primary exchange Euronext Growth Paris

Secondary exchange N/A

Share price performance



% 1m 3m 12m

Abs 20.0 26.3 128.4

Rel (local) 13.4 16.5 61.4

52-week high/low €2.09 €0.5

Business description

Pixium Vision develops bionic vision systems for patients with severe vision loss. Its lead product, Prima, is a wireless sub-retinal implant system designed for dry-AMD. The company recently started a European pivotal study.

Next events

Annual general meeting May 2021

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Second sight deal falls through, but Prima still on track

Pixium [announced](#) on 3 April it had been notified by Second Sight of its unilateral decision to terminate the January 2021 MOU relating to the proposed business combination of both entities. According to Pixium, this notification came after Pixium had offered Second Sight an opportunity to renegotiate the MOU to preserve the possibility of a business combination following [Second Sight's \\$27.9m private placement](#) in March, which Pixium states was explicitly prohibited under the MOU and detrimental to the company's interests. Pixium indicates that Second Sight never responded to the proposals it made in good faith and the MOU did not allow Second Sight to unilaterally terminate the MOU. Pixium stated it will 'consider all measures available (including any legal proceedings, in particular with the relevant stock exchange authorities) to preserve its rights and obtain compensation for its entire damages.'

To this end, Second Sight [indicated on 5 April](#) it has offered Pixium \$1m liquidated damages contemplated by the MOU or a licence to certain Second Sight patents to settle matters between the parties. According to Second Sight, Pixium stated in writing that it considered this termination wrongful, rejected its offers and demanded €6m in damages, indicating it would pursue litigation. Second Sight indicates it plans to pay the \$1m termination fee as provided in the MOU, but it appears from this chain of events that Pixium will be seeking higher amounts.

Pixium shareholders retain full ownership of Prima assets

We will refrain from analysing the merits of the legal dispute between these parties and on speculating what may be the final net amount Pixium will receive from Second Sight. We are not entirely disappointed the business combination plan fell through and the termination of this arrangement may even turn out to be a positive outcome for Pixium's shareholders, as they will now fully benefit from the future economics of the Prima system. Under the MOU, Pixium shareholders would have had their interest in Prima assets diluted by c 40% (pre-financing) as contemplated by the MOU and in exchange would have received a c 24% interest (pre-financing) in Second Sight's assets (primarily those relating to the Orion Visual Cortical Prosthesis System, as well as Second Sight's de-prioritised Argus II) and indirect access to Second Sight's US exchange listing. The applicable details of the proposed combination were discussed [in our prior note](#). Altogether, the Prima system is much more clinically advanced than Orion (as Prima is in pivotal EU studies and has shown strong evidence of utility, as described below) and has a clearer development and commercial path (and less invasive implantation procedure, as in retinal surgery versus neurosurgery). The Argus II retinal implant had been de-prioritised (we believe largely due to limited commercial success) and the numerous advantages of Prima compared to Argus were discussed in our prior [outlook report](#). Effectively, the main benefit of the transaction to Pixium, in our view, was the expanded access to US investors (for subsequent financings) offered by Second Sight's Nasdaq listing.

With the Second Sight transaction now off the table, Pixium will need to accelerate its efforts to shore up short and longer-term financing solutions and seek an alternate strategy to access US markets and investors, and preferably with less dilution than the Second Sight deal would have entailed. We still see merit in the company's goal to seek closer ties to US markets, as that should facilitate longer-term funding needs. It plans to update shareholders on potential alternative financing solutions at its annual general meeting (planned for May 2021). In January 2021, Pixium raised another €1.25m tranche from its European Select Growth Opportunities Fund (ESGO) convertible debt financing facility and we estimate that its current funds on hand should last into FY22.

Integration of prosthetic and natural vision demonstrated

As [announced](#) on March 30, a [recent paper](#) covering updated data from the [European feasibility study \(PRIMA-FS\)](#) was released showing the second-generation and transparent AR glasses and improved analytics system (from the second-generation pocket computer) has fulfilled its promise of enabling Prima-implanted patients to integrate their natural peripheral vision with the ‘prosthetic vision’ supplied by the Prima Bionic Vision System (which comprises the 378-electrode photovoltaic chip implanted into the retina, along with externally worn AR glasses and the supplied pocket computer). As a reminder, in mid-2019, patients from the PRIMA-FS trial were transitioned towards use of the second-generation glasses and pocket computers instead of the initial-generation components. One of the key benefits of the second-generation AR glasses is that they are transparent and would allow patients to combine both prosthetic and natural residual (ie peripheral) vision, as the initial-generation glasses were opaque. On 31 March 2020, the company [reported 18-month data](#) on four of the five EU patients implanted in PRIMA-FS (one of the five patients implanted has passed away due to health reasons completely unrelated to Prima implantation or usage), showing several promising aspects from this transition. Use of the second-generation components has led to some measurable improvements in VA, in part due to some of the features of the external device components, which include improved magnification capabilities. The new paper reported that under room lighting conditions, these patients could simultaneously use prosthetic central vision and their remaining peripheral vision in the implanted eye and the fellow eye.

Further, VA improvements from the Prima chip were maintained at 24–30 months follow-up post-implantation, suggesting continued safety and stability of the implant over this period. Using electronic magnification, which allows up to 8x magnification/zoom, patients (n=4) gained VA in the range of 20/63 to 20/98 (reflecting 32% to 20%, respectively, of the normal 20/20 VA in healthy persons), which exceeds the threshold of legal blindness (20/200). The raw or unassisted (ie, without magnification) prosthetic VA among all the patients was very consistent (20/438 to 20/564), which is very close to the theoretical pixel size of the device. This suggests further improvements in pixel density (and raw resulting prosthetic VA) may be contemplated in subsequent higher-resolution iterations of the implant chip, but we believe Pixium’s focus remains on obtaining market approval for the current Prima system (based on the 378-electrode current implant) before considering studies on potential subsequent, higher-resolution implant devices.

Financials and valuation

We have made no significant local currency changes to our forecasts, but have rolled forward our valuation by a quarter, which increases our rNPV to €142.8m (from €138.7m, previously). We have also adjusted the net cash component of our valuation, to reflect our Q121 net cash estimate of €2.1m (versus €3.3m from Q420, previously).

Exhibit 1: Pixium Vision rNPV assumptions

Product contribution	Indication	Status	NPV (€m)	Probability of success	rNPV (€m)	rNPV/share (€)	Launch year	Peak sales (€m)
Prima (net of R&D and SG&A costs) in EU Market	Age-related macular degeneration with geographic atrophy	Pivotal study	676.6	25.00%	164.7	3.49	H223	515
Prima (net of R&D and SG&A costs) in US Market	Age-related macular degeneration with geographic atrophy	Human feasibility trials	424.5	20.00%	85.0	1.80	H225	531
Net capex, NWC & taxes (Global)			(424.9)		(106.9)	(2.26)		
Total			676.1		142.8	3.02		
Net cash (Q121e)			2.1		2.1	0.04		
Total equity value			678.2		144.9	3.07		
FD shares outstanding (000s) (31 March 2021)			47,266					

Source: Edison Investment Research

The company had a Q420 net cash position of €3.3m (€10.6m in gross cash and €7.2m gross debt), excluding €1.3m in lease liabilities. As stated above, since YE20, the company raised another €1.25m tranche from its ESGO financing facility and converted about €1.28m of its outstanding ESGO debt into equity. We forecast Pixium's Q121 cash burn rate was €2.5m and hence we estimate Q121e net cash of €2.1m (and Q121e gross cash of €9.3m).

After adding €2.1m in Q121e net cash, we obtain an equity valuation of €144.9m, or €3.07 per share, versus our prior values of €142.0m and €3.23, respectively. The per-share value has decreased due to increased shares outstanding.

As stated above, we estimate that Pixium's funds on hand should last into FY22. Our model assumes Pixium will need to raise €33.7m (from €35m, previously) in additional funds before year-end 2023, modelled as illustrative long-term debt, to complete the PRIMavera pivotal study, all EU-related regulatory and preparatory commercial activities and bring Prima to commercial launch. We expect part of this requirement will be fulfilled using the remaining (or unused) €5.0m in tranches from the ESGO funding facility.

Exhibit 2: Financial summary

	€000	2017	2018	2019	2020	2021e	2022e
31-December		IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS							
Revenue		2,535	1,598	1,782	2,092	1,600	1,600
Cost of Sales		(1,124)	(41)	0	0	0	0
General & Administrative		(5,324)	(2,019)	(3,572)	(4,017)	(3,303)	(4,185)
Research & Development		(7,817)	(5,297)	(6,563)	(5,711)	(8,000)	(10,400)
EBITDA		(11,731)	(5,758)	(8,352)	(7,636)	(9,703)	(12,985)
Depreciation		(936)	(677)	(448)	(366)	(409)	(497)
Amortization		0	0	0	0	0	0
Operating Profit (before exceptionals)		(12,666)	(6,435)	(8,801)	(8,003)	(10,112)	(13,483)
Exceptionals		0	(5,859)	(69)	(448)	0	0
Other		0	0	0	0	0	0
Operating Profit		(12,666)	(12,294)	(8,870)	(8,450)	(10,112)	(13,483)
Net Interest		(876)	(1,277)	(1,006)	(700)	(877)	(1,891)
Profit Before Tax (norm)		(13,542)	(7,712)	(9,806)	(8,703)	(10,989)	(15,374)
Profit Before Tax (FRS 3)		(13,542)	(13,571)	(9,876)	(9,150)	(10,989)	(15,374)
Tax		0	0	0	0	0	0
Profit After Tax and minority interests (norm)		(13,542)	(7,712)	(9,806)	(8,703)	(10,989)	(15,374)
Profit After Tax and minority interests (FRS 3)		(13,542)	(13,571)	(9,876)	(9,150)	(10,989)	(15,374)
Average Number of Shares Outstanding (m)		13.3	18.5	22.3	34.0	46.5	47.9
EPS - normalised (€)		(1.02)	(0.42)	(0.44)	(0.26)	(0.24)	(0.32)
EPS - normalised and fully diluted (€)		(1.02)	(0.42)	(0.44)	(0.26)	(0.24)	(0.32)
EPS - (IFRS) (€)		(1.02)	(0.73)	(0.44)	(0.27)	(0.24)	(0.32)
Dividend per share (€)		0.0	0.0	0.0	0.0	0.0	0.0
BALANCE SHEET							
Fixed Assets		9,649	3,666	4,507	3,411	3,226	2,772
Intangible Assets		7,680	2,623	2,361	1,727	1,727	1,727
Tangible Assets		1,970	1,042	2,145	1,684	1,499	1,046
Current Assets		14,241	17,756	9,107	12,721	13,625	11,658
Short-term investments		0	0	0	0	0	0
Cash		10,532	15,629	6,792	10,566	11,385	9,418
Other		3,710	2,126	2,316	2,155	2,240	2,240
Current Liabilities		(2,752)	(2,044)	(2,880)	(3,795)	(2,559)	(2,559)
Creditors		(2,752)	(2,044)	(2,880)	(3,260)	(2,023)	(2,023)
Short term borrowings		0	0	0	(536)	(536)	(536)
Long Term Liabilities		(9,302)	(8,023)	(7,033)	(7,851)	(19,071)	(31,571)
Long term borrowings		(9,130)	(7,870)	(5,787)	(6,695)	(17,915)	(30,415)
Other long term liabilities		(172)	(153)	(1,246)	(1,157)	(1,157)	(1,157)
Net Assets		11,836	11,355	3,700	4,485	(4,780)	(19,700)
CASH FLOW							
Operating Cash Flow		(10,605)	(6,174)	(7,282)	(6,206)	(10,580)	(12,532)
Net Interest		(876)	(1,277)	(1,006)	(700)	(877)	(1,891)
Tax		0	0	0	0	0	0
Capex		(191)	(31)	(34)	(82)	(224)	(44)
Acquisitions/disposals		0	0	0	0	0	0
Financing		519	14,068	2,034	9,055	1,280	0
Net Cash Flow		(11,153)	6,587	(6,288)	2,068	(10,401)	(14,467)
Opening net debt/(cash)		(12,911)	(1,401)	(7,760)	(1,004)	(3,336)	7,065
HP finance leases initiated		0	0	0	0	0	0
Other		(357)	(228)	(468)	264	0	0
Closing net debt/(cash)		(1,401)	(7,760)	(1,004)	(3,336)	7,065	21,532
Lease debt		N/A	N/A	1,346	1,258	1,258	1,258
Closing net debt/(cash) inclusive of IFRS16 lease debt		(1,401)	(7,760)	342	(2,078)	8,323	22,790

Source: Company accounts, Edison Investment Research

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