Foresight Autonomous Holdings

FY17 results

Time to shine

Software & comp services

Foresight (FRSX) is an innovator in automotive vision and cellular V2X accident prevention systems. In Q118, the group launched its QuadSight demo system at CES. It expects to have a prototype by mid-2018 and to launch live demonstrations, which should lead to pilot trials later this year. Also launched in Q118 and about to be spun into its own subsidiary, FRSX's mobile phone-based Eye-Net solution further extends the safety theme, with real-time collision alerts to pedestrians and drivers. Despite this progress, we are concerned that the recent fatalities caused by autonomous vehicles and greater government scrutiny of the tech sector could increase industry caution and set back industry timelines, leading us to push back our FRSX revenue forecasts. We nevertheless see the company as well positioned to benefit from greater industry focus on safety and its primary orientation to ADAS rather than fully autonomous vehicles. We also note its stake in Rail Vision with its highly prospective rail ADAS products. Our DCF valuation remains at NIS4.99 per share.

Year end	Revenue ($m)	EBITDA* ($m)	PBT* ($m)	EPS* ($)	DPS ($)	EV/revenue (x)	P/E (x)
12/16	0.0	(3.3)	(3.4)	(0.05)	0.00	N/A	N/A
12/17	0.0	(6.4)	(5.3)	(0.06)	0.00	N/A	N/A
12/18e	0.0	(10.9)	(13.3)	(0.12)	0.00	N/A	N/A
12/19e	2.6	(13.1)	(11.6)	(0.11)	0.00	23.3	N/A

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

A busy 2017: Market looking for results in 2018

FRSX was extremely busy in 2017, with three pilot trials of automotive vision systems in China and one in Sweden, and ongoing testing of its cellular-based accident alert system, Eye-Net. The group was able to raise $23m from share issues and warrant conversions in FY17, and limit operating and investing capital outflows to $6.3m (2016: $2.5m), helped by strict cost discipline.

Eye-Net spin-off provides funding route for product

Last month, FRSX successfully completed multi-user trials of Eye-Net, its mobile-phone-based V2X accident prevention solution. It also signed an MOU to spin off this IP into a shell company, Tamda. FRSX will have a 74.5% stake in the company, which will have a minimum NIS2m (US$568k) in cash reserves for product development work. Based on the cash balance alone, the deal values the technology at NIS5.8m (US$1.6m). FRSX intends to list the company, providing a route to further equity funding for Eye-Net without tapping FRSX investors.

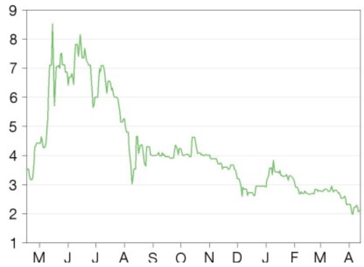
Valuation: DCF steady at NIS4.99

FRSX's TASE-listed shares have fallen 29% since the reporting of the Uber autonomous driving death on 18 March. Our expectation of increased industry caution in the auto industry and resulting delays in implementation of new technology has led us to cut our revenue forecasts and increase our loss estimates. Our DCF value has nevertheless remained steady at NIS4.99 per share, due to the countering positive impact of rolling our model forward.

17 April 2018

Price per share*	**NIS2.09**
Price per ADR*	**US$3.01**
Market cap	**NIS230m**
Market cap ADR	**US$67m**
*Priced at 14 April 2018	NIS3.52/US$
Net cash ($m) at 31 December 2017	21.8
Shares in issue	110.0m
Free float	67.3%
Code	FRSX
Primary exchange	TASE
Secondary exchange	NASDAQ

Share price performance



%	1m	3m	12m
Abs	(29.3)	(39.2)	(39.7)
Rel (local)	(27.9)	(36.1)	(43.7)
52-week high/low		NIS8.5	NIS2.0

Business description

Foresight Autonomous Holdings is a technology company in Israel engaged in the design, development and commercialisation of stereo/quad-camera automotive vision systems and V2X cellular-based solutions. It has a 32.6% stake in rail ADAS specialist Rail Vision.

Next events

Q118 results	May 2018

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Edison profile page

Eye-Net spin-off provides funding route for solution

In March, FRSX announced that it had signed an MOU to spin off Eye-Net's IP into the TASE-listed shell-company, Tamda. This follows FRSX's reports of the successful completion of multi-user, in-house trials of Eye-Net, its mobile-device-based V2X accident prevention solution, and of its plans to complete the alpha version of the product by the end of Q118 (see Eye-Net to start trials – alpha version due end Q1, published on 15 February 2018).

In return for transferring its Eye-Net IP into Tamda, FRSX will be given a 74.5% stake in the company, which is to have a minimum NIS2m (US$568k) in cash reserves from the current shareholders. Based on the cash balance before relisting costs (estimated by FRSX at NIS0.4m before VAT), the deal values the technology at NIS5.8m (US$1.7m). This excludes any implicit value from the shell company, which management estimates at c NIS2m, based on recent examples in the TASE market of User Trend (June 2017: implied value NIS1.8m), Direct Capital (March 2018: net of cash implied value NIS2m) and Medivie (November 2017, implied value NIS1.5m). Taking the shell company value into account gives rise to an implied IP value of NIS11.7m (US$3.3m).

As mentioned above, management anticipates that the company will need to lay out c NIS0.4m plus VAT in transaction costs to move the vehicle on to the Main List of the Tel Aviv Stock Exchange. Nevertheless, the spin-off and listing will give cash for immediate development and marketing work without needing further recourse to FRSX shareholders. Once listed, Tamda also has the potential to provide a route to further external funding from equity markets. We understand from management that Tamda's existing shareholders comprise principally financial investors.

Results summary FY17: Cash discipline remains

Exhibit 1: Earnings summary

$m, US GAAP	2016	Q417	2017	2018e	2019e
Revenues	**0.0**	**0.0**	**0.0**	**0.0**	**2.6**
Gross profit	0.0	0.0	0.0	(1.3)	(0.3)
R&D costs	(0.9)	(1.7)	(4.1)	(6.2)	(7.6)
Marketing and sales	(0.2)	(0.2)	(1.0)	(1.8)	(3.4)
General and admin/other	(2.6)	(0.7)	(3.8)	(4.3)	(4.5)
Total opex (incl. D&A)	**(3.8)**	**(2.6)**	**(8.9)**	**(12.4)**	**(15.5)**
EBITDA reported	(3.8)	(2.6)	(8.9)	(13.6)	(15.8)
of which exceptionals (incl. SBP)	(0.4)	(0.4)	(2.5)	(2.7)	(2.7)
of which share-based payments	(0.4)	(0.4)	(2.5)	(2.7)	(2.7)
EBITDA normalised	**(3.3)**	**(2.2)**	**(6.4)**	**(10.9)**	**(13.1)**
EBITDA margin (%)	N/A	N/A	N/A	N/A	(5.0)
Operating profit normalised	(3.3)	(2.2)	(6.4)	(10.9)	(13.1)
Operating profit reported	(3.8)	(2.6)	(8.9)	(13.6)	(15.8)
Equity accounted profit	(0.1)	0.9	0.2	(2.4)	1.5
Financials	**0.1**	**0.4**	**1.0**	**0.1**	**(0.0)**
PBT normalised	**(3.4)**	**(1.0)**	**(5.3)**	**(13.3)**	**(11.6)**
PBT reported	(1.9)	6.5	(15.9)	(16.0)	(14.3)
Net income normalised	**(3.4)**	**(1.0)**	**(5.3)**	**(13.3)**	**(11.6)**
Net income reported	(1.9)	6.5	(15.9)	(16.0)	(14.3)
EPS normalised basic ($)	(0.05)	(0.01)	(0.06)	(0.12)	(0.11)
EPS normalised diluted ($)	(0.05)	(0.01)	(0.06)	(0.12)	(0.11)
EPS reported basic ($)	(0.03)	0.07	(0.17)	(0.15)	(0.13)
Dividend per share ($)	0.0	0.0	0.0	0.0	0.0
Net debt/(cash)	**(3.8)**	**(21.8)**	**(21.8)**	**(8.3)**	**5.6**

Source: Foresight Autonomous, Edison Investment Research

Full-year losses increased by R&D surge in Q4

In Q417, R&D spend was boosted to US$1.7m from a quarterly average of US$0.8m in 9M17, mainly due to an acceleration in company recruitment but also including costs incurred in developing the Eye-Net accident prevention solution and pilot trials of the Eyes-On vision systems in China. This higher-than-expected surge in costs led to a reported operating loss for the year of US$8.9m, compared with our forecast of US$8.3m. With share-based payments in line with our forecast at US$2.5m, the normalised operating loss was also US$0.6m higher than we forecast at US$6.4m.

Use of share-based payments minimised 2017 cash outlay

The results metrics we regard as the most important for FRSX at this pre-revenue stage are the group's ongoing rate of cash burn and the ability of the balance sheet to sustain the business going forward.

From this perspective, as well as a number of others – most notably product development, and testing and attracting pilot trials – 2017 can be called a success. The sharp increase in spending on R&D from US$0.9m to US$4.1m enabled FRSX to finalise testing and move to pilot trials of its Eyes-on stereo and quad vision algorithms, and to complete development and commence in-house testing of its Eye-Net solution. This additional cost was the principal reason for the increase in operating losses from US$3.8m to US$8.9m. Of this spend, though, it is worth noting that US$2.5m was accounted for by share-based compensation (2016: US$0.4m), which kept operating cash outflows at a relatively low US$6.4m.

In total, the company granted 9.1m options to directors and employees during 2017, bringing the number outstanding to directors and employees to 10.5m, equivalent to 9.6% of total outstanding shares. The options issued during 2017 had an average exercise price of US$0.84, or NIS2.97 (a 49% premium to the current share price) at the current exchange rate, bringing the average exercise price for director/employee warrants at year-end to US$0.69 or NIS2.44.

During the year, helped by a strong share price, the balance sheet was fortified by a net inflow of US$10.7m from share and warrant issues and US$12.0m from the exercise of warrants. This enabled the group to cover operating and investment cash outflows and increase its cash balances from US$3.7m to US$21.8m, while remaining debt-free.

Looking solely at the fourth quarter, the US$2.0m in cash inflows from warrant conversions, US$0.2m in cash inflows from working capital and exchange rate differences of US$0.9m enabled the group to fund normalised opex of US$2.2m and increase cash balances by US$0.3m during the quarter.

So far this year the group has continued with the onward move towards commercialisation of two more products. In Q118 the group launched its QuadSight demo system at CES. It now expects to have a proof of concept by mid-2018 and to launch live demonstrations, which should lead to pilot trials later this year. The group also launched its mobile phone-based Eye-Net solution in Q118, which further extends the safety theme, with real-time collision alerts to pedestrians and drivers. In this case, plans to have it spun into its own 74.5%-owned subsidiary means that commercialisation of this product gives rise to the potential for it to be carried out with no further funding pressure on FRSX's balance sheet.

At existing funding levels, our model indicates that the group should be able to fund itself through to end-2019 with only US$6.6m, which we show as debt finance for illustrative purposes. In our view, this funding is highly likely to be derived from warrant conversions, assuming a modest recovery in the share price during this period.

Forecast revision

Exhibit 2: Change in forecasts

	Revenue ($m)			EBITDA* ($m)			PBT* ($m)		
	Old	New	% chg.	Old	New	% chg.	Old	New	% chg.
12/17	0.0	0.0	N/A)	(5.8)	(6.4)	10.2	(5.7)	(5.3)	(7.2)
12/18e	1.15	0.00	(100.0)	(11.5)	(10.9)	(5.4)	(12.6)	(13.3)	4.9
12/19e	14.6	2.6	(82.1)	(8.6)	(13.1)	52.4	(7.2)	(11.6)	61.4

Source: Foresight Autonomous Holdings, Edison Investment Research. Note: *Normalised. 2017: old – Edison estimates; new – company reported

Revenue forecasts set back 12 months

We have cut our forecasts for FRSX to reflect recent unexpected setbacks in the ADAS sector, particularly recent fully autonomous vehicle fatalities, but also the increased scrutiny of tech firms by regulators, which we expect to intensify. In our view, both have the potential to force the auto industry and potentially consumers into a more cautious stance, particularly regarding newly developed technology, and to therefore set back key implementation timelines. Fortunately, ADAS technology (for driver assistance), which we see as the main provider of revenues for FRSX for at least the next three years, has experienced much less adverse publicity than fully autonomous vehicle technology. In addition, testing by road-safety bodies consistently demonstrates the safety value of these systems (we discussed this topic in more depth on page three of our report, Nasdaq listing ushers in new era, published on 29 June 2017).

We have nevertheless set back our revenue forecasts by approximately 12 months and now assume that FRSX will generate its first revenues from sales of its aftermarket camera systems to Israeli car importers in 2019 rather than 2018. We forecast US$2.5m in revenues from this product line in 2019 (previously US$11.1m). This is based on the assumption previously employed in our 2018 forecast that it experiences sufficient demand to install its stereo camera units in 3% of vehicles imported by the car dealerships in Israel, which are shareholders in FRSX and which have agreed to market the product. Total revenues are forecast at US$2.6m, including US$0.2m of stereo camera algorithm systems-on-a-chip (SOC) for use in new cars.

In 2020, we now forecast a total of US$14.6m revenues, with sales of aftermarket camera systems rising to US$11.1m revenues, based on the assumption that FRSX experiences sufficient demand to install its aftermarket devices in 10% of cars imported by FRSX's Israeli car-importer shareholders. We are also looking for sales of the aftermarket product to penetrate US and Chinese markets. As a result, our model now assumes that the group attains a 0.3% overall global market share based on assumed installation of forward camera systems in 40% of new cars, leading to stereo camera algorithm SOC revenues of US$3.5m, from sales of 54k units.

Increased share-based payment expense to put pressure on reported losses

We have further increased our 2018 and 2019 adjusted loss forecasts (see Exhibit 1) to reflect our assumption that FRSX will also recognise higher than previously forecast share-based payments, totalling c US$2.7m per annum over the next two years.

The major driver of this is expected to be the US$3.65m in unrecognised compensation costs relating to non-vested, share-based compensation from previous share-based payment awards, which is noted in the 2017 20F annual report. Management has reported that it expects this to translate into share-based payment expense in the accounts over a weighted average period of 2.08 years from end-2017 based on the share price at the time. We assume that the group will continue to make share-based awards to new employees, as it continues to build employee numbers, to add to the total expense. Our model also assumes that the share price will recover back to the NIS2.77 level of end-2017, which will keep the recorded expense of share-based payments at the level anticipated in the accounts, rather than the lower levels implied by the current share price.

DCF valuation

Exhibit 3: Foresight Autonomous DCF valuation

$m	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2026e norm
Revenue	**0.0**	**2.6**	**14.6**	**32.8**	**78.5**	**121.1**	**167.5**	**221.9**	**292.8**	**292.8**
change y-o-y	N/A	N/A	458.4%	124.2%	139.4%	54.3%	38.3%	32.5%	32.0%	0.0%
EBITDA reported	(13.6)	(15.8)	(12.8)	(12.3)	6.1	34.0	47.2	62.7	82.9	79.1
EBITDA margin	N/A	N/A	N/A	N/A	7.8%	28.1%	28.2%	28.3%	28.3%	27.0%
Change in working capital	0.0	(0.5)	(2.1)	(2.7)	(7.5)	(8.7)	(7.1)	(8.6)	(11.4)	(5.9)
Capex	(2.7)	(0.4)	(0.4)	(0.9)	(1.2)	(1.6)	(2.1)	(2.6)	(3.3)	(5.9)
EBITDA - Capex	(16.3)	(16.1)	(13.2)	(13.2)	4.9	32.4	45.1	60.1	79.6	73.2
Tax	0.0	0.0	0.0	0.0	0.0	0.0	(11.7)	(15.6)	(21.4)	(19.7)
Change in working capital	0.0	(0.5)	(2.1)	(2.7)	(7.5)	(8.7)	(7.1)	(8.6)	(11.4)	(5.9)
Other non-cash items	2.7	2.7	4.0	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Free cash flow	(13.6)	(13.9)	(11.4)	(15.3)	(2.0)	24.3	27.0	36.6	47.4	48.3
Terminal value									415.0	
Total cash flow	**(13.6)**	**(13.9)**	**(11.4)**	**(15.3)**	**(2.0)**	**24.3**	**27.0**	**36.6**	**462.4**	
Discounted cash flows	(11.8)	(10.5)	(7.5)	(8.7)	(1.0)	10.5	10.1	12.0	131.4	
Enterprise value	**124.5**									
Equity valuation	**148.7**		Net debt (cash) end 2017				(21.8)	NIS/USD FX rate applied		3.52
Value of Rail Vision Stake	15.4		Adjustment for:					WACC		15.0%
Total group value	164.1		Equity issues/merger funding 2018 YTD				(0.0)	Terminal growth rate		3.0%
Number of shares, diluted	115.7		Theoretical cash in-the-money ESOP/warrant exercise				(2.3)	Terminal value/EV		95%
Value per share (NIS)	**4.99**		**Adjusted net debt (cash)**				**(24.2)**			
Value per ADR ($)	**7.09**									

Source: Edison Investment Research

We have updated our DCF valuation to reflect the negative impact of the above-mentioned forecast revisions and the positive effects of rolling the model forward to FY18. The net impact has been to leave our DCF valuation unchanged at NIS4.99 per share.

Exhibit 4: Financial summary

$m	2016	2017	2018e	2019e	2020e
31 December	US GAAP	US GAAP	US GAAP	US GAAP	US GAAP
INCOME STATEMENT					
Revenue	0.0	0.0	0.0	2.6	14.6
Cost of Sales	N/A	0.0	(1.3)	(2.9)	(8.9)
Gross Profit	N/A	0.0	(1.3)	(0.3)	5.7
EBITDA (norm)	(3.3)	(6.4)	(10.9)	(13.1)	(8.8)
Operating profit (norm)	(3.3)	(6.4)	(10.9)	(13.1)	(8.9)
Amortisation of acquired intangibles	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0
Share-based payments	(0.4)	(2.5)	(2.7)	(2.7)	(4.0)
Reported operating profit	(3.8)	(8.9)	(13.6)	(15.8)	(12.9)
Net Interest	0.1	1.0	0.1	(0.0)	(0.1)
Joint ventures & associates (post tax)	(0.1)	0.2	(2.4)	1.5	6.5
Exceptionals	1.8	(8.2)	0.0	0.0	0.0
Profit before tax (norm)	(3.4)	(5.3)	(13.3)	(11.6)	(2.4)
Profit before tax (reported)	(1.9)	(15.9)	(16.0)	(14.3)	(6.4)
Reported tax	0.0	0.0	0.0	0.0	0.0
Profit after tax (norm)	(3.4)	(5.3)	(13.3)	(11.6)	(2.4)
Profit after tax (reported)	(1.9)	(15.9)	(16.0)	(14.3)	(6.4)
Minority interests	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Net income (normalised)	(3.4)	(5.3)	(13.3)	(11.6)	(2.4)
Net income (reported)	(1.9)	(15.9)	(16.0)	(14.3)	(6.4)
Basic average number of shares outstanding (m)	67.3	94.4	109.7	110.0	110.0
EPS – basic normalised ($)	(0.050)	(0.056)	(0.121)	(0.106)	(0.022)
EPS – diluted normalised ($)	(0.050)	(0.056)	(0.121)	(0.106)	(0.022)
EPS – basic reported ($)	(0.028)	(0.169)	(0.146)	(0.130)	(0.058)
Dividend ($)	0.00	0.00	0.00	0.00	0.00
Revenue growth (%)	N/A	N/A	N/A	N/A	458.4
Gross margin (%)	N/A	N/A	N/A	-11.3	39.3
EBITDA margin (%)	N/A	N/A	N/A	-499.6	-60.4
Normalised operating margin (%)	N/A	N/A	N/A	-501.0	-60.7
BALANCE SHEET					
Fixed assets	1.4	3.4	2.7	4.5	11.4
Intangible assets	0.0	0.0	0.0	0.0	0.0
Tangible assets	0.1	2.0	2.4	2.8	3.1
Investments & other	1.3	1.4	0.2	1.7	8.2
Current assets	3.9	24.7	13.4	6.1	8.0
Stocks	0.0	0.0	0.0	0.0	0.0
Debtors	0.0	0.5	0.5	0.4	2.4
Cash & cash equivalents	3.8	21.8	8.3	1.0	1.0
Other	0.1	2.4	4.6	4.6	4.6
Current liabilities	(0.5)	(1.1)	(1.2)	(7.3)	(18.5)
Creditors	(0.5)	(1.1)	(1.2)	(0.6)	(0.5)
Tax and social security	0.0	0.0	0.0	0.0	0.0
Short-term borrowings	0.0	0.0	0.0	(6.6)	(18.0)
Other	0.0	0.0	0.0	0.0	0.0
Long-term liabilities	(0.1)	(2.1)	(2.1)	(2.1)	(2.1)
Long-term borrowings	0.0	0.0	0.0	0.0	0.0
Warrant conversion and other long-term liabilities	(0.1)	(2.1)	(2.1)	(2.1)	(2.1)
Net assets	4.7	24.8	12.8	1.2	(1.2)
Minority interests	0.0	0.0	0.0	0.0	0.0
Shareholders' equity	4.7	24.8	12.8	1.2	(1.2)
CASH FLOW					
Operating cash flow before WC and tax	(3.3)	(6.4)	(10.9)	(13.1)	(8.8)
Working capital	0.8	0.3	0.0	(0.5)	(2.1)
Exceptional & other	0.2	0.0	0.0	0.0	0.0
Tax	0.0	0.0	0.0	0.0	0.0
Net operating cash flow	(2.4)	(6.0)	(10.9)	(13.6)	(11.0)
Capex	(0.1)	(0.3)	(0.5)	(0.4)	(0.4)
Acquisitions/disposals	(1.3)	0.0	(2.2)	0.0	0.0
Net interest	0.0	0.0	0.1	(0.0)	(0.1)
Equity financing	6.3	23.4	0.0	0.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0
Other	1.2	0.1	0.0	0.0	0.0
Net cash flow	3.8	17.1	(13.5)	(13.9)	(11.4)
Opening net debt/(cash)	0.0	(3.8)	(21.8)	(8.3)	5.6
FX	0.0	0.9	0.0	0.0	0.0
Other non-cash movements	0.0	0.0	0.0	0.0	0.0
Closing net debt/(cash)	(3.8)	(21.8)	(8.3)	5.6	17.0

Source: Edison Investment Research and Foresight Autonomous accounts

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