Seeing Machines

Mid Market Opportunities

Canaccord Genuity Limited (UK)

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UK Equity Research
18 October 2017

Initiation of Coverage

Quantum vision

Seeing Machines is a pioneer in the development and commercialisation of computer vision (eye & head tracking) algorithms, processors and systems with an overarching ambition "to be the leader in computer vision technologies that enable machines to sense, understand and assist people". Its core application focus to date has been Driver Monitoring Systems ("DMS"), developed in the Mining industry, which is now gaining traction in multiple additional transport verticals. While its productised solutions are today delivered primarily on an aftermarket basis, the forward roadmap involves progressive OEM specification and volume integration, via embedded processors (including the Fovio architecture for Automotive). Compression of the platform technology on silicon would allow SM to leverage new (and existing) applications at scale (including potentially AI, robotics etc.)

We see a multi-factor BUY case predicated upon:

- Broad multi-mode (and uncorrelated) transport strategy
- Accelerating Fleet growth to deliver EBITDA breakeven in FY20e, driven by strategic shift to SaaS (Safety as a Service) model and development of new sales channels such as Mix Telematics.
- DMS' growing importance within ADAS (Advanced Driver Assistance Systems), which is the fastest growing segment of automotive electronics and a key enabler of augmented and, ultimately, fully autonomous driving. SM's active engagement with multiple global Automotive OEMs and Tier 1s suggests very much part of the evolving ADAS adoption eco-system.
- Key technology validations including Cadillac (world's first DMS enabled production car), Autoliv collaboration (world's leading Auto Safety Tier 1, cannot be overstated in our view) and extended licence agreement with Progress Rail (world's leading electro-diesel locomotive manufacturer).
- Very differentiated risk profile versus generic norm for emerging AIM-listed tech stocks.
- Strong IP moat with 15 years of real-world data and application know-how at least as important as the algorithms themselves - not easy for a would-be competitor to synthesize. Over USD100m R&D sunk spend.
- Busy M&A landscape with Mobileye the ADAS pin-up. Multiple players including Apple, Google and Samsung vying for position.
- Compelling valuation with very substantial upside potential.

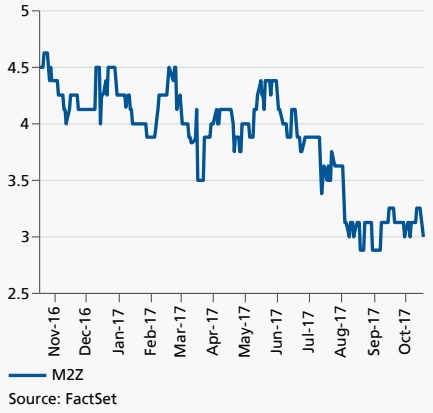
All considered, we believe the funding issue is the primary driver of the share price recession and implicitly high (46%) discount rate being applied. We model for an array of DCF fair value outcomes, under a spectrum of discount and terminal growth rates, both with a notional Aus$50m fund raise and without. We also explore fair value via discounted forward revenue multiples. Our blended fair value of 15p would put the shares on a calendar 2020e EV/Sales of 2.3x, EV/EBITDA 11.5x, and a PER of 19.7x. While we ascribe no discrete value to the intangible IP platform asset we do not doubt that this would be of meaningful worth to an acquirer, above and beyond the present value of the current commercial applications. We initiate with a BUY rating and 15p price target.

BUY

PRICE TARGET	15p
Price (17-Oct)	3p
Ticker	M2Z-LSE

52-Week Range (p):	3 - 5
Avg Daily Vol (M) :	3.2
Market Cap (£M):	44.7
Shares Out. (M) :	1,486.5
Enterprise Value (£M):	48.9

FYE Jun	2017A	2018E	2019E	2020E
Sales (A$M)	13.6	39.2	79.5	128.5
EBITDA (A$M)	(29.0)	(24.1)	(5.2)	21.9
PBT Adj (A$M)	(28.5)	(23.9)	(5.2)	21.9
Net Income Adj (A$M)	(29.7)	(25.5)	(7.2)	14.2
EPS Adj&Dil (A$)	(2.4)	(1.6)	(0.5)	0.9
DPS (A$)	0.00	0.00	0.00	0.00
Net Cash (A$M)	19.5	(4.7)	(12.3)	(1.6)
EV/Sales (x)	3.3	2.1	4.9	2.9
EV/EBITDA (x)	(1.5)	(3.4)	(75.2)	17.3



Source: FactSet

Priced as of close of business 17 October 2017

For important information, please see the Important Disclosures beginning on page 54 of this document.

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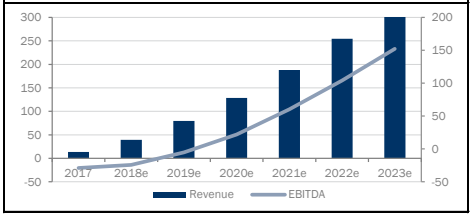
Company summary

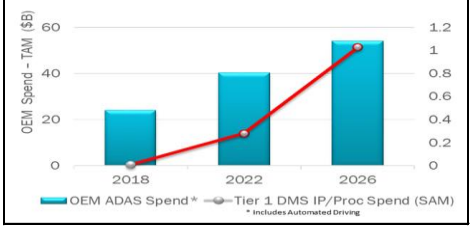
Company Description

Founed in 2000, Seeing Machines is a global leader in the development and commercialisation of computer vision algorithms, processors and systems. Target end-market applications today include Off-Road (Caterpillar), Fleet (Guardian), Automotive (Fovio), Rail and Aviation. The technology platform has future scope in the broad AI, machine learning arena. It is headquartered in Canberra (Aus), with offices in Melbourne, Tucson, Silicon Valley, Detroit and UK. Listed on AIM in 2005.

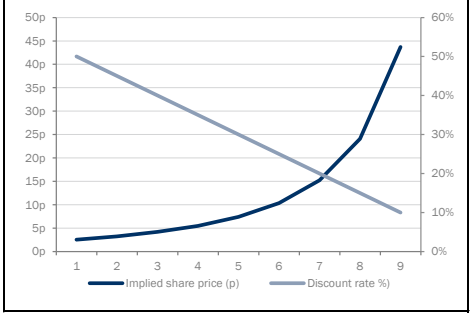
Revenue & EBITDA (Aus$m)



DMS SAM projections



NPV vs DCF discount rate (0% terminal growth)



Major shareholders

12.1%	Hunter Hall
8.7%	VS International Venture Pte Ltd
3.8%	Miton Asset Mgmt
3.5%	Royal Bank of Canada IM
3.2%	Fidelity International
3.1%	Investec Asset Mgmt
1.3%	Legal & General
1.2%	Axa Investment Managers
1.1%	BlackRock IM
0.7%	Amati Global Investors

Valuation	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
EV/Sales (x)	1.8	3.1	2.0	1.1	0.6	0.2
EV/EBITDA (x)	(20.5)	(1.5)	(3.3)	(17.0)	3.5	0.7
EV/EBITA (x)	(20.5)	(1.5)	(3.3)	(17.0)	3.5	0.7
EV/NOPAT (x)	(29.1)	(1.5)	(3.3)	(15.2)	5.2	1.0
EV/Invested Capital (x)	2.5	2.4	3.7	3.1	1.8	0.6
ROIC (%)	-	-	-	(20.6%)	35.2%	58.2%
P/E (x)	(3.2)	(2.1)	(3.1)	(11.2)	5.8	2.1
Div. Yield (%)	--	--	--	--	--	--
Equity FCF Yield (%)	-	-	-	-	13.0%	42.9%
NAV per share (c)	4.1	3.1	1.2	1.1	2.7	6.9

Summary P&L (Aus$m)	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
Sales	33.6	13.6	39.2	79.5	128.5	188.0
EBITDA	(3.0)	(29.0)	(24.1)	(5.2)	21.9	60.5
EBITDA Margin (%)	-	-	-	(6.5%)	17.1%	32.2%
EBIT	(2.1)	(28.0)	(23.1)	(4.2)	22.9	61.5
EBIT Margin (%)	-	-	-	(5.2%)	17.8%	32.7%
Adjusted PBT	(1.6)	(28.5)	(23.9)	(5.2)	21.9	60.8
Adjusted EPS (c)	(2.4)	(2.4)	(1.6)	(0.5)	0.9	2.4
DPS (c)	--	--	--	--	--	--

Growth	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
Sales (%)	161.0%	(59.6%)	189.0%	102.9%	61.6%	46.3%
EBITA (%)	(75.3%)	877.4%	-	-	-	175.9%
PBT (%)	(86.7%)	1686.6%	-	-	-	177.7%
EPS (%)	77.4%	(0.2%)	-	-	-	172.5%
DPS (%)	--	--	--	--	--	--

Summary Cash Flow (Aus$m)	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
EBIT	(2.1)	(28.0)	(23.1)	(4.2)	22.9	61.5
Depn. & Amortisation	(0.9)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Change in working capital	(4.5)	7.5	3.0	3.0	--	--
Net Capex	(2.5)	(2.2)	(3.5)	(3.5)	(3.5)	(3.5)
Interest	1.4	0.5	0.2	0.1	(0.0)	0.3
Tax	(0.0)	(1.1)	(1.5)	(2.0)	(7.7)	(21.3)
Other	--	--	1.7	--	--	--
Free Cash flow	**(8.4)**	**(24.5)**	**(24.2)**	**(7.6)**	**10.7**	**36.0**
Acquisitions / Disposals	--	--	--	--	--	--
Dividend	--	--	--	--	--	--
Share Issues / buybacks	13.1	27.1	--	--	--	--
Other	(1.7)	2.5	--	--	--	--
Movement in net debt	**3.0**	**5.2**	**(24.2)**	**(7.6)**	**10.7**	**36.0**
Net debt/(cash)	**15.6**	**19.5**	**(4.7)**	**(12.3)**	**(1.6)**	**34.5**

Summary Balance Sheet (Aus$m)	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
Non current assets	12	8	8	8	8	8
Current assets	33	39	17	15	34	83
Non current liabilities	0	0	0	0	0	0
Current liabilities	4	9	8	7	1	(12)
Net Assets	**40**	**38**	**17**	**16**	**41**	**103**

Financial Structure	Jun-16	Jun-17	Jun-18E	June-19E	Jun-20E	Jun-21E
Gearing (debt/equity) (%)	51.9%	(51.9%)	27.6%	78.0%	3.8%	(33.4%)
Net debt/EBITDA (x)	(5.24)	(0.67)	0.20	(2.38)	0.07	(0.57)
Interest cover (x)	-	-	-	--	-	-

Source: Canaccord Genuity estimates, Company Reports, Thomson Reuters Eikon

Executive Summary

Seeing Machines ("SM") is, in our view, a world-class technology company trading on a frankly very depressed rating. Far from enjoying the kind of premium rating its prospective revenue growth and gross margin expansion should accrue, it is being valued more generically as just A N Other loss-making, AIM-listed tech stock, struggling to find a commercial application ("the Torotrak factor"). SM's DMS technology has found commercial applications in multiple transport verticals, including most notably to date Off-Road (with Caterpillar) and Fleet (Guardian) which is now accelerating – but also Aviation, Rail etc. Within the Automotive target segment, SM's technology is being actively appraised (and beyond, cf. GM Cadillac) by multiple OEMs and Tier 1s ahead of, in our view, likely wide deployment in future generation cars. This end market is likely to involve compression on silicon (Fovio processor), which should provide the additional benefit of a common technology platform, which can more readily be scaled within emerging verticals, including for example AI (Artificial intelligence). SM's widely reported involvement in GM's Cadillac CT6 (the world's first DMS-enabled semi-autonomous car), the recently announced collaboration with Autoliv (the world's leading Automotive safety Tier 1), as part of its ADAS eco-system, and extended Licence signed with Progress Rail (the world's largest locomotive manufacturer), are all powerful validations of SM's technology and commercial relevance, in our opinion.

We believe the primary determinant of the shares' low rating is the perceived incremental funding gap ahead of any material uplift in future revenues and margins but we contend that any dilution suffered would be more than compensated for by a reduction in the implied discount rate (currently a fairly distressed 46%). Given the outstanding growth potential, and asymmetric risk/reward, the shares should arguably trade on a significant premium.

Our fair value of 15p is derived from a blended spectrum of 10-year DCF implied fair values (under a spread of assumed discount rates and terminal growth assumptions, both with or without a notional Aus$50m equity raise); and discounted forward revenue multiples. At our target price the shares would trade on a calendar FY20e EV/Sales of 2.3x, EV/EBITDA 11.5x, and a PER of 19.7x which is reasonable in our view given annualised forecast revenue growth in that year of 50% and a five-fold increase in EBITDA (albeit from a modest base). Eye-tracking is a busy corporate space and it is quite possible, in our view, that the apparent delta between the current price and our target, alongside the IP stack, may attract a predator. We initiate with a BUY and target price of 15p.

Multi-factor investment case

- **Breakthrough technology** with **commercial applications across multiple industries**. Industry benchmark proprietary high-precision, high-reliability Face & Eye tracking technology. Core transportation verticals now scaling with i2 innovation unit focused upon disruptive new ventures.
- **First mover advantage** with **industry proven technology**. Over 17 years of research know-how, application expertise and industry proven solutions in core problem space. Validation via industry leaders (most visibly to date Caterpillar, but also automotive major OEM/Tier 1 leaders and Fleet/Telematics partners). Unique synergy access to real-world data between segments – can surely help accelerate roadmap through Machine Learning.
- **Large addressable markets** and **strong growth drivers**. Global Fleet market opportunity driven by SaaS Telematics integration – projected to exceed USD2bn by 2022. Automotive DMS projected to exceed USD1bn SAM by 2026, driven by ADAS, HMI and autonomous driving. Significant market opportunities in emerging applications such as Aviation, AI, Robotics etc.
- **Strong business plan** with multiple high-margin revenue streams. Fleet direct sales growing rapidly, augmented by new channels (including Telematics partners) and new generation products. Strong early traction in Automotive DMS, ADAS more generally and autonomous. Off-Road and Rail vertical licence deals with industry leaders offer near-term, high-margin growth potential.
- **Sustainable, competitive advantage** including a proprietary AI technology platform. The company has a strong IP moat, including both patents and, as importantly we would argue, real-world application expertise, including a vast bank of data observations and analysis. A broad technology stack provides optionality for optimum value chain participation – software, silicon, systems. Industry 1st Fovio DMS Processor can enable a highly differentiated and scalable business. Strong roadmap, shaped by Human Factors research can drive selling price ("ASP") expansion.
- Deep bench of **Engineering Expertise** including world-class experts in computer vision, processor architecture, human factors, machine learning and AI. Having visited the Canberra, Australia HQ we would also point to the unique culture within SM. **Experienced management team** with strong biographies in building global high-technology businesses. Key appointments include Mike McAuliffe (as CEO) and Nick DiFiore to run Automotive.
- **Expanding eco-system** of leading Automotive and Tier 1 collaborations.

Figure 1: Automotive OEM

Source: Company reports

Figure 2: Automotive Tier 1

Source: Company reports

- Growing momentum – **strong & accelerating pipeline** of RFI (Request for Information, i.e., exploratory knowledge building by customers to learn about a technology and its application scope) and RFQ (Request for Quotation, i.e., hard dollar bid for a deliverable assignment) activity.
- **News flow acceleration**: Autoliv, Progress Rail, GM etc
  - June 2017 – Freshlinc becomes first UK Fleet customer
  - August 2017 – Autoliv collaboration "to deliver next generation DMS for autonomous vehicles"
  - September 2017 – Progress Rail extended partnership agreement
- **Very attractive valuation** with a target price indicating c400% potential upside.

Business Summary

Seeing Machines is a pioneer in the development and commercialisation of computer vision algorithms, processors and systems with an overarching ambition "To be the leader in computer vision technologies that enable machines to sense, understand and assist people". The company's core technology domain is the sensing, tracking & analysis of human head, eyes and face to determine cognitive state as well as delivering precision eye-tracking for multiple applications, including for example, the training of air traffic control ("ATC") personnel. SM's primary application focus to date has been Driver Monitoring Systems ("DMS"), productised technology-based solutions involving the integration of driver-facing hardware (cameras/sensors) and intelligent algorithmic processing (computing), which monitor and mitigate Driver Drowsiness & Distraction which in turn reduces accidents, cuts costs, protects assets and saves lives. DMS is a demanding and mission-critical application environment requiring high fidelity analytics in real-time and real-world conditions (such as a hot, dusty mine).

Headquartered in Canberra, Australia (having been a spin-out from the university there) with offices in Melbourne, Tucson, Silicon Valley, Detroit and the UK (Glasgow), the company employs around 180 personnel including 100 engineers/technical and 25 PhDs (including Chief Scientific Officer Sebastien Rougeaux and Chief Technology Officer Tim Edwards, co-founders of the company and world recognised computer vision and machine learning experts).

In the recently announced finals to June 2017 the company reported underlying revenues of AUS$13.6m (+122% LFL) and an operating loss of AUS$29.7m (versus Adj. AUS$20.6m loss in FY16). Period-end net cash was AUS$21.4m.

SM is listed on AIM with a trailing EV OF £27.3m (having floated in 2005, with a then EV of £6.4m).

Summary Corporate Chronology

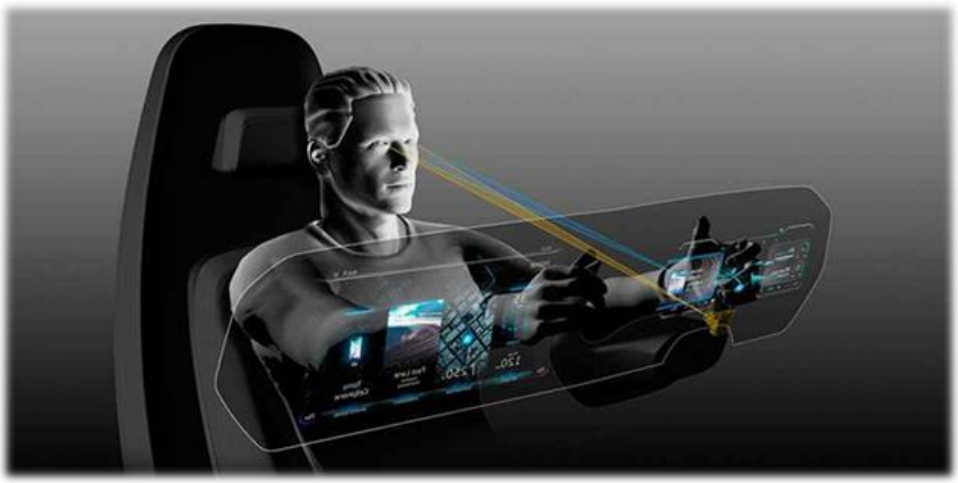
2000	Founded as spin-out from Australian National University
2004	First DMS prototype with Volvo trucks
2005	AIM listing (gross new money AUS$3.8m at 3p)
2008	First Off-road (Mining) customer (BHP Navajo)
2012	CAT global alliance
2013	First Road transport customer (TOLL)
2014	First OEM Automotive DMS contract with Tier 1 (Takata)
2015	CAT global Off-road agreement signed (AUS$21.9m)
	Fleet Guardian product launched
2016	Global distribution agreement with MiX Telematics
2017	World's first semi-autonomous car with SM DMS enters production
	First major Guardian contracts signed in US (Shamrock) and UK (Freshlinc)
	Fovio (DMS System-on-Chip "SoC") samples in qualification
	Autoliv (major Tier 1) collaboration on next gen DMS for autonomous vehicles
	Progress Rail (CAT subsidiary) extended partnership agreement

Precision Head, Face & Eye Tracking in real-world vehicle conditions

Precise, real-time detection, tracking and interpretation of head pose and facial features lie at the heart of SM's growing application suite. Key facial component signifiers include: Eyelids (precision measurement of blink rate, eyelid aperture); Eye Gaze (precision tracking of eye focus, precisely what the person is looking at); and Pupillometry (precision detection and analysis of pupils).

While there are apparently many companies globally (50+) involved in the Eye Tracking arena it is important to recognise that SM has unrivalled experience, and is highly differentiated, in what are described as "large head box" environments such as vehicles, which present an especially complex computer vision challenge and require the seamless integration of hardware and vision processing algorithms via the use of infra-red, for example (which normalises for light and shade). Many of SM's perceived competition are in truth focused upon VR (virtual reality) including headsets, which constitute a far less challenging, stable "eye box" environment.

Figure 3: Near-infrared (NIR) light reflections are captured by dash-mounted NIR camera/sensors



Source: Company reports

SM's technology works in real-world conditions

It is not easy extracting robust signals from a few pixels with poor signal-to-noise ratios. Strobing and light intrusion (including sharp dynamic shifts such as one might experience exiting a fast road tunnel on a sunny day) are major hurdles versus the clean lighting conditions presented by a laboratory say or VR headset. Other real-world cockpit variations include vehicular occlusions (from the steering wheel for example) and whether the driver is wearing sunglasses – furthermore the performance curve must be consistent across different types of glasses, in all ambient conditions (day and night). The SM architecture is robust across the infinite human spectrum (all ethnicities, hair types etc.) which is of relevance when considering possible future facial recognition/ID applications.

Similarly Mobileye (now part of Intel) , which we touch upon later, has had to overcome a number of difficult, real-world driving conditions. While SM is focused upon the driver inside the cockpit, Mobileye's application focus is machine vision outside of the cabin, for example to assist the driver in detecting pedestrians in darkness or oncoming vehicles. As with SM one particular challenge has been the camera/sensors, which with limited measurement range and signal bandwidth, often struggle to distinguish between "signal" (i.e., an obstacle in the road) and system "noise", in particular in sub-optimal weather conditions such as rainstorms or fog when visibility is impaired. Additionally, forward-vision warning systems are known to exhibit progressive difficulty in identifying objects when a vehicle is travelling at higher speeds.

SM's highly optimised algorithm processing, in real-time, allows meaningful data interpretation solving for the following driver conditions:

- Drowsiness/fatigue – detection, prediction
- Distraction – of all types including for example mobile phone texting, with a . quarter of all teen road deaths in the US last year shown to be result of texting

- Cognitive Engagement – driver/operator state without any prior calibration
- Incapacitation – impairment of various types

And ONLY when necessary, an instantaneous, mitigating response is enacted via a programme intervention (such as an audible in-cabin alert).

Alongside the significant application challenge described above the empirical validation data set is critically valuable in our view. Real-world know-how, alongside a vast data bank of driver events and interventions (millions of miles on the clock), all help to build credibility and confidence in would-be end-users. These are life and death applications and the supporting data is impossible to synthesise in pure code or a laboratory.

Ocado parallels

We are reminded of online grocery retailer Ocado (OCDO-LSE | NR). Whatever its merit or otherwise as an investment opportunity, what the company has achieved in terms of applying technology to tackle the most complex of supply chains (50,000+ SKUs with different temperature, size, weight, shelf-life profiles) and deliver a best-in-class customer proposition is remarkable in our view. Beyond sophisticated coding and software algorithms this true pioneer had to overcome real-life hurdles, including warehouse plant configuration issues and other bottlenecks that were not in the model. In the case of SM the real differentiator versus a would-be competitor is the unique integration of NIR, image sensors, filters and proprietary vision algorithm processing, backed up by extensive field data. Ocado and SM are of course very different entities but both have got to where they are today through a convergence of great technology and real-world application knowledge.

While the company's technology based solutions have to date understandably been focused upon after-market products (in-cabin systems) and services (including "SaaS", Safety as a Service), the forward roadmap involves progressive OEM specification and integration at scale, involving embedded processors (including the Fovio architecture for Automotive). In the multi-mode transport sphere alone we see an evolution from basic driver monitoring, through advanced DMS (driver state etc.) towards driver/machine co-pilot and beyond.

Technology summary

- End to end solution: high precision and high-reliability face and eye tracking applied across a broad range of applications and industries including to date:
  - Mining
  - Commercial Fleet
  - Automotive
  - Rail
  - Aviation
- Seamless integration anywhere: non-intrusive, fully auto, NIR camera-based technologies which do not require any user calibration, special glasses or sensors
- Proprietary algorithms & software: detects and precisely tracks human head, face and eyes to deliver understanding of where the person is looking and their cognitive state without any calibration or prior knowledge – based on cutting edge computer vision algorithms and machine learning technology
- Company developing Fovio Processor – initially targeted at Automotive via proprietary FPGAs (field-programmable gate arrays) but in time will seek migration towards processor chip (SoC/SiP) to execute vision algorithms for optimum performance and cost – this will offer a standard validated platform solution which can then be sold to a wide customer base enabling a highly scalable business model

A Broad Multi-Mode Transport Strategy

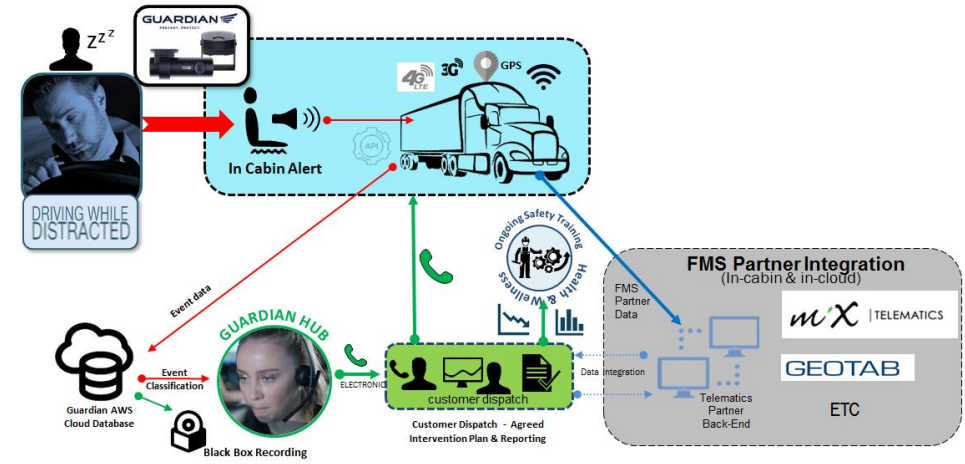
FLEET – Guardian

Source: Company reports, Canaccord Genuity estimates

The core technology application here is Fatigue, Distraction, Incapacitation detection for drivers of commercial truck, coach, van and taxi fleets. SM's proprietary DMS solution (branded Guardian) is a unique end-to-end system, comprising of:

- aftermarket hardware (the box) to execute in-cabin monitoring and intervention in real-time (via audible alert and/or seat vibration)
- 24/7 remote monitoring in a cloud-based SaaS (Safety as a Service) model

Figure 4: Guardian full service solution delivered under a SaaS model



Source: Company reports

Implementation of Guardian by fleet operators has been shown to reduce driver drowsiness and distraction events by c90%, with detection and intervention in over 20,000 fatigue and 300,000 distraction episodes in FY16 alone. Guardian real-time interventions save lives (not just that of the driver but also other road users and/or pedestrians) and reduce costs (for the fleet operator in terms of lower legal costs pursuant to an accident and potentially, structurally reduced insurance premiums).

Insurance is a significant cost in Trucks (but also taxis etc.) and SM is currently trialling a solution with Zurich Insurance in APAC/Australia with early indications suggesting a compelling economic rationale. As has proven to be the case with some bus drivers in the UK, there will of course be some truckers who will not necessarily welcome the "Big Brother" intrusion of in-cabin monitoring but conversely there may also be some union pull. Lee Juniper, MD of Freshlinc, Guardian's first UK fleet customer, sums it up nicely: "We care about our drivers and want to make sure each one gets home safely every day. Even though our drivers and equipment are among the best on-the-road, we are confident this technology will further strengthen our safety culture, protect our drivers and improve highway safety overall".

US alone a large opportunity

Driving penetration of this large addressable market

The addressable market opportunity for Guardian is potentially large with over 330 million commercial vehicles in service globally, of which c200 million are heavy trucks and of these around 30 million are in the USA alone. Guardian DMS falls within the broadly defined telematics market which is forecast to be worth USD27.9bn in 2021 – with the specifically available market ("SAM") for Guardian estimated to reach USD1.5bn (Source: Berg Insight, June 2016). Primary focus markets today include Australia, the US and the UK, alongside parts of AsiaPac including for example Thailand, and while sales and TCV (total contract value) grew strongly in FY17 +275% and +360% respectively, this was from a very low base and we believe it is fair to say that SM is, as yet, barely scratching the surface.

Multiple channels to market – market development

As a pioneer in Fleet DMS driving, early market adoption of Guardian necessitated a direct (and unit costly) sales approach. While Direct still accounts for around 70% of commercial sales SM has progressively sought to expand its third party distributor network (adding five new partners in the past 12 months alone) which now accounts for around 30% and growing of customer installations. Guardian has had particular success in developing a strong APAC distribution network with new local partner Kiattana (Thailand), for example, selling over 7,000 systems to date. Leveraging channel partners not only increases customer reach and penetration but also importantly moderates new customer implementation expense, in particular with regard to box installation costs. Guardian has now trained a number of outsourced installers, mitigating the requirement for an SM engineer to travel to the fleet operator location, often at high marginal cost.

Figure 5: Some key Fleet customers

Source: Company reports

Guardian is commercially deployed today by over 130 Fleet operators and in many cases these existing customers alone present growth potential as they propagate Guardian more broadly across their vehicle fleets. Furthermore Guardian has a burgeoning pipeline with multiple assessment trials ongoing involving c500,000 trucks. The US pipeline is especially busy – for example Greyhound owner Coach US – and conversion rates appear encouraging.

Telematics

As described above DMS falls within the umbrella classification of Telematics and in the case of most, if not all, truck cabins Guardian will be sharing dashboard real estate with a whole array of other aftermarket electronics/boxes (from Telematics players of far great scale than itself). Rather than compete head-to-head with the major telematics companies SM has made the strategic decision selectively to co-operate instead, thus enabling Guardian to access its global channels, greater scale, reach and infrastructure. For example the telematics majors already have a large installed cabin footprint of over 5 million trucks, growing at c12% per annum (Source: Driscoll Report, 2016). For its part SM Guardian is able to offer these partners new, differentiated products and income streams.

Figure 6: Telematics partnership

Source: Corporate website

The most prominent engagement to date has been the signature of an initial distribution agreement with MiX Telematics (MIX : JSE, MIXT : NYSE) which has 650,000 trucks under contract (and 14 dedicated sales personnel). By effectively leveraging MiX's back-end we believe Guardian can expand both its installed base and in time addressable market. As an aside, MiX already achieves higher than industry average revenue per customer (ARPU) owing to an overindexation in high value oil & gas fleets. Mixed fleet types add complexity which the partner, rather than Guardian itself, can effectively manage. SM states that the relationship is now in "full steam mode" and that early progress is "encouraging". As we discuss below this collaboration may eventually lead to a deeper "integration". Elsewhere, as part of the strategic initiative to work alongside Fleet telematics gorillas, Guardian was added to Geotab's global marketplace.

Transition to a SaaS rental model

Opex vs Capex sales model

In our view the most important strategic move has been the migration from an upfront hardware sale + monitoring service model to a SaaS (Software as a Service) monthly subscription model, with the hardware cost effectively amortised over the life of a service contract (36 months or longer). Historically the customer would procure the necessary Guardian hardware as Capex (say US$800 upfront charge) but now, as is often preferred, the customer can access the solution on an Opex basis via a flat monthly fee (of say US$60/month for 3 years). As is typically the case with an initial consumer TV satellite subscription the connection cost is, at least partially, recovered via an installation fee. Given the defined contract term SM has been able to access Securitisation Financing (in around 10% of cases) with several finance companies to help fund the Opex model hardware cost.

The accounting treatment involves recording the Opex hardware as an implied upfront sale with the associated debtor paid off over the life of the contract. The monthly service delivery cost is matched against the flat monthly subscription (i.e., each monthly customer payment will include a repayment against the hardware receivable and a payment for the service). The transition towards a SaaS model has many advantages, not least the improving revenue quality (visibility) and operating cash flow profile of the Fleet transport vertical. The growth in these higher margin services enabled SM to achieve a positive (just) gross margin in FY17.

Total Contract Value ("TCV") growing

TCV growing ahead of reported revenue

TCV effectively reflects the commercial substance of a new customer win under the SaaS model. While bookings and sales grew strongly in FY17 (+275% to AUS$9.1m) TCV expanded at a faster rate (+360% to AUS$36.5m) reflecting the future revenue to be earned outside of the current accounting period. We absolutely expect this disparity between growth in reported revenue and TCV to continue in the coming years. That said, we believe it is fair to say that hereto TCV has not translated to revenue as quickly as originally anticipated. Sales revenue is recognised when a unit is shipped to a customer and monitoring revenue is first recognised once the unit is installed and monitoring services are being delivered. As these large customer deals have been negotiated, customer preferences have emerged such that units are in fact shipped over time to align with how quickly a customer is prepared to make its fleet available for installation of units. Under a "phased" rollout there is thus a time lag between signing up a customer and being able to recognise sales revenue.

Improving economics (Fleet 2.0)

Alongside the transition to a SaaS model which has made Guardian more accessible to a broader Fleet operator set (with would-be customers no longer having to suffer the upfront Capex cost) various product roadmap initiatives (box cost, design, performance) will also, we believe, drive adoption, and importantly enhanced profitability for SM. Emerging as it did from its highly ruggedized roots in the Mining

sector, the cabin hardware was somewhat over-engineered and costed for the Fleet sector. First iteration Mining boxes cost as much as USD$15k but even first generation Fleet units have cost around USD1,500 which is still too high and offers neither attractive margins to SM nor enables monthly SaaS subscription costs to fall (from cUSD50 currently, on a 3 year contract), which would itself accelerate market penetration (owing to improved affordability).

Figure 7: Fleet 1.0

Source: Company reports

Figure 8: Fleet 2.0

Source: Company reports

Thus Fleet 2.0 (see above) has been designed to replace Fleet 1.0. Happily most of the 10,000 units of Fleet 1.0 inventory have now been sold, save for a few units to bridge the gap ahead of Fleet 2.0 becoming available from December 2017. The new generation hardware is lighter, has a smaller cabin footprint (important in our view), has a better plug-in arrangement and is quicker (and implicitly cheaper) to install. In terms of selling price and manufacturing/assembly cost this is a game changer:

- Fleet 2.0 will be deliverable to customers at around USD600 (with say USD500 cost to SM), a c60%+ affordability improvement
- production schedules for Fleet 2.0 are more flexible, with Just-in-Time (versus Fleet 1.0 long lead times) and better terms available via a new contract manufacturer out of Hong Kong

Ultimately can expect embedded processors

The productivity agenda is by no means static and Fleet 2.0 will iterate towards Fleet 3.0, with superior performance, new features and further cost engineering. In the medium term it seems reasonable to expect further module integration within Fleet telematics, with the ultimate possibility of one or more "embedded" processors running off one piece of in-cab aftermarket hardware. While price is key for all Fleet operators so too are multi-ability in-cab product, free hardware upgrades and better integration.

AUTOMOTIVE – Fovio DMS platform

"The world's car industry is in transformation. Tougher regulation, shifting consumer demand and technological disruption are prompting two profound changes:

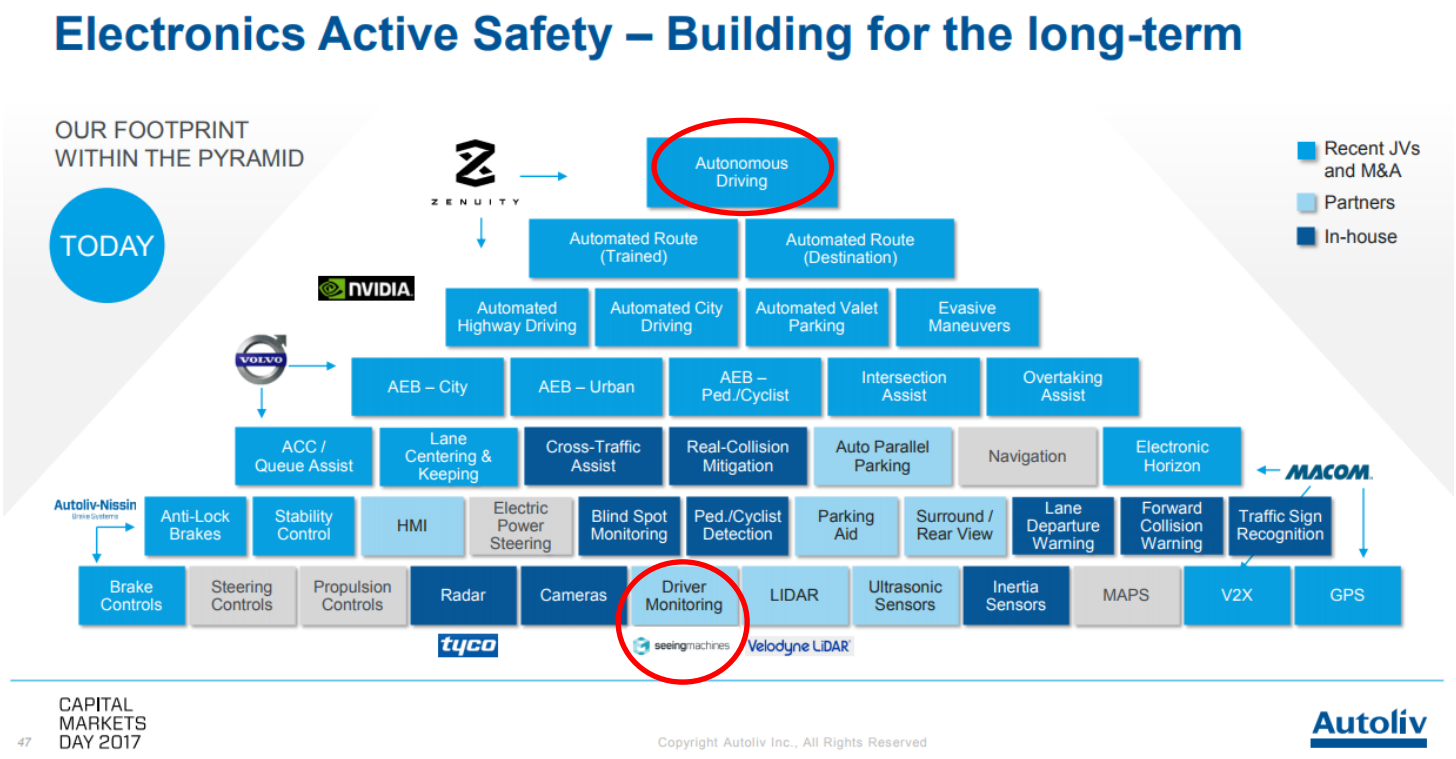
- The advent of advanced driver assistance systems ("ADAS"), which may ultimately pave the way for self-driving vehicles (from dumb to intelligent vehicles)
- The rise of electric vehicles (from combustion engine to electrification)"

(Source: "Future of the Automotive Industry" BlackRock advertorial published in the FT, 12 June 2017)

Seeing Machines Automotive DMS

Albeit just one brick, Seeing Machines' DMS ("Driver Monitoring System") sits right at the foundations of this emerging ADAS application pyramid.

Figure 9: DMS within ADAS application pyramid



Source: Autoliv Capital Markets Day 2017

Seeing Machines Automotive application overview:

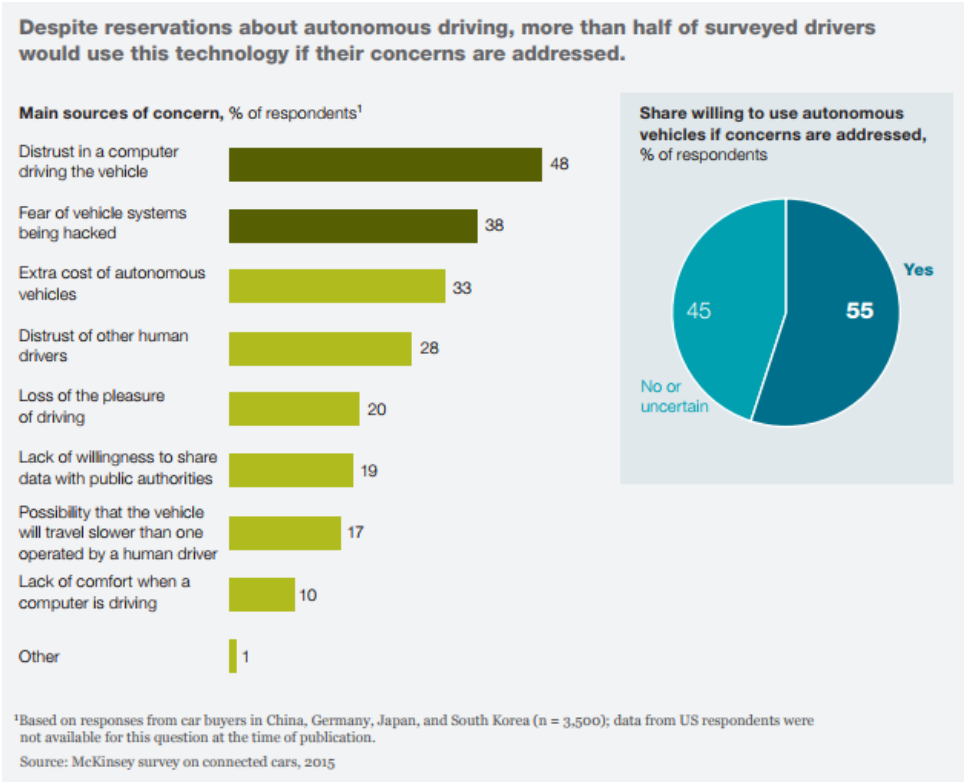
- Driver Monitoring Systems (DMS) – SM's technology delivers precision monitoring of Head and Eyes to determine Focus, Drowsiness and Distraction for safer driving. Camera/NIR sensor arrays include 2D configurations, potentially at different positions in the dashboard, while 3D (depth-discerning) cameras are also being actively explored.
- Advanced Driver Assistance Systems (ADAS) – SM's technology allows real-time understanding of the driver's state, precision eye gaze focus enabling smarter ADAS decisions for warning & action. Beyond providing driver alerts in the event of distraction or fatigue, by using information relating to the driver's head and body position provided by the same DMS capability, appropriate deployment of

airbags (intensity, location etc.) can be implemented in crash situations. Just as MobilEye can provide intelligent vision outside the car SM can provide intelligent observations from within the vehicle. Adoption of SM's DMS, alongside other vendors, such as Mobileye, can enable a car's ADAS "to make instant decisions based on a situational understanding of what's happening both outside and inside the vehicle".

- Autonomous Driving (AD) – the top brick in the Autoliv ADAS pyramid – is likely, in our view to require DMS as a critical part of the technology stack for safe Driver-Vehicle operation as "co-pilots". Both NHTSA (National Highway Traffic Safety Administration) in North America and Euro NCAP (New Car Assessment Programme) have already intimated that semi-autonomous cars may require DMS.

Interestingly a recent (2015) McKinsey survey on connected cars confirmed that consumers are concerned about the safety of ADAS autonomous-vehicle offerings. When asked about autonomous driving, almost half of respondents expressed distrust about the computers that control the vehicle, and 38% stated that they feared hacking. However, more than half of respondents said that they would be willing to use an autonomous vehicle if their concerns were addressed.

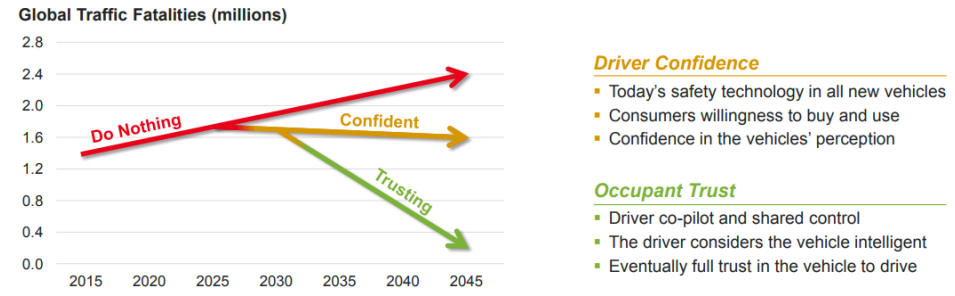
Figure 10: Driver anxiety in relation to autonomous driving technology



Source: McKinsey survey on connected cars, 2015

As consumers become familiar and more trusting in the abilities of ADAS system-equipped vehicles, a necessary evolutionary step towards the car of the future, their widespread adoption will surely reduce accidents and save lives.

Figure 11: The Road Towards Saving More Lives – Mitigating the Future?



Source: Autoliv CMD presentation

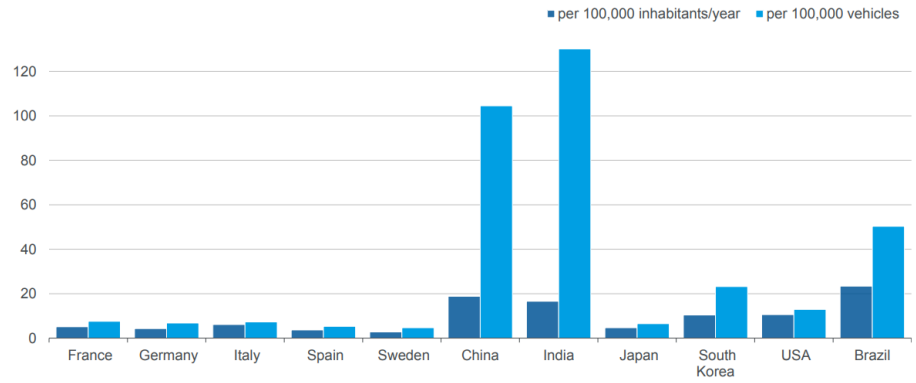
Driver distraction is a major cause of car accidents

Texting a growing source of distraction

The DMS imperative is here today, even before one considers cars of the future. According to an American Automobile Association (AAA) study in 2010 more than one in six accidents can be attributed to distracted and drowsy driving. Of the 1,804 fatalities and 22,855 serious injuries on UK roads in 2015, distraction accounted for 25% of fatalities and driver error 68% (Source: Reported Road Casualties Great Britain: Annual report 2015, Department for Transport). Distraction (in particular from smart phone use) is a major issue gobally with a quarter of all teen road deaths in the US last year shown to be as a result of texting.

The situation is particularly acute in low and middle income nations where, according to the World Health Organisation (Global status report on road safety 2015), c90% of the world's traffic deaths and injuries occur.

Figure 12: Road fatalities per country



Source: Autoliv company presentation – Capital markets day 2017

DMS adoption may become mandatory

#EuroNCAP2025

Source: Company reports, Canaccord Genuity estimates

Safety has always been a critical catalyst in the evolution of vehicles and the adoption of ADAS technologies, as they become available, is likely to be supported by governments. By way of reference, the last ten years has seen legislation in many countries for the mandatory introduction of other safety systems such as Electronic Stability Control (ESC) braking and tyre pressure monitoring. In the case of DMS, it has been undergoing studies to become mandated (by regulators) or recommended (Euro NCAP) technology for Level 1 to Level 4 cars (L5 being fully autonomous). Please refer to pp29-30 for a detailed explanation of Levels of Driving Automation.

And on 12 September Euro NCAP, on its 20th anniversary, launched its Road Map 2025 with a timeline for the introduction of some key protocol enhancements including of specific import to Seeing Machines:

- Primary Safety: Driver Monitoring (2020)
- Tertiary Safety: Child Presence Detection (2022)

Euro NCAP "will challenge vehicle manufacturers to offer the best possible technology as standard in all vehicle segments and countries". As Semicast Research explains in a report (Autonomous Driving set to remain on the horizon – for now):

> "This timeline is likely to jolt a number of OEMs, Tier 1s and semiconductor manufacturers into action and to catapult relatively unknown eye tracking companies, such as EDGE3 Technologies, Seeing Machines and Tobii, into the mainstream. As the 2017 Frankfurt Motor Show demonstrated, the auto industry is mostly dreaming of a far-off utopian autonomous future, while distracted drivers are killing themselves and others today … The message from the NTSB and from Euro NCAP is unambiguous: Quit dreaming, the time for action on DMS is now."

In its most recent publication Semicast coined a new paradigm to sit along the existing glossary of terms in relation to Levels of Automation – "augmented driving",a "human-machine collaboration, where AI *augments* … rather than *replaces* the human driver". In our view DMS sits at the heart of this proposition.

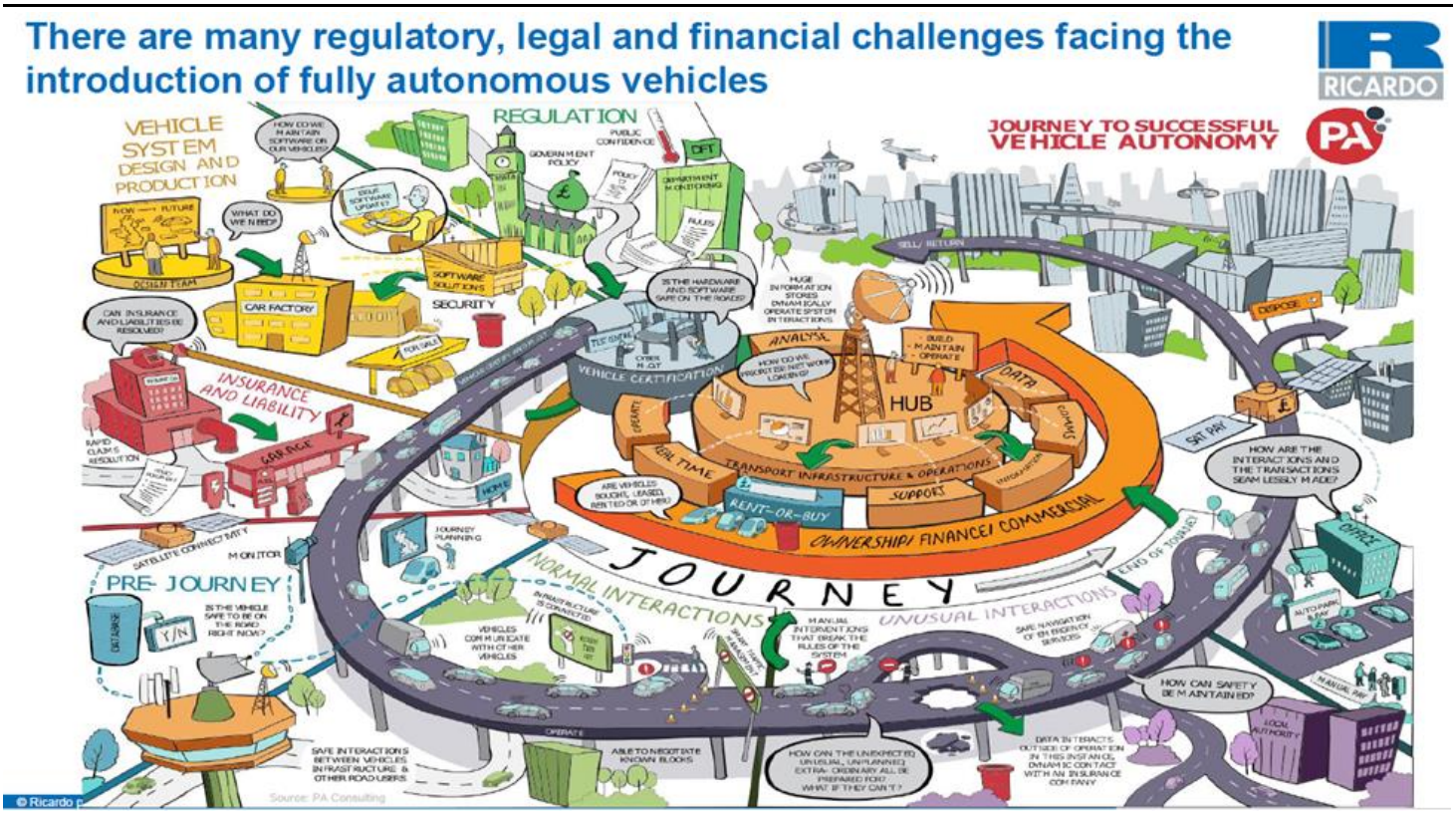
Insurance industry

Autonomous cars an existential threat to motor insurers?

Mitigating accident-related vehicle claims inflation is a clear imperative for insurers also, with some already offering discounted premiums on cars equipped with specific ADAS features, such as automatic emergency braking. As DMS becomes more widely available, with its demonstrable ability to prevent accidents, as part of the ADAS array within vehicles, insurers are likely to be supportive. Paradoxically the journey towards the advent of Level 5 fully autonomous cars may in truth present something of an existential threat for the private motor insurance industry.

The many and various challenges (engineering, regulatory, legal, financial etc) which will need to be overcome to make autonomous cars a reality are nicely captured in this cartoon (Figure 13, see below) from Ricardo's recent Capital Markets Day (July 6th) –"augmented driving" on the other hand "seeks to make humans into better drivers right now" (Source: Semicast Research Ltd.).

Figure 13: Future Automotive Challenges & Opportunities, Professor Neville Jackson (Chief Technology & Innovation Officer, Ricardo plc)



Source: Ricardo CMD, 6th July, 2017

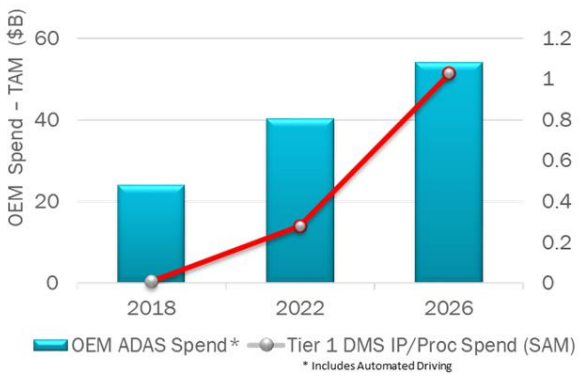
Large addressable market

The total addressable market is hard to define but potentially large, with ADAS/AD (Autonomous Driving) the fastest-growing field of automotive electronics spend.

A McKinsey report from February 2016 ("Advanced driver-assistance systems: Challenges and opportunities ahead") provides some interesting analysis but is somewhat historic now in its perspective. It cites a TechNavio forecast of USD30bn spend in 2020e for ADAS (including adaptive front lighting and head-up display).

Quantifying DMS within ADAS is also not easy. Until very recently the best estimates upon which we have been able to draw are SM's own, in combination with data derived from IHS and Strategy Analytics (which suggests SAM of USD1bn in 2026).

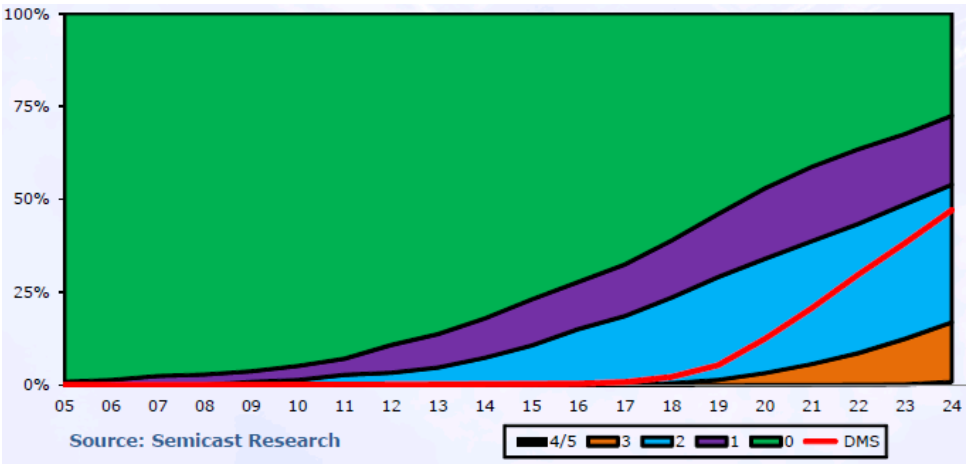
Figure 14: DMS SAM projections



Source: Strategy Analytics, HIS, Seeing Machines (internal)

But in a report published just last week Semicast Research Ltd. (Broadcast, October 2017) provided a new and far more aggressive outlook for DMS participation within overall ADAS spend.

Figure 15: Worldwide Light Vehicle production trend by SAE Automation Level with DMS installation rate (2005-2024)



Source: Semicast Research **SAE - Society of Automotive Engineers*

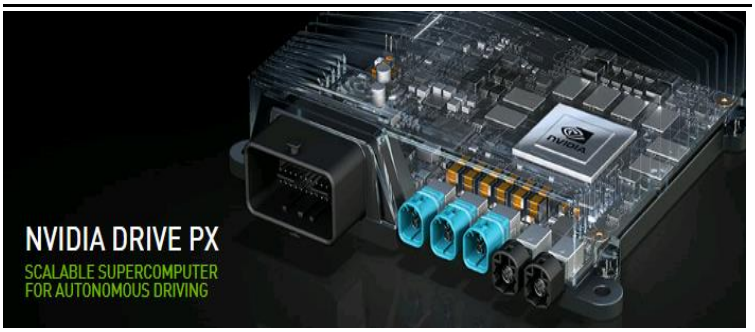
While the global installation rate for DMS was "less than 1% in 2016", Semicast now "see this rising to almost 50% in 2025", which is way ahead of SM's existing assumptions.

Automotive Go-to-Market Model

At heart SM is pursuing a fairly vanilla approach for this industry:

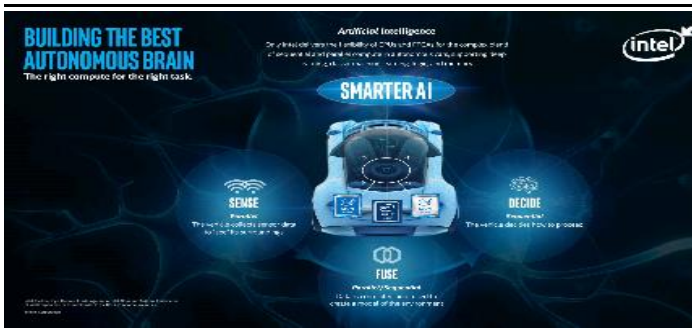
- SM informs and educates a given OEM on its DMS technology, with paid consulting & engineering (where possible)
- The OEM may then direct SM to a preferred Tier 1 parts/solution supplier
- SM works with the selected Tier 1 (on either a strategic partner or programme customer basis). Production programme unit revenue is paid by the Tier 1.
- The OEM sources a production-assembly-ready solution from the Tier 1 with integrated SM technology

Figure 16: Nvidia (Tier 2 participant)



Source: Nvidia Automotive

Figure 17: Intel (incl. Mobileye) a key player



Source: Intel Automotive

But with a multi-dimension twist:

- In addition SM is also actively engaged with relevant Tier 2 participants in this emerging automotive electronics arena (such as Nvidia, NVDA-NYSE (NR) and Intel, INTC-NYSE (NR)). The need to develop innovative ADAS technologies is prompting OEMs to collaborate more closely with tier-two suppliers, thereby giving these suppliers a more critical role in vehicle design and manufacture. We believe

investors should continue to expect multiple collaborations across the value chain. Given the need to differentiate themselves from competitors for both driver-support and autonomous functionality, and to mitigate an over-reliance on individual suppliers, OEMs are taking a more strategic leadership in ADAS development than might be the case in a more conventional, component category. Furthermore ADAS technologies, by definition, already have high safety standards and these are only likely to increase as these applications assume a more active co-pilot role. ADAS solutions will likely be rated at Automotive Safety Integrity Level D, the classification reserved for components and/or systems where any malfunction may pose the risk of injury or death. Again it is the criticality of function, alongside the quest for the car of the future, that makes ADAS so strategic for OEMs.

We like the SM approach – as we discuss later it is essential, in our view, to participate across the entire, emerging eco-system.

FOVIO technology journey

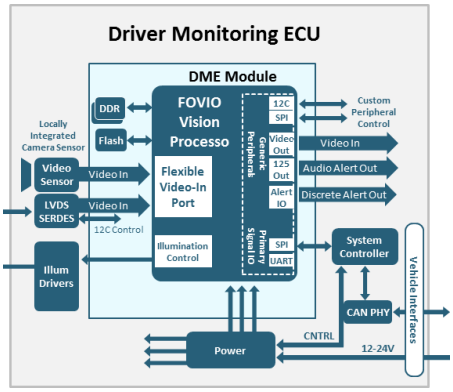
As we have seen SM's DMS solution, itself a sub-set of the broader ADAS capabilities of a vehicle, will inevitably be part of a broader array of outputs and applications within the automotive/dashboard stack. The DMS "module" must be able to integrate and efficiently interact with the other modules within the overall in-car electronics architecture. SM has named its core DMS engine FOVIO.

It is easier to scale on a standard silicon platform, offering as it does an optimised processor for owned algorithms, with more functionality and less latency and a lower power footprint. Software, on the other hand, tends to require bespoke validation by each individual technology integrator. While algorithms delivered as software might sell at say USD10-20m per DMS production unit, chips could potentially command a price per unit of USD 20-40 at a margin of around 70%. While the benefits of compression on silicon are undeniable there is a catch – it requires "significant" upfront investment (often referred to as non-recurring engineering ("NRE"))which can only really be recovered at high production volume. While Mobileye (within Intel) has deployed in silicon, Smart Eye has gone instead down the software route which, while less capital intensive, does not scale so well.

SM's preferred approach and strategic direction is standardisation on silicon, which it believes will be differentiated (versus SmartEye for one) and ultimately enable wider, and more efficient, market development. SM can offer OEM/Tier 1 customers a chip with common operating requirements, standard interface to video etc., which they can then tailor to suit their preferred configuration. While SM might aspire to achieve the logo quality of "Intel Inside" it is likely in truth to be less visible (white label).

The Fovio engine journey is from software (firmware) towards silicon based SoC (System on Chip) and SiP (System in Package).

Figure 18: DMS Electronic Control Unit (ECU)



Source: Company reports

Chicken and Egg – compression on silicon at minimal upfront cost

Since the cost of developing a full ASIC (application-specific integrated circuit) on silicon (an SoC) is high, SM has had to be nimble and innovative in terms of the test kits, both hardware and software, which it has been able to supply to OEMs and Tier 1s for their appraisal. It is something of a chicken and egg situation – how much compression cost (and risk) can SM absorb ahead of an actual production volume customer commitment? One solution that SM has identified is the use of field-programmable gate arrays (FPGAs) which can synthesise the functionality and interoperability of a more "integrated" chip while using standard, programmable logic buiding blocks and interconnects. These are essentially automotive grade "chips" but ones that can be configured after manufacturing, mitigating SM's platform development costs (for now).

Via FPGAs SM has thus been able to provide the testbed end-customers with a working prototype alongside the necessary camera/sensor hardware (PD-DMS) integrated into the dashboard/cluster. This is an essential part of any pre-qualification process. FPGAs historically had a reputation for relatively poor performance (slow speed etc.), certainly versus most ASIC designs, but significant advances by Xilinx and Altera (bought by Intel) mean FPGAs are now faster, at lower cost, and more flexible than ever. Xilinx arrays are already fully auto qualified and indeed Xilinx is second only to Mobileye in ADAS vision. SM can moderate its own prohibitive NRE costs by developing Fovio on affordable FPGAs, but potentially commission a silicon design when it has a volume Automotive commission to underwrite the required investment.

System in Package – for the aftermarket

A system in package or SiP combines multiple discrete "chip" components within a unified package. Among the primary benefits of such a design are the fact that the device requires few external components to be added in order for it to work. SM is

keen to have a "plug and play" style SiP design to address the various volume after-market opportunities it sees including Fleet telematics, insurance, taxis etc.

Cadillac – a world first for SM DMS

SM is justifiably proud to be able to claim the presence of a DMS solution that it designed (alongside its former exclusive partner Takata) on the world's first production "hands-free" (i.e., semi-autonomous, Level 2) car from a leading global OEM – widely believed to be the GM Cadillac CT6 (with Super Cruise). The vehicle will launch this quarter.

We have not actually driven the CT6 so must fall back on the commentary of someone who has, a contributing editor for Wired magazine:

"A gumdrop-sized infrared camera on the steering wheel (see Figure 19 below) tracks the position of your head. Look left, right, or down (at your phone, probably), for more than a few seconds and a green light bar in the steering wheel flashes. The higher the car's speed, the less time you have to look away. Keep ignoring the road, and you'll hear a chime, feel a buzz through the seat, and see that light turn red and start flashing. (You're colorblind? Different colors pulse at different tempos.) Refuse to respond at all and the car turns on its flashers, slows to a stop, and summons OnStar to make sure you haven't had a heart attack or something.

To ensure Super Cruise never faces obstacles it can't handle—intersections, pedestrians, traffic lights—Cadillac programmed it to only work on divided highways. And, it dispatched a crew to map every mile of those roads in the US and Canada.

That knowledge base offers two advantages. First, if your lane is about to end or you're approaching a toll booth, the car gives you plenty of time to assume control. Second, if the camera stops working or you go through a tunnel and the GPS loses its signal, the car can keep driving itself, using the map, its speed, and its steering angle to maintain its exact position ....."

(Source: https://www-wired-com.cdn.ampproject.org/c/s/www.wired.com/story/cadillac-super-cruise-self-driving-gm/amp)

Figure 19: GM Cadillac CT6 with Super Cruise (note camera circled in red)

Source: Wired.com

Cadillac's own online brochure explains the basic functionality and alert mechanism. The core FOVIO architecture has evolved somewhat in the last three years but this

DMS installation matters because it is a global first and we believe further validation of SM's Automotive potential.

Figure 20: First Alert (steering wheel flashes green)

Source: Cadillac.com INTRODUCING CADILLAC SUPER CRUISE™

First Alert

If the steering wheel light flashes green, the system has detected that the driver may not be paying sufficiently close attention.

The flashing will stop when the system detects that sufficiently close attention to the road has resumed.

Figure 21: Second Alert (steering wheel flashes red)

Source: Cadillac.com INTRODUCING CADILLAC SUPER CRUISE™

Second Alert

If the steering wheel light bar flashes green for too long, Super Cruise will alert the driver to take control of steering immediately by flashing the light bar red. Also, either beeps will sound or the Safety Alert Seat will vibrate. Take over steering, then Super Cruise will disengage. To re-engage Super Cruise, press the Super Cruise button on the steering wheel.

Figure 22: Third Alert (voice command)

Source: Cadillac.com INTRODUCING CADILLAC SUPER CRUISE™

Third Alert

If the steering wheel light bar flashes red for too long, a voice command will tell you to take control of the vehicle.

Take control of the steering immediately; Adaptive Cruise Control and Super Cruise will disengage.

A Driver Information Center (DIC) message will indicate that Super Cruise is locked out. Super Cruise cannot be re-engaged until the next ignition cycle.

Continued failure to take over steering will cause the vehicle to slow in your lane of travel and eventually brake to a stop and an OnStar advisor will be called. The brake lights and hazard warning flashers will come on.

Source: Company reports, Canaccord Genuity estimates

Figure 23: Tesla Model S crash

Source: NTSB Preliminary Report (HWY16FH018)

Tesla Motors

In our view, no automotive brand has attracted more attention in the last two years than Tesla. The charisma of its founder, alongside the disruptive, all electric drivetrain have captured the imaginations of consumers and investors alike such that its market cap (USD57bn) is now on a par with GM's and some 20% larger than Ford's – which is in so many ways remarkable, not least owing to the relatively fractional production volumes to date.

While we do not seek to pour scorn on all this euphoria it is fair to point out that Tesla's proposition remains very much work in progress. For example the first person to be killed in a Tesla operating in Autopilot mode was in Florida in May 2016. A combination of the misidentification of a white trailer as sky at an intersection by the vehicle's sensor-based vision system, alongside the fact the driver was distracted, meant that neither the autopilot nor driver braked before impact.

As a chastening prelude to the Frankfurt Motor Show the US National Transportation Safety Board published its report findings in relation to the crash.

Figure 24: NTSB report on "Driver Errors, Overreliance on Automation, Lack of Safeguards, Led to Fatal Tesla Crash"

NTSB Press Release

National Transportation Safety Board Office of Public Affairs

Driver Errors, Overreliance on Automation, Lack of Safeguards, Led to Fatal Tesla Crash

9/12/2017

Source: National Transportation Safety Board website

Key findings included that:

1. The Tesla's automated vehicle control system was not designed to, and could not, identify the truck crossing the Tesla's path or recognise the impending crash. Therefore, the system did not slow the car, the forward collision warning system did not provide an alert, and the automatic emergency braking did not activate.
2. The Tesla driver's pattern of use of the Autopilot system indicated an over-reliance on the automation and a lack of understanding of the system limitations.

Semicast Research's Principal Analyst (Colin Barnden) suggests "Had the limitations of Autopilot been acknowledged and the vehicle developed with the same DMS technology as the Cadillac CT6, then in my opinion this death could have been prevented." The specific reference to the Cadillac CT6 further reinforces the perception that DMS deployment (and implicitly SM DMS) in combination with other ADAS capabilities in the cockpit can reduce accidents and save lives.

Autoliv

Number one in Automotive safety

Let's talk about Autoliv (AL-NYSE | NR). In August 2017 SM announced a collaboration with Autoliv whereby both companies will work together "to deliver next generation Driver Monitoring ("DMS") for autonomous vehicles". Within the partnership Autoliv will serve as a primary integrator of SM technology and potentially overall system supplier to OEMs. Given Autoliv's relevant safety pedigree and sheer automotive supply chain presence we feel the importance of this relationship cannot be overstated. Autoliv Inc is the world's leading Tier 1 in automotive safety systems with c39% global market share and through its subsidiaries develops and manufactures equipment and solutions for all of the world's major motor OEMs. We summarise below some key safety product types alongside Autoliv's relevant global market share in the category:

Figure 25: Autoliv global market shares in key Safety product lines

Frontal Airbags	39%
Side Airbags	49%
Seatbelts	39%
Steering Wheels	32%
Brake Controls	5%
Active Safety	18%
Restraint Control	26%

Source: Autoliv corporate website

To put this in perspective Autoliv has supplied on average more than three airbags and seatbelts for every car produced globally in the last 10 years.

According to its corporate website Autoliv has more than 80 facilities in 27 countries and employs c70,000 people. In addition it runs technical centres in ten countries around the world, with 19 test tracks, more than any other automotive safety supplier. Its revenues in 2016 were over USD10bn. The company's shares are listed on the New York Stock Exchange (NYSE: ALV) and its Swedish Depository Receipts on Nasdaq Stockholm (ALIV sdb). It has a market cap of USD10.8bn.

Autoliv Capital Markets Day (September 14, 2017), Frankfurt

This event, coinciding as it did with the Frankfurt Motor Show, and so soon after the SM collaboration RNS , was to our mind significant on two fronts: the announcement by Autoliv of its own strategic review; and the multiple namechecks for Seeing Machines within its presentation deck.

Business splitting in two to capture Active Safety market growth potential

Figure 26: Strategic review of transition to stand alone entities

Source: Autoliv CMD, Frankfurt 2017

Should anyone be in any doubt about the dynamic shift taking place in the global automotive industry then they need look no further than the announcement by Jan Carlson (Chairman, President & CEO) that Autoliv is itself proposing to split into two separate entities: Passive Safety (comprising Airbags, Steering wheels and Seatbelts); and Electronics (automotive radars, cameras with driver assist systems, night vision and positioning systems, restraint control & sensing). Delphi Automotive (DLPH.K NYSE | NR) has announced a similar initiative to separate its Powertrain division from its self-driving Electronics activities.

Electronics growing 4x faster than Passive Safety

Notwithstanding the simplicity of the diagram above (Figure 26) the revenue division is far from even with Passive Safety accounting for 76% of 2016 revenues (and an even bigger slice of profits). This would suggest that while Passive Safety (think seatbelts) has to date been the core breadwinner, future enterprise growth will most likely be driven by Electronics. Indeed Autoliv estimates that the TAM for Electronics will more than double (USD40bn+) between now and 2025, while in the same timeframe the TAM for Passive Safety will grow by just 25%. Its overall growth targets for Electronics include sales of USD4bn in 2022 which implies a 2017-22 CAGR of 12%, but within this it expects Active Safety towards autonomous driving to contribute around half (USD2bn, at an implicit corresponding CAGR of 23%). Autoliv concludes that the "high pace of change and growth" within the Electronics division's marketplace (in particular with regard to Active Safety) "requires an agile innovation and partnering model as well as significant upfront investments".

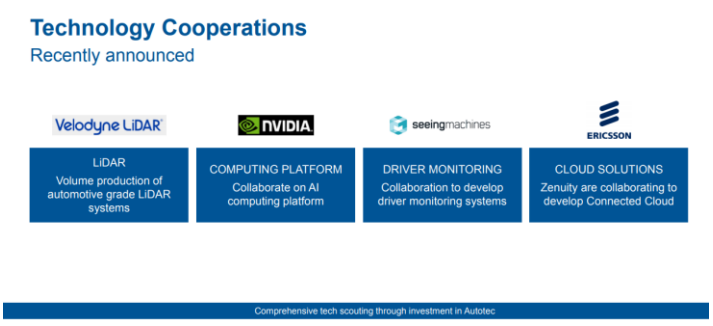
Seeing Machines referenced as part of future car ADAS eco-system

We counted at least four CMD presentation slides featuring the Seeing Machines nameplate, highlighting in our view not only the strategic importance of DMS within the ADAS application stack but more pertinently the specific pedigree and industry interest in the SM architecture. The slide below focuses upon DMS and the role the SM partnership can play in improving "speed to market", a key imperative for OEMs and Tier 1s alike. As a global first mover, with real-world aftermarket technology validation, millions of distraction/fatigue data observations and machine response data sets, and countless R&D engineer hours and dollars spent, SM can leverage its technology via industry leading partners to their mutual advantage. We expect Autoliv to have kissed a lot of frogs in its quest for "best in class accuracy and reliability" and its choice of SM is in our view a powerful reference.

Figure 27: DMS slide featuring Seeing Machines

Source: Autoliv CMD, Frankfurt 2017

Figure 28: Seeing Machines keeping good tech company



Source: Autoliv CMD, Frankfurt 2017

Being part of the evolving Autoliv eco-system (which includes Autoliv's Zenuity initiative with Volvo), alongside globally recognised tech brands such as Nvidia, suggests to us that SM is very much in the game.

Figure 29: SM part of eco-system

Source: Autoliv presentation – Capital Markets day 2017

Automotive Highlights - growing OEM/Tier1 Traction & Accelerating Commercial Activity

- **Cadillac** - Production launch of world's first DMS enabled Level 2 car by major US OEM, with SM believed to be already working upon a number of follow-up models
- **Key sample milestones achieved on FOVIO platform** (firmware) and SoC processor, which is key for scalable leadership in full-stack solutions. Vindicates decision to retain the Automotive business within the company to leverage a common platform strategy, cross-funding and leveraging synergies across multiple transport segments and indeed possible future i2 applications, as yet undefined.
- **Strong early customer traction** with a number of leading OEMs (in US, Europe, Japan and China). Technical evaluations and commercial discussions are "ongoing", with leading premium OEMs at RFQ/RFI and Japanese at RFI stage.
- **Strong and expanding roster of OEM paying customers** in R&D programmes – in US, Europe, Japan and China. Over 75 PC-DMS systems currently being leased out to over 15 OEMs.
- **Rapidly expanding eco-system of Tier 1 collaborations** (dissolution of Takata exclusivity) to pursue global OEM business opportunities, including new **Autoliv** partnership and others under NDA (but likely to include Continental, Delphi, Bosch etc.). Next gen concept cockpits, from both OEM (VW) and Tier 1 (Bosch), featuring SM's DMS, were showcased at CES (Consumer Electronics Show) 2017.

Figure 30: VW Next Gen Concept Cockpit

Source: Company reports

Figure 31: Bosch Next Gen Concept Cockpit

Source: Company reports

Levels of Driving Automation

It is important to understand the various Levels of Driving Automation, since this is persistently used terminology when discussing cars of the future. The Society of Automotive Engineers ("SAE") has defined a series of automation levels, mapping the evolutionary path from entirely human operation (Level 0) to machine-only operation (Level 5). Levels 1 to 3 involve vehicle/machine intelligence providing driver assistance but humans very much at the wheel.

Figure 32: SAE (J3016) Levels of Driving Automation

SAE level	Name	Narrative Definition	Execution of Steering and Acceleration/ Deceleration	*Monitoring* of Driving Environment	Fallback Performance of *Dynamic Driving Task*	System Capability *(Driving Modes)*
***Human driver* monitors the driving environment**						
0	No Automation	the full-time performance by the *human driver* of all aspects of the *dynamic driving task*, even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	the *driving mode*-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	the *driving mode*-specific execution by one or more driver assistance systems of both steering and acceleration/ deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	**System**	Human driver	Human driver	Some driving modes
***Automated driving system* ("system") monitors the driving environment**						
3	Conditional Automation	the *driving mode*-specific performance by an *automated driving system* of all aspects of the dynamic driving task with the expectation that the *human driver* will respond appropriately to a *request to intervene*	System	**System**	Human driver	Some driving modes
4	High Automation	the *driving mode*-specific performance by an automated driving system of all aspects of the *dynamic driving task*, even if a *human driver* does not respond appropriately to a *request to intervene*	System	System	**System**	Some driving modes
5	Full Automation	the full-time performance by an *automated driving system* of all aspects of the *dynamic driving task* under all roadway and environmental conditions that can be managed by a *human driver*	System	System	System	**All driving modes**

Source: SAE International (J3016): Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems

For a less clinical summary readers may prefer the definitions from an article which appeared in Wired magazine: "When does a car become truly autonomous? Levels of self-driving technology explained".

Level 0: No automation	Does what it says on the tin. The car is not automated in any way and relies on a human for all of the tasks.
Level 1: Driver assistance	Involves the human and a computer system working together on tasks, with the majority of the work being done by the person at the wheel.
Level 2: Partial automation	Here's where things start to get serious. The steering and speed of the vehicle are controlled by "one or more driver assistance systems" but a human controls the other elements of driving. (i.e., Tesla's Autopilot system)
Level 3: Partial automation	These vehicles are able to monitor the driving environment around them … make decisions for themselves. The human is on hand, mostly, to intervene if things go wrong.
Level 4: High automation	If something goes wrong the car can handle itself.
Level 5: Full automation	No human control is needed at all. Full automation and vehicles don't need any pedals, steering wheels, or controls for a human to take charge. Google, via its Waymo subsidiary, is working on producing this level of automation.

Relating all this to Seeing Machines and its role in the car we match the various outputs and capabilities of its technology architecture (today and in the future) with the levels of automation outlined above.

Figure 33: SM's application presence (now and in the future)

Driver Attention (ADAS – Level 1 to Level 3)
● Attention monitor – Eyes on/off road and Eyes open/closed ("Hands-Off")
● Intelligent driver context makes more effective ADAS (false alarms)
● Basic Drowsiness & Distraction detector
Driver State ("Co-pilot" operation – Level 2 to Level 4)
● Driver precision Eye Tracking/Gaze and Alertness monitor
● Safe transition/handover from the car to the driver – "Co-pilot"
● From "Hands-Off" to "Eyes-Off" to "Mind-Off" (Level 2 to Level 4)
● Driver drowsiness predictor and cognitive state
Beyond Driving – Information, Convenience (All Levels)
● Precision Eye Gaze for Smart displays – HUD displays and 3D displays
● Intuitive HMI interaction systems
● Driver/Occupant identification for personalisation and security
● Smart lighting, Smart safety systems (eg no child Inside)
Cabin Monitoring System (CMS) (Level 3 to Level 5)
● DMS forms basis of interior sensing platform – multiple uses
● Fusion of 2D and 3D camera sensors to monitor all occupants

Source: Company reports, Canaccord Genuity estimates

OFF-ROAD – Mining, Caterpillar

This is of course the original heritage commercial application for SM's technology, exhibiting the core capabilities which have persisted in later product iterations in newer transport verticals such as Fleet. The technology was validated in the demanding Mining industry where it delivered Fatigue, Distraction, Incapacitation detection for operators of heavy equipment. There was a clear need imperative here supporting its adoption:

- Intense shift schedules, remote locations (in regions such as Western Australia), long hours and repetitive tasks all leave mining equipment operators especially prone to fatigue danger
- Studies seen by SM show a fatigued worker is 65% more likely to make a mistake and in heavy industry, accidents (which are often fatal) cost millions of dollars (lost production, litigation, insurance etc.)
- SM's Driver Safety System offers best-in-class driver fatigue avoidance and ongoing management. SM's non-obtrusive, in-cab hardware, alerts operators the instant that they stop paying sufficient attention to vehicle operation

Caterpillar (CAT)

CAT one-time licence fee

In particular SM worked closely with CAT (Caterpillar), the global gorilla in the heavy mining vehicle market with around 75% market share. In 2005 SM transitioned from a direct-to-market mining business to a royalty business via a front-loaded licence fee payable by CAT of AUS$22m (accounted for as revenue) with scope for substantial ongoing royalty payments. Under the terms of the licence agreement SM receives a per-unit royalty fee on the sale of all CAT-branded Driver Safety System ("DSS") hardware sold by CAT via their global dealer network and on all DSS related monitoring and analytics services provided by CAT Safety Solutions on a per-truck, per-month basis.

Figure 34: CAT global market leader

Source: Company reports

Figure 35: CAT DSS in-cabin hardware

Source: Company reports

SM has to date sold only c5,000 systems to Caterpillar, which has itself supplied more than 50 mining customers around the world, achieving a high mid teens royalty on sales, but this is in truth only scratching the surface. SM booked just AUS$2.5m in FY17 from this high visibility relationship. Encouragingly CAT appears to be investing heavily in remote monitoring and cloud-based analytics with SM essentially providing the driver sensor, as well as collaborating closely on next gen products.

Further opportunities in construction related vehicles

Under the 2015 licensing agreement, CAT further expanded its sales channel coverage from mining to all types of construction vehicles. CAT has c10m vehicles in full operational use ("FOU") globally (of which around a third are construction related). There exists significant further off-road opportunities in Cement, Oil & Gas, Hazmats (dangerous goods), Forestry etc. There are also possibilities in new segments such as Marine. The much vaunted "Trump bump" uptick in US infrastructure spend may provide a further catalyst.

RAIL

In line with other transport verticals the target application is fatigue, distraction, incapacitation detection & monitoring for train and metro operators. According to the Rail Safety and Standards Board ("RSSB") fatigue has been cited as a "contributing factor" in over 20% of rail incidents (RSSB UK, 2015 Report). Recent serious accidents support this assertion:

- November 2016 – Croydon tram overturned taking a corner too fast, seven fatalities, 50 injured – some reports suggest the driver was texting (while the official report was less specific saying only that the driver "lost awareness")
- September 2016 – NJ Transit train failed to brake as it entered Terminus, one fatality, 114 injured – preliminary reports say driver was "incapacitated" (the Federal Railroad Association investigation found the operator to be suffering from Sleep Apnoea disorder)

Besides improving safety there is also a cost imperative supporting adoption of driver monitoring and intervention solutions, with many rail companies looking to move from two drivers to one, supported by such a system.

Figure 36: Progress Rail

Source: Caterpillar corporate website

The specific addressable market ("SAM") globally comprises around 200,000 locomotive appliances pulling 10 trillion freight tonne-kilometres and 3 trillion passenger-kilometres (Source: Progress Rail, 2016).

Progress Rail (itself a Caterpillar subsidiary) is one of the largest suppliers of railroad and transit system products worldwide and – following its acquisition of EMD (Electro-Motive Diesel) in 2010 - is also the world's largest builder of diesel-electric locomotives (across freight, intercity passenger, commuter, switching, industrial and mining applications).

SM has been engaged with Progress for some time, but contrary to the name moving forward in this transport vertical has been slow to date. Importantly SM has just announced a new extended Partnership Agreement, which provides an exclusive worldwide licence to Progress on a royalty basis (including guaranteed and escalating minimum sales and royalty commitments on hardware and monitoring services). This is similar in principle to the Caterpillar arrangement in Off-Road. Given the safety and cost imperatives supporting the adoption of SM technology, alongside enhanced customer traction, we see significant opportunities for deployment of both aftermarket product but also, in time, OEM embedded solutions.

AVIATION

The aviation vertical represents a significant future opportunity fairway for the application of SM's core technology platform, in both live operational and simulator/training environments. Fatigue, distraction, incapacitation are all critical factors both for pilots in the sky and air traffic control ("ATC") operators on the ground. According to the National Transportation Safety Board ("NTSB") pilot fatigue, for example, has been implicated in 20% of major civil aviation incidents.

Civil aviation growth will demand adoption of new technology

Civil aviation growth will require more pilots, more ATCs

Whatever the market need today, the situation is only likely to intensify in the years to come. For example 40,000 new commercial aircraft are forecast to enter service within the next 20 years versus 23,000 today (Source: Airbus Global Market Forecast 2016-2035). This will require the global airline industry to train and recruit 600,000 new pilots by 2035 (Source: Boeing, Current Market Outlook 2016). The demands and stresses placed upon Air Traffic Control will increase correspondingly, with a requirement to manage more aircraft operating in closer proximity. Boeing forecast that the number of global air traffic hubs will need to double over the next twenty years. This growth will possibly result in more accidents, in absolute terms, challenging public opinion. As in other commercial transport verticals the safety motivation is compounded by a desire by fleet operators to reduce cost. The potential shift from multi-crew to single crew, as airlines seek to improve operational efficiency, will require tougher pilot safety protocols, supplemented by ground based monitoring. A similar human capital efficiency agenda will also exist in the ATC operator network.

Figure 37: CAE full-flight simulator (FFS)

Source: CAE corporate website

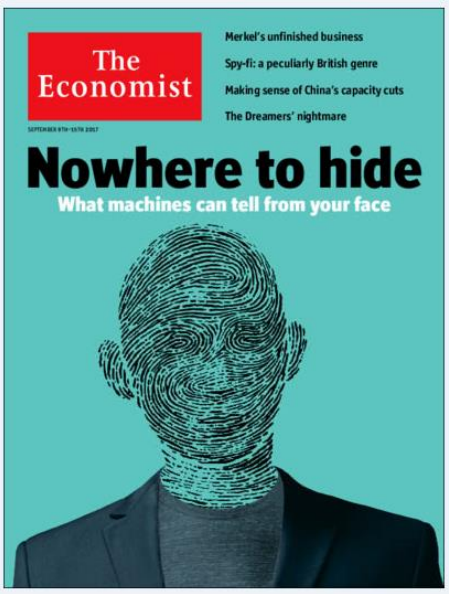
Training applications

Both airlines and aviation regulators, alongside the defence industry, are looking to leverage technology and innovation to deliver enhanced evidence based training and assessment capability. Applications could present in both new pilot/ATC operator schooling but also continuous proficiency testing and assessment programmes for already qualified personnel. Current testbeds for the application of SM technology in the Aviation vertical include: ground console, simulated cockpit and operational training solutions with a particular focus upon eye scan behaviour. For example SM is conducting a global first data collection exercise for helicopter pilot scan patterns and situational awareness in critical scenarios with a major player in helicopter operations.

First revenues emerging

After a period of extensive engagement, including POC research, with industry leading OEMs (such as Airbus), simulator providers (including CAE, L3 Technologies) and carriers (Emirates, Singapore etc.) this application vertical is emerging as a new income stream. FY17 recorded just AUS$0.4m but we anticipate this growing by a factor of 10 over the next three years.

Figure 38: Human Machine Interface (HMI)



Source: The Economist, September 9th 2017

EMERGING (i2)

SM is pursuing a dynamic growth strategy to leverage its technology stack to build multi-mode transport verticals in the near to medium-term, while creating innovative new AI businesses for the future. These emerging i2 (Innovate & Incubate) product paths including a wide array of application arenas from Health, Virtual Reality (VR and AR), Robotics, AI/Chips, Advertising, Training, Research and the Holy Grail (or not) of Empathy (sentient computers).

The AI market (TAM, not SAM) is forecast to be worth USD35bn by 2025 (Tractica report, 2017). One sub-set of AI is Face AI (see adjacent article from The Economist) – face AI is an extension of what SM believes it already does. Owing to the nature of machine-learning, all facial recognition/comprehension systems inevitably deal, to some degree at least, in probabilities (computed by algorithms).

The development (within Automotive) of the FOVIO platform and processor are central to SM's expansive ambition to deliver high performance, "full-stack" human factor solutions, at volume, enabling machines "to see, understand and assist people".

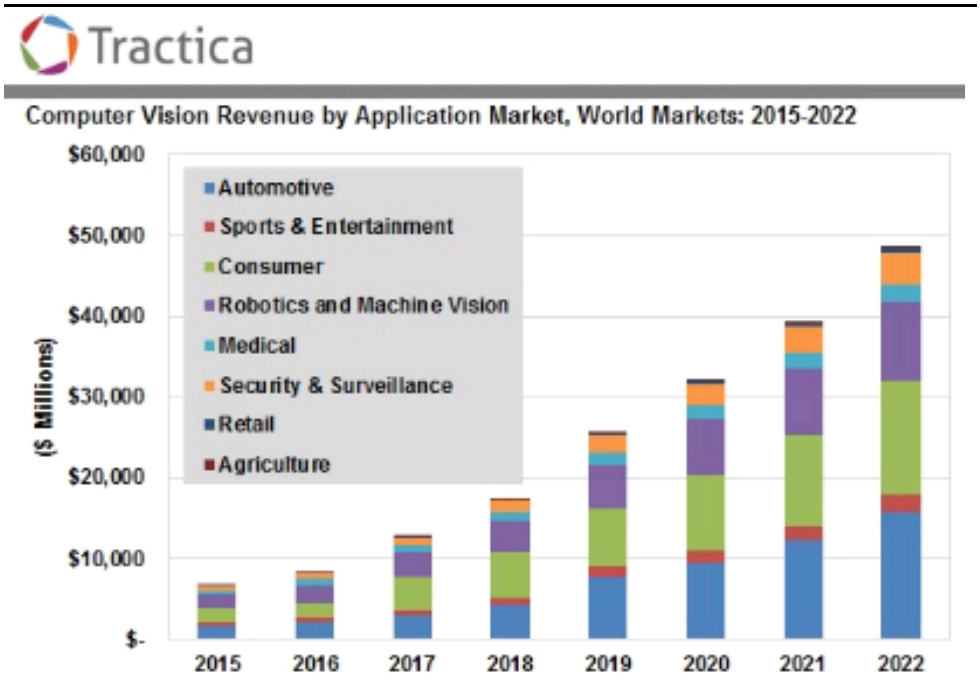
Plenty of optionality and future value drivers here but investor focus will likely remain nearer field for now.

Industry & Competitive Landscape

Industry Landscape

As a prelude the Computer Vision market (including both hardware & software) is forecast by Tractica to grow from just USD14m in 2014 to over USD33bn in 2020 and USD48.6bn by 2022. For reference Tractica's expertise domain includes Artificial Intelligence (AI), Robotics, User Interface Technologies, Wearable Devices and Digital Health.

Figure 39: Automotive applications to grow strongly within expanding Computer Vision market



Source: Tractica Computer Vision Technologies and Markets Report (June 2016)

While SM's current application focus is centred upon transport verticals (with Automotive being of especially high potential volume and value) its core machine vision "platform" could in time have scope across the application spectrum.

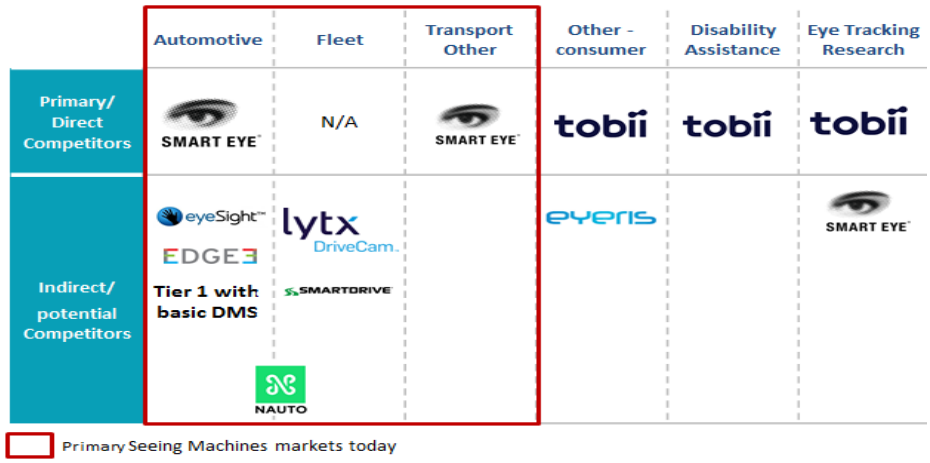
Competitive Landscape

ADAS market situation reminiscent of early days of internet

There are apparently over 50 eyetracking companies globally but of these only a small number can be seen as plausible, direct competition for SM. For example a number of eyetracking companies are working with just raw signals, data points in a clean, laboratory type environment. Beyond the base technology competence, many have focused on applications such as Gaming and Virtual Reality. As discussed earlier a VR headset represents a "clean" closed headbox environment versus the open headbox challenge presented by DMS type applications. That said, as with the broader ADAS space in general: "The market's current situation is reminiscent of the early days of the internet…with incumbents and new entrants vying for supremacy in a rapidly changing environment" (Source: Semicast Report). At this early stage in ADAS market development the only machine vision company that we believe can lay any kind of claim to pronounced application pre-eminence would be Mobileye (albeit within a different application i.e., vision outside of the car, nothing to do with eye-tracking). In the emerging eye-tracking application of DMS we believe it remains all to play for and no would-be player can have any complacency.

The table below captures some of the leading eye-tracking competition alongside their current application focus. There are of course bound to be other emerging names yet to enter the frame.

Figure 40: Industry Competitive Landscape



Source: Company reports, CG Research

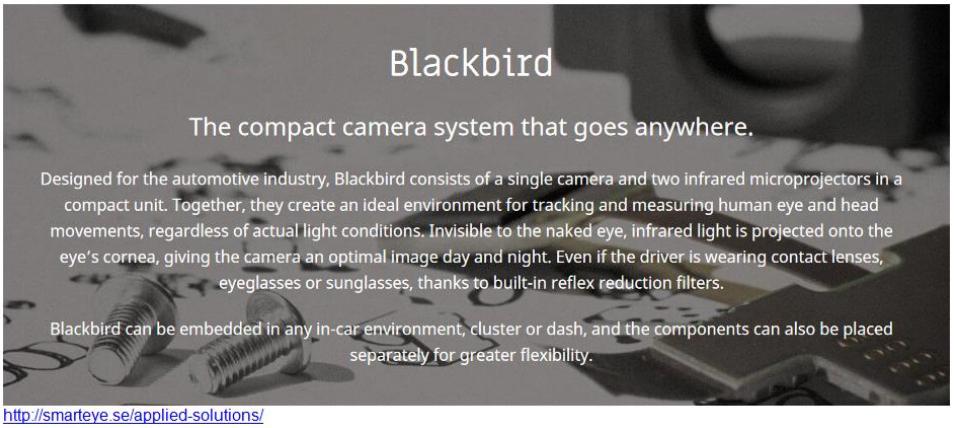
Swedish listed, with a market cap equivalent of £43.5m, **Smart Eye** is generally regarded as SM's most direct technology competitor. For example, alongside SM, it is deemed to be the only company which can cope with a similar spectrum of light frequencies. Automotive Tier 1 Delphi is known to be a Smart Eye licensee and it is also engaged to some degree with BMW, Audi, JLR, Volvo (but also NASA etc.) and is understandably proud to have been featured in the F 015 Luxury in Motion concept car from Mercedes.

Figure 41: Mercedes-Benz F 015 Luxury in Motion research car

Source: Mercedes-Benz.com

We were quite curious about Blackbird, which seems a very close analogue for SM's productised Automotive DMS solution, but we now believe this is more of a research product (similar to SM's own PC-DMS). Historically Smart Eye has been seen predominantly as a software only provider.

Figure 42: Smart Eye Blackbird – integrated solution for automotive applications



http://smarteye.se/applied-solutions/

Source: Company reports, Canaccord Genuity estimates

Smart Eye is clearly at the early stage of commercial development with FY16 revenues reported of just £3.6m (+8% yoy), on which it lost £1.1m (vs a loss of £0.4m prior year). All figures derived at SEK10.8 to £1 exchange rate. Sadly we can find no forecasts meaning the only valuation perspective we can derive is that the stock trades on c10.2x current year EV/Sales.

Also Swedish, **Tobii** is an altogether bigger enterprise with latest historic sales of £97m (FX as above) and a market cap of £382m. Around 70% of revenues are derived from its Dynavox division, the world's leading supplier of assistive technology for people with reduced ability to speak and communicate. Tobii's own corporate website carries a quotation from the Wall Street Journal: "Touch screens have removed some of the need for clunky hardware extras long associated with personal computing. But the biggest challenge to wean computers off the age-old keyboard and mouse may rest on the two sockets in our heads". While "at an early stage commercially" it has a growing technology focus upon Gaming (Tobii Eye chip), VR (closed head/eye box) and smartphones under their generically titled Tobii Tech division (which generated 310% of Group losses so clearly some significant investment here).

Since Tobii remains loss-making in FY18, and only becomes EBITDA positive in FY19, the available FY19e EV/EBITDA multiple of 23.8x is not necessarily representative. The EV/Sales multiples in FY18e and FY19e of 2.8x and 2.2x, while reliable, are predominantly driven by the low growth disability assistance revenues.

EDGE3

Thereafter things become truly enigmatic. Edge3 is, according to Bloomberg, a private company based in Tempe, Arizona. Besides working with companies including for example Microsoft, with a specific reference to "automotive-based gesture tracking" it appears to have a distinctly DMS application feel. We will seek to learn more.

EDGE3 Technologies, Inc. Key Developments

EDGE3 Technologies Announces a New IP Licensing Agreement with Microsoft Corp

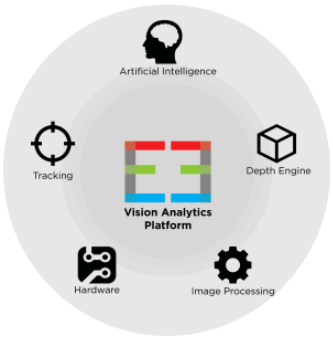
Aug 23 16

EDGE3 Technologies announced a new IP licensing agreement with Microsoft Corp. This relationship encompasses a broad range of technologies focused on gestural and movement tracking using time-of-flight (TOF) camera sensors, with use cases spanning automotive-based gesture tracking, virtual reality (VR) gaming, and augmented reality (AR).

Figure 43: DMS application focus

Source: Company reports

Figure 44: i2 applications



Source: Company reports

Recent M&A Landscape

Eye-tracking, gesture monitoring and machine vision generally have been a busy M&A space, with a high level of activity in the automotive field in particular. As discussed earlier the emerging ADAS, augmented driving, eco-system is attracting new entrants besides the established OEM and Tier 1 players. For example in November 2016 Samsung acquired Harmon (Kardon), which via Harmon's leading market share (13.7%) in in-car audio, secured Samsung a foothold position in Automotive for the first time. Samsung no doubt has half an eye on Apple (smartphones) and other TV panel Tier 2 players such as Panasonic (work with JLR for example) and LG (whose OLED-based dashboard display is likely to feature in the 2020 Mercedes S-class). Interestingly the premium German automotive players are believed likely to favour a 2-camera DMS system embedded discretely within such a TFT dash display.

Some recent transactions

Apple bought **SMI** (SensoMotoric Instruments) in June 2017 . SMI's technology is believed to offeroffers "foveated rendering," which tracks a user's gaze on a display and renders the focal area at full resolution while blurring out the extraneous areas, lessening processing loads significantly, a key enabler of high-resolution screens for VR and AR headsets.

Israeli-founded **Mobileye** was famously acquired by Intel in March 2017 for an eye-catching consideration. As touched upon earlier MobilEye handles vision outside of the car, while DMS and SM in particular of course have an inside vehicle focus. It is very much the valuation poster child for the ADAS arena (30x fwd revenue exit mutiple).

Lytx (formerly DriveCam) was acquired by PE firm GTCR in February 2016. Its application focus is identifying poor Fleet driving behaviour, combining video and sound with real-time driver feedback and coaching, resulting in reductions in collision-related costs and fuel consumption. Safety + cost resonates with SM 's Guardian.

Google acquired **Eyefluence**, an eye-tracking startup that uses eye movements to make interface selections, in October 2016.

Danish company, **The Eye Tribe**, was acquired by facebook Facebook Oculus in December 2016. Apparently its EyeProof platform will provide the data-driven Facebook-backed team an easier way to assess user behavior.

gestigon was acquired by French connected car component maker, Valeo, in March 2017. Its focus is upon body and gesture recognition technology for the inside of vehicles – alongside a broader platform claim to be a leader in HMI (human machine interface) solutions – clear DMS adjacency given driver distraction references.

In aggregate these transactions offer no kind of valuation yardstick but they do suggest that eye-tracking, machine vision and ADAS (including DMS) are a busy investment arena. Mobileye does at least demonstrate the outer reaches of what can be achieved in terms of equity value by those companies that can successfully deploy their technology and dominate their chosen application (assuming it has scale).

Challenges/Risks

"the Torotrak factor"

Many of the challenges faced by Seeing Machines and investors are in fact quite generic. AIM has always substantially over indexed on novel technology companies, addressing diverse end markets, which have, for a whole array of reasons, failed successfully to cross the commercial viability threshold. We could cite some names in the unfortunate Hall of Fame but it is unnecessary since our point is more universal – but given the automotive tech subject matter we shall refer to it as "the Torotrak factor". Emerging technology companies fail for a myriad of reasons:

1. Technology

- Simply didn't work
- Nice to have, but no need to have
- Great technology does not always find a real-world, deliverable application
- Too expensive to deploy
- Technology rapidly superseded by something better
- Competition in general

Technology "moat"

While not yet operating at great scale, SM has proven real-world commercial applications in the field (Fleet Guardian in particular) and has already partially monetised its core technology in the Off-Road mining sphere (Caterpillar licence). Further validations are emerging in Rail (Progress), Aviation etc. Management is well aware of what it describes as "the rapid democratisation of technology", but without complacency believes it has established a decent technology "moat". This includes patent portfolio protection – under constant, active review, with 13 patent families at various stages of prosecution, with patents granted in six patent families to date. A patent family refers to patents granted in multiple markets for the same innovation. Patents relate to applications such as stereoscopic camera based driver monitoring (achieving a 3-D effect). That said it is hard to patent algorithms (only two years' life say) - as one senior executive modestly remarked "it's just maths". The company also has a number of trademarks. However it is ultimately the marriage of software and hardware, alongside substantial application empirical data, which represent the biggest barrier to competition in our view (cf Ocado). This would consume substantial time (including time to market) and money for any new, direct competitor. Automotive design cycles are long so OEMs need to prioritise their ADAS suppliers now and first movers such as SM should, we believe, have an advantage. The performance quality bar is high in Automotive (with DMS likely to be rated at Automotive Safety Integrity Level D) – should SM succeed in being deployed by multiple OEMs this should further elevate SM above the emerging competitor set.

2. Time

- J-curve moment is often, if not always, fraught with risk - in particular with regard to time versus available funds - the trough phase often inexorably lengthens
- Investor long-term rhetoric overtaken by impatience and fund performance imperative for nearfield capital gains
- End customer inertia - disruptive technology may be painful and expensive to integrate. Small companies are usually in a hurry while large enterprises are often not.

Time risk largely historic

SM has certainly suffered from extended timelines and slow commercial technology conversion but revenue growth is accelerating and the application discovery phase is largely behind it. The automotive landscape at this time is however highly dynamic with the roadmaps for many OEMs likely to change quite radically over the next 5-10 years. Likewise SM's product roadmap is evolving all the time, notwithstanding the fact that once installed (both aftermarket in Fleet for example, but also embedded in cars) they may effectively then be plumbed in for a number of years.

3. Funding

- Simply ran out of money
- Show me the money. There is always inevitably a narrower pool of willing investors (essentially risk capital providers) ahead of demonstrable (sustainably profitable) commercial success
- Typically a lack of operating cash flow to mitigate net cash burn - the old maxim that in oil & gas it's always good to have some P with your E can just as easily be applied to drug discovery for example
- Always hard for emerging tech companies to get strategically funded - more hand to mouth, which can often become the primary price motivator (cf biotech)

Funding a key preoccupation

Funding continues to be a core preoccupation for SM, albeit the company has successfully financed its development (including significant R&D investment) to this date. Since (and including) the IPO in 2005 the company has raised a total of c£53m gross (in 10 tranches). Its most recent raises include £15m gross in Jan 2017 and £6.7m in March 2016. The company has flagged its desire to raise a more strategic amount (Aus$50m, £29.4m) " in due course" (FY17 Finals Outlook statement) to accelerate its development over the next two years. Elsewhere SM has been very nimble in making use of Australian government contributions/grants/tax breaks where available to gain significant leverage on its own-funded development spend.

4. Diversification

- Small companies vs large corporate customers is always a difficult dynamic, with small companies typically lacking the diversity of potential end-market adopters to hedge risk
- Single target application - all eggs in one basket

Significant diversification

SM is certainly addressing big customers but its multiple engagements (OEMs, Tier 1s, Fleet operators etc., some of which SM have been able formally to announce) in different (and uncorrelated) end-market verticals represent a significant mitigation of single, big customer (or sector) risk. The company feels it has been underweight Japan but is now very much addressing this. SM's target applications further present a spread of nearfield, medium-term and long duration opportunities. It is however possible to argue that SM is overly diverse geographically given its modest size (with for example a CEO based out of California and a tech hub in Canberra, Australia). The company would no doubt argue the importance of being close to customers, including of course the Silicon Valley set.

5. Manufacturing (tech hardware)

- Often a challenge, especially when conducted in-house
- Acceptable asset/platform leverage is hard to achieve at low volume and finished goods are often difficult to deliver at market required average selling price ("ASP")
- Technology simply did not scale, manufacturing ramp-up was undeliverable

Cabin hardware cost falling

As discussed in the section on Fleet delivering aftermarket cabin hardware at a commercially viable cost (both from a customer, but also SM profitability perspective) has been a challenge but one which we believe SM is making great strides towards overcoming. This is not just about the cheaper Fleet 2.0 box (and the new, just-in-time Hong Kong manufacturing partner) but also the various initiatives progressively to share/transfer the installation cost burden with distributors and fleet operators (under the SaaS rental model). As the company migrates from aftermarket only applications towards more "embedded" new build OEM solutions (automotive in particular), the hardware cost factor will moderate.

6. Management

– Entrepreneurial management are often bold evangelists but lack the strategic focus and operational bandwidth to execute well

Experienced Board

Recent senior appointments including Mike McAuliffe as CEO and Nick DiFiore (ex-Visteon Corp, Xilinx, Ford Motor) to run Automotive add experience and commercial expertise to the established SM team to help execute on its strategic plan. McAuliffe's background in PE-backed businesses brings a clarity of perspective when considering the core generic risks: tech risk, market risk, scaling risk. Besides meeting the entire executive (led by Exec Chmn Ken Kroeger) and non-exec team we had the privilege of engaging with a number of the customer programme engineers during our February visit to SM's Canberra HQ. From a human capital management perspective retention of key personnel is, we believe, an important issue (especially should the likes of Apple etc. come knocking). SM has, to date ,been successful in sustaining and indeed growing the core engineering and sales & marketing resource, ahead of meaningful profitability.

7. Luck

– Bad luck is generally hard to mitigate for a small cap

Beyond Takata

It was in many respects unfortunate that SM's exclusive Tier 1 partner in Automotive, Takata, ran into trouble (May 2015 driver airbag recall) for reasons entirely unrelated to SM's product area. But extrication from exclusivity with Takata has in truth freed up SM now to work with multiple Tier 1 partners and thus a wider opportunity set of champions for its Fovio technology.

Conclusion

Persistently critical factors are time and money (certainly ahead of positive free cash flow), alongside operational competence, and generally prove key determinants of success or failure for any emerging technology enterprise. In the case of SM, as we have tried to articulate above, we think it is relatively well positioned versus some, if not all, of the generic risks and challenges most often faced by emerging tech companies. This matters when considering an appropriate discount rate.

Key Financials

SM's financial challenge, as is very generic for emerging technology companies, is how does it fund the years of cash burn ahead of meaningful revenue generation and operating cash flow breakeven? We will first consider the operating cost cash burn, funding dimension (the trough phase of the classic J-curve) and then explore the forward revenue growth and profit profile.

Cash burn vs Funding

Operating cost base

payroll a major cost

While achieving breakeven at a gross level (just) in FY17 on revenues of Aus$13.6m, pre-tax losses amounted to Aus$28.5m relecting the fact that most of the cost base is accounted for as indirect operating expenses which, on an underlying basis, rose to Aus$37.1m (from Aus$32.5m prior year). Most of this is payroll (short Aus$3m per month) but itemises as R&D expense, Customer Support & Marketing etc. SM has c180 staff, of which around 100 are engineers, including a highly skilled R&D team which it needs to retain. Of this 100 around 70 are focused specifically upon the Automotive (Fovio) project. Given the global ambitions and destination spectrum of customers the travel budget alone must, we imagine, be quite high. As a credit against this underlying P&L cost base the company has been successful in making use of R&D tax incentives (43.5 cents/Aus$1 cash rebate) and other grants (i.e., Advanced Safe Truck Concept programme) where available. The tax incentive alone was worth Aus$9.2m in FY17. As revenues accelerate this cash rebate will cease to be available but grants continue to be secured (for example the new CAN-Drive semi-autonomous driving programme in FY18). Finally Aus$1.8m accrued in "Corporate services expenses" in FY17, reflecting payments related to the shift to non-exclusivity with Takata, will not recur in future years.

Funding strategy

Net cash at FY17 year-end was slightly ahead of market expectations at Aus$22m, reflecting, in part at least, the early CAT repayment of USD3.5m of the Off-Road one-off licence receivable. Run-down of inventory of first gen Fleet boxes was also completed by period-end. Now on our numbers the net free cash outflows, in each of the next two years, exceeds the cash resources of the company, assuming no cost base reduction – free cash breakeven will not be reached before FY20e. Of the "up to Aus$50m" cited we believe around a third is necessary to sustain the current cost base and revenue capacity of the business.

Incremental capital hunger

The balance sheet constraint already exists before one considers the incremental capital hunger deriving from the "strategic aspiration of SM to seize first mover advantage and scale its Fleet and Auto businesses to market leading positions through continued investment in its Advanced Platform Technology, Product Roadmap, Machine Learning Infrastructure ("MLI") and global support infrastructure for its expanding customer base". The company is seeking "to invest cAUS$50m over next 2 years to accelerate platform and product development and build infrastructure capacity for sharp ramp up in global customer programmes". In short the Company is seeking to access cAus$50m to fund an additional Aus$15-20m spend in each of FY18 and FY19 (of which we assume around a third would be capitalised versus customer specific development programmes). Where will the money come from?

Historically the company would have tapped up investors on an ad hoc, hand-to-mouth basis – since the IPO in 2005 it has raised a total of Aus$91.9m (£51.3m) gross in nine shapes, albeit two were follow-on open offers to existing holders and one was a strategic placing of Aus$12.8m in March 2016 to VS International Ventures (a

Malaysian contract manufacturer). It is now, in our view quite rightly, seeking something more strategic:

Figure 45: Strategic financing options

> Given the strong growth and traction the Company is delivering in the fast-growing markets it is participating in, the Company remains committed to continued investment in its products and business development while being mindful of its balance sheet position. As such the Company is engaged in exploratory discussions with a number of potential strategic partners with regards to various potential partnerships and possible strategic investment in the business while also discussing its investment plans and financing requirements with its major shareholders, potential financial investors and other capital sources in due course.

Source: 2017 Final Results Outlook statement from FY17 financial results

Possible funding solutions

- **Strategic partners**
  - The "strategic partners" might include both industrial and/or purely financial type entities. A banner industry name may potentially offer further validation of SM's technology, albeit other shareholders may be reluctant to cede too much effective control to such a partner without a suitable premium being paid. In 2016 SM explored the possibility of spinning out Automotive (Fovio) as a means of funding the rump application verticals but, in consultation with its shareholders, elected to retain full control. Retaining all the IP within the parent makes strong strategic sense in our view, avoiding the subsequent potential for IP contamination and patent territory disputes. Any acquiror of SM will most likely prefer a clean ownership position in relation to the intangible assets of the business. Furthermore an integrated approach (i.e., retaining Automotive) allows the company to leverage a common platform strategy, funding resource and other synergies across the various transport and emerging i2 segments. Granting exclusive licences in specific application verticals, as a partial funding strategy (such as the Caterpillar Off-Road arrangement), while not necessarily ideal, does not especially compromise this approach.
- **R&D collaborations**
  - Partner paid "R&D collaborations" could potentially mitigate a portion of SM's internal funding requirements without the dilution of fresh equity.
- **Vanilla institutional equity fundraising**
  - For any equity fundraise to be considered "strategic" we would argue that the full capital requirement be delivered in one clip, allowing SM to focus upon capturing its first mover advantage, without the persistent and time consuming refinancing issue. Versus what has gone before this may prove a big ask, but as we come on to discuss in the section on valuation, addressing the funding position – in one strategic hit - with potentially material equity dilution, may in fact be more than compensated for in the rating via a significantly reduced discount rate and accelerated customer revenue development. Strike price discovery, as ever, would be contingent on the extent to which existing holders are prepared to stand their corner or indeed oversubscribe.

Revenues growing

Revenue growth, assuming it generates profits which themselves convert to cash, is of course the best mitigant to cash burn.

Sales revenue of AUS$13.6m in FY17 was more than double that of the prior year (+122%) on a like-for-like basis (excluding the one-off licence fee to CAT and adjusting FY16 DSS hardware sales as if a royalty was earned on the gross sale instead). Total

revenue (including Other Income) was AUS$23.2m reflecting a high dosage period for government R&D tax grants and research programme grants, as discussed above.

The reported FY17 sales performance improvement does in fact understate the period exit growth rate with revenue momentum actually accelerating. Fleet sales are more than 250% ahead of the prior year and Automotive 50% higher.

Fleet Guardian market adoption is benefiting from the strategic transition to a SaaS model under multi-year contracts – as discussed in the section on Fleet revenues here are comprised of upfront hardware sales plus monthly recurring revenue ("MRR") from monitoring and analytics services. Cash recovery of the hardware component is over the life of the contract (typically 3yrs+). Growth in Total Contract Value (+360% YOY, versus reported revenues +275%) is an important forward revenue growth indicator. Under the SaaS model both revenue visibility and quality are progressively improving.

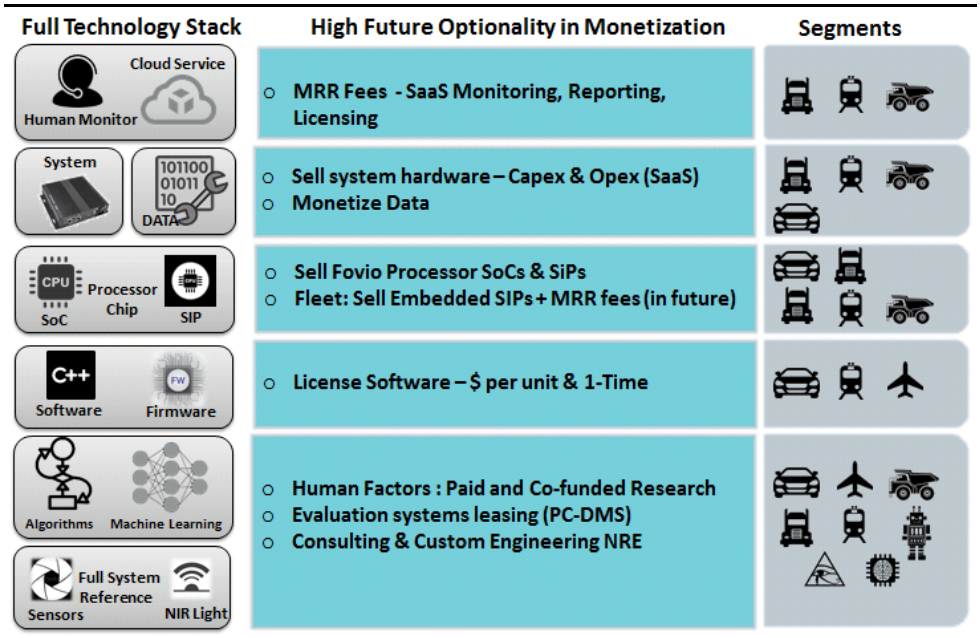
Automotive (Fovio), while still at the pre-commercialisation revenue stage, is benefiting from development programme payments and funded engagements with leading OEMs and Tier 1s, as they evaluate integration of SM's DMS technology into new model programmes.

EBITDA breakeven by end FY19

Overall base case revenues are growing - driven by strong growth in Fleet, growing Automotive and Off-Road (Caterpillar royalties growing month on month) and first meaningful revenues emerging from Aviation and now Rail – such that the company is now guiding towards sales of around Aus$78-88m in FY19 and we expect EBITDA breakeven during FY20, with an attractive EBITDA and Free Cash Flow margin profile accelerating from that point on as the ensuing gross profit expansion increasingly flows to the bottom line". Owing to its more advanced stage of commercial evolution Fleet growth remains the key to achieving positive operating cash flow for the first time.

Outside of the next two years, which are a critical phase given the balance sheet constraints (ahead of any additional strategic funding - the Aus$50m), SM's business model and evolving full technology stack offers both existing and potential future income streams in multiple application segments.

Figure 46: Multiple forward revenue streams



Source: Seeing Machines Corporate Presentation, September 2017

Gross margin

The bottom line gearing to revenue growth is considerable given the growing, and ultimately high, targeted gross margin profile. We are anticipating a gross margin of c37% in FY18 with the company guiding towards gross margin expansion of c5-10% per annum for the next several years as the business scales. Management believes a long-term gross margin of 60-70% should be achievable in line with other comparable SaaS and high-performance processor (i.e., Fovio platform) IP business models. Businesses exhibiting such a margin structure, when allied to revenue growth, invariably command a high stock market rating. The Board's desire to invest an additional "up to Aus$50m over the next two years to accelerate platform and product development and build an infrastructure capacity to support the sharp ramp in global customer programs" is all about expediting revenue growth and gross margin expansion towards target, and in particular getting their core technology platform (Fovio) deliverable in scalable form. Furthermore, as discussed when considering the competition, this is an arms race "with incumbents and new entrants vying for supremacy in a rapidly changing environment" (Source: Semicast Report).

Figure 47: P&L

Y/E 30Jun (Aus $m)	2016	2017	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e
Revenue											
Fleet (Guardian)	3.3	9.1	26.0	55.0	85.0	120.0	155.0	182.0	202.0	215.0	220.0
	-	*174%*	*186%*	*112%*	*55%*	*41%*	*29%*	*17%*	*11%*	*6%*	*2%*
Automotive	1.1	1.6	7.4	13.0	24.0	40.0	65.0	100.0	140.0	170.0	190.0
	-	*49%*	*357%*	*76%*	*85%*	*67%*	*63%*	*54%*	*40%*	*21%*	*12%*
Off-road (Caterpillar)	0.7	2.5	3.6	6.0	8.5	11.0	13.0	14.0	14.5	15.0	15.0
- One-off licence fee (Caterpillar)	21.9										
- DSS/Mining	6.6										
	-	*242%*	*45%*	*67%*	*42%*	*29%*	*18%*	*8%*	*4%*	*3%*	*0%*
Aviation	0.0	0.4	0.7	2.5	4.0	6.0	8.6	11.0	12.5	14.0	15.1
	-	-	*103%*	*238%*	*60%*	*50%*	*43%*	*28%*	*14%*	*12%*	*8%*
Rail	0.0	0.0	1.5	3.0	7.0	11.0	13.0	15.0	17.0	19.0	20.3
	-	-	-	*107%*	*133%*	*57%*	*18%*	*15%*	*13%*	*12%*	*7%*
TOTAL	***33.6***	***13.6***	***39.2***	***79.5***	***128.5***	***188.0***	***254.6***	***322.0***	***386.0***	***433.0***	***460.5***
- growth rate	*161%*	*-60%*	*189%*	*103%*	*62%*	*46%*	*35%*	*26%*	*20%*	*12%*	*6%*
Cost of Sales	*-6.3*	*-13.5*	*-24.7*	*-44.5*	*-65.5*	*-86.5*	*-109.5*	*-128.8*	*-142.8*	*-151.6*	*-161.2*
Gross Profit	***27.3***	***0.1***	***14.5***	***35.0***	***63.0***	***101.5***	***145.1***	***193.2***	***243.2***	***281.5***	***299.3***
- gross mgn	*81.3%*	*0.6%*	*37.0%*	*44.0%*	*49.0%*	*54.0%*	*57.0%*	*60.0%*	*63.0%*	*65.0%*	*65.0%*
- gross mgn (underlying)	*-22.0%*	*0.6%*	*37.0%*	*44.0%*	*49.0%*	*54.0%*	*57.0%*	*60.0%*	*63.0%*	*65.0%*	*65.0%*
Other income (R&D tax incentive from Aus government)	2.6	9.2	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Other (grants etc, incl. co-op research centre)			1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Net loss on FX	-0.2	-1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Finance income	1.4	0.5	0.2	0.0	0.0	0.3	1.0	2.0	3.3	4.8	6.5
R&D expenses	-9.8	-15.9	-17.0	-18.0	-18.0	-18.0	-18.0	-18.0	-18.0	-18.0	-18.0
Customer Support & Marketing	-10.5	-11.4	-12.0	-12.0	-12.0	-12.0	-12.0	-12.0	-12.0	-12.0	-12.0
Occupancy & Facilities	-2.3	-3.2	-4.0	-4.5	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0
Corporate Services	-4.8	-6.6	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0	-7.0
Other expenses	-5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-28.9	-28.6	-38.4	-40.1	-41.1	-40.7	-40.1	-39.1	-37.8	-36.2	-34.5
PBT	**-1.6**	**-28.5**	**-23.9**	**-5.2**	**21.9**	**60.8**	**105.1**	**154.1**	**205.4**	**245.2**	**264.7**
- growth rate	*-87%*	*1687%*	*-16%*	*-78%*	*-524%*	*178%*	*73%*	*47%*	*33%*	*19%*	*8%*
Income tax	*0.0*	*-1.1*	*-1.5*	*-2.0*	*-7.7*	*-21.3*	*-36.8*	*-53.9*	*-71.9*	*-85.8*	*-92.7*
- tax rate (%)	*-1.5%*	*-4.0%*	*-6.3%*	*-38.7%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*
(Loss)/Profit fom discontinued Operatoins (post-tax)	0.0										
PAT	**-1.6**	**-29.7**	**-25.4**	**-7.2**	**14.2**	**39.5**	**68.3**	**100.2**	**133.5**	**159.4**	**172.1**
Non-controlling interests	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exchange differences on translation of foreign ops	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAT (reported)	-2.0	-29.7	-25.5	-7.2	14.2	39.5	68.3	100.1	133.5	159.4	172.1
EPS (basic reported)	-0.20	-2.42	-1.71	-0.48	0.96	2.66	4.59	6.74	8.98	10.72	11.58
EPS (basic diluted)	-0.20	-2.42	-1.63	-0.45	0.88	2.39	4.04	5.81	7.59	8.89	9.41
EPS (Adj)	-3.10	-2.42	-1.71	-0.48	0.96	2.66	4.59	6.74	8.98	10.72	11.58
EPS (Adj diluted)	-2.43	-2.42	-1.63	-0.45	0.88	2.39	4.04	5.81	7.59	8.89	9.41
DPS (cents)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of shares in issue (m)											
- weighted average basic	981.7	1227.5	1486.5	1486.5	1486.5	1486.5	1486.5	1486.5	1486.5	1486.5	1486.5
- weighted average diluted	981.7	1227.5	1560.8	1592.0	1623.8	1656.3	1689.4	1723.2	1757.7	1792.8	1828.7

Source: Company report, Canaccord Genuity estimates

Figure 48: Cash flow (revised P&L)

Y/E 30Jun (Aus $m)	2016	2017	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e
NOPAT	-2.1	-29.1	-24.6	-5.8	14.9	40.0	68.3	99.5	132.0	156.9	168.5
Depreciation & Amortisation	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
EBITDA	**-3.0**	**-29.0**	**-24.1**	**-5.2**	**21.9**	**60.5**	**104.1**	**152.2**	**202.1**	**240.4**	**258.2**
Net capex	-2.5	-2.2	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5	-3.5
Capitalised R&D spend	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in w/cap	-4.5	7.5	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating cash flow	**-9.7**	**-23.8**	**-22.9**	**-5.7**	**18.4**	**57.0**	**100.6**	**148.7**	**198.6**	**236.9**	**254.7**
Interest	1.4	0.5	0.2	0.1	0.0	0.3	1.0	2.0	3.3	4.8	6.5
Tax	0.0	-1.1	-1.5	-2.0	-7.7	-21.3	-36.8	-53.9	-71.9	-85.8	-92.7
Free cash flow	**-8.4**	**-24.5**	**-24.2**	**-7.6**	**10.7**	**36.0**	**64.8**	**96.7**	**130.0**	**155.9**	**168.6**
FCF per share (cents)	*-0.9*	*-2.0*	*-1.6*	*-0.5*	*0.7*	*2.2*	*3.8*	*5.6*	*7.4*	*8.7*	*9.2*
Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Share issues/other (net)	13.1	27.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net new borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acquisitions/Disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	-1.7	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash flow	**3.0**	**5.2**	**-24.2**	**-7.6**	**10.7**	**36.0**	**64.8**	**96.7**	**130.0**	**155.9**	**168.6**
Opening net cash/(debt)	14.2	15.6	19.5	-4.7	-12.3	-1.6	34.5	99.3	195.9	325.9	481.8
FX effect	-1.7	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing net cash/(debt)	15.6	19.5	-4.7	-12.3	-1.6	34.5	99.3	195.9	325.9	481.8	650.4
Net cash per share (cents)	*1.6*	*1.6*	*-0.3*	*-0.8*	*-0.1*	*2.3*	*6.7*	*13.2*	*21.9*	*32.4*	*43.8*

Source: Company report, Canaccord Genuity estimates

Figure 49: Balance Sheet

Y/E 30Jun (Aus $m)	2016	2017	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e
Non-current assets											
Property, plant & equipment (PPE)	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Intangible assets	4.4	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Non-current financial assets	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Trade & other receivables	6.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	11.5	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Current assets											
Cash & equivalents	*16.9*	*21.4*	*-4.7*	*-12.3*	*-1.6*	*34.5*	*99.3*	*195.9*	*325.9*	*481.8*	*650.4*
Trade & other receivables	*6.8*	*7.6*	*11.4*	*17.1*	*25.6*	*38.4*	*57.6*	*86.4*	*129.5*	*194.3*	*291.5*
Inventories	*8.4*	*0.7*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*
Current financial assets	*0.2*	*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Current tax	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
R&D refundable tax offset receivable	0.0	4.7	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Other current assets	0.7	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	33.1	38.6	16.6	14.8	34.0	82.8	166.8	292.3	465.5	686.1	951.9
Total assets	**44.7**	**46.7**	**24.8**	**22.9**	**42.2**	**91.0**	**175.0**	**300.4**	**473.6**	**694.3**	**960.0**
LIABILITIES											
Current liabilities											
Trade & other payables	1.8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Provisions	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Deferred revenue	0.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Income tax payable	0.1	0.0	-1.5	-2.0	-7.7	-21.3	-36.8	-53.9	-71.9	-85.8	-92.7
	4.2	9.1	7.6	7.1	1.4	-12.2	-27.7	-44.9	-62.8	-76.7	-83.6
Net current assets	**28.9**	**29.5**	**9.1**	**7.7**	**32.6**	**95.1**	**194.5**	**337.1**	**528.3**	**762.9**	**1035.4**
Non-current liabilities											
Provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long-term borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total liabilities	**4.2**	**9.1**	**7.6**	**7.1**	**1.5**	**-12.2**	**-27.6**	**-44.8**	**-62.8**	**-76.7**	**-83.5**
NET ASSETS	**40.4**	**37.6**	**17.2**	**15.8**	**40.7**	**103.2**	**202.6**	**345.2**	**536.4**	**771.0**	**1043.6**
NAV per share	*4.1*	*3.1*	*1.2*	*1.1*	*2.7*	*6.9*	*13.6*	*23.2*	*36.1*	*51.9*	*70.2*
Shareholders' equity											
Share capital	70.6	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5
Treasury shares	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2	-1.2
Accumulated losses	-29.7	-59.4	-84.9	-92.1	-77.9	-38.4	29.9	130.0	263.5	422.9	595.0
Other reserves	0.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Non-controlling interest											
Total equity	**40.4**	**37.6**	**17.2**	**15.8**	**40.7**	**103.2**	**202.6**	**345.2**	**536.4**	**771.0**	**1043.6**
Invested capital	24.9	18.1	21.9	28.1	42.3	68.7	103.4	149.3	210.4	289.2	393.1

Source: Company report, Canaccord Genuity estimates

Valuation

Ascertaining fair value for an emerging technology company is challenging for many reasons, not least the need to determine an appropriate discount rate, since most, if not all, of any free cash flow generation will typically occur outside of the conventional forecast window.

The discount rate is an imperfect, composite proxy for an array of factors:

- Perceived binary risk in relation to whether technology will find a real-world, deliverable, commercial application
- Difficulty in forecasting growth rates (for example revenues, especially when steep, from a low current base)
- And timelines – windows & horizons in which numbers can be delivered
- Cost of capital (again hard to assess for current loss-makers)
- Perceived funding issues (including, for example, the prospect of equity dilution)

We prefer to use one discount rate to capture all of the above and then try to appraise whether the implied rate is appropriate. Cutting to the chase, on our detailed forecasts (assuming 0% terminal growth from Year 10), a 46% discount rate must be applied to justify the current share price.

Figure 50: Current share price implies 46% discount rate (and calendar FY20 EV/Sales and EV/EBITDA multiples of just 0.4x and 2.1x, respectively)

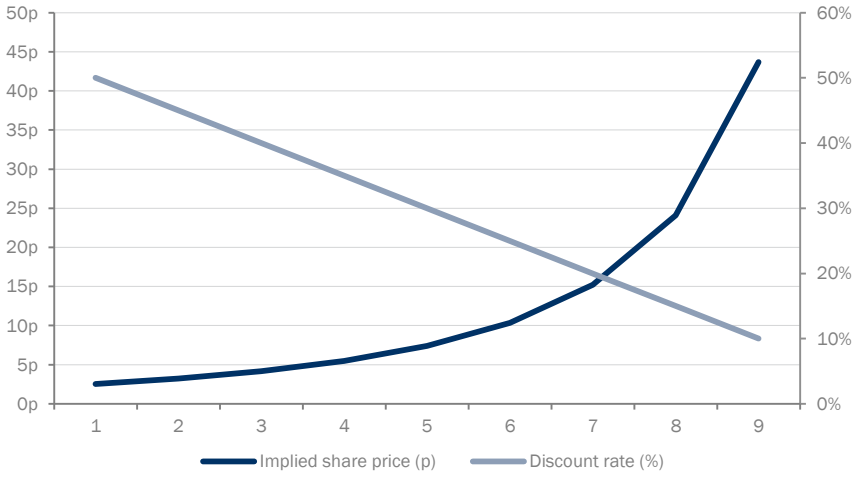
	1 2018e	2 2019e	3 2020e	4 2021e	5 2022e	6 2023e	7 2024e	8 2025e	9 2026e	10 2027e	Residual value
EV	79.77	87.34	76.60	40.57	-24.22	-120.89	-250.90	-406.79	-575.38	-748.53	
EV/Sales	2.0	1.1	0.6	0.2	-0.1	-0.4	-0.6	-0.9	-1.2	-1.7	
Sales	39	80	129	188	255	322	386	433	460	446	
EBITDA	**-24.1**	**-5.2**	**21.9**	**60.5**	**104.1**	**152.2**	**202.1**	**240.4**	**258.2**	**257.6**	
Free cashflow	**-24.2**	**-7.6**	**10.7**	**36.0**	**64.8**	**96.7**	**130.0**	**155.9**	**168.6**	**173.2**	**173.2**
Discount factor	1.5	1.5	2.1	3.1	4.5	6.5	9.5	13.8	20.1	29.2	42.5
Discounted cash flows	-16.7	-5.2	5.1	11.7	14.5	14.8	13.7	11.3	8.4	5.9	8.9
NPV	**72**					**Terminal growth rate**		0%			
						FX rate (AUS$:GBP)		1.70			
Implied discount rate	**46%**										
Average net cash	5										
Equity value (AUS$)	**77**										
Number of shares (m)	1,486.5										
Equity value per share (c)	**5.21c**										
Equity value per share (p)	**3.1p**										

Source: Company report, Canaccord Genuity estimates

The graphic below attempts to show the exponential gearing of NPV (DCF derived fair value) to declining discount rates such that:

- 46% discount (0% terminal growth from Yr10) = 1x current share price
- 33% discount (0% terminal growth from Yr10) = 2x current share price
- 27% discount (0% terminal growth from Yr10) = 3x current share price
- 23% discount (0% terminal growth from Yr10) = 4x current share price

Figure 51: Implied share price versus discount rate (10yr DCF, 0% terminal growth Yr10)



Source: Canaccord Genuity estimates

Perceived binary risk overstated

Do we consider a 46% discount rate reasonable?

In a word - no. As we have discussed at length, SM's technology has found commercial applications in multiple end-verticals, and thus perceptions of binary adoption risk may well be overstated via the discount rate in our view. The difficulty in forecasting (both growth rates and timelines) are undeniable and will certainly inform the investor's required rate of return, but we would point out that a clear and accelerating growth trajectory is already emerging, with the prospect of EBITDA breakeven in FY19e (to June) which is actually quite nearfield and well within the normal forecast window. It is hard to estimate an appropriate cost of capital for SM (CAPM would suggest c7% but this is not a meaningful figure in isolation) and thus we prefer to consider our aggregate discount rate (and scrupulously do not describe this rate as a cost of capital). All of which brings us to the Funding issue, which we believe is a primary driver of the depressed share price and implicit high discount rate being applied.

Equity dilution fears are primary discount rate driver

It is important to point out that, while at current levels of projected cash burn, the balance sheet position is tight – and subject to delivery of current forecasts – it is far from a distressed position. Furthermore the company has made public its desire to access a further Aus$50m, by whatever means as discussed, and thus both the current balance sheet constraint and additional funding requirement are, we would argue, already fully reflected in the rating.

Figure 52: Implied value using DCF (10yr)

DCF (10yr): no new money	Terminal growth			
Discount rate (%)	0%	3%	5%	
10%	43.7	55.1	70.2	16.6p
15%	**24.1**	26.9	29.8	
20%	**15.2**	**16.2**	17.1	
25%	10.4	**10.8**	11.1	
30%	7.4	7.6	7.7	
35%	5.5	5.6	5.7	
40%	4.2	4.2	4.3	

Source: Canaccord Genuity estimates

DCF valuation assuming no new money

We apply a spectrum of discount rates and terminal growth rate assumptions to our 10-year forecasts, assessing fair value in a 15-25% discount rate range (and 0-3% terminal growth rates) from which we derive a blended fair value of 16.1p (c19.2% equivalent discount rate).

DCF valuation assuming straight equity raise of Aus$50m

For illustration purposes only, acknowledging that any additional funding may be derived in a variety of ways, we have modelled for a straight raise today of Aus$50m at a simple array of prices (2p, 3p, 4p). Should the funding requirement be addressed we would argue that the discount rate should reduce fairly significantly, given our assessment that this is the primary share price depressant. Post funding resolution it is, in our view, reasonable to assume the rate falling from our "no new money" scenario (18.6%) to somewhere in the 10-15% bracket. When issuing new shares at around or more than the current share price the reduced discount rate which can be

Figure 53: Implied value using DCF (10yr) considering AUS$50m equity investment at different prices

DCF (10yr): AUS$50m raise @2p	Terminal growth			
Discount rate (%)	0%	3%	5%	
10%	**22.9**	28.7	36.3	16.9p
15%	**13.1**	**14.5**	15.9	
20%	8.6	9.1	11.5	
25%	6.2	6.4	6.6	
30%	4.7	4.8	4.9	
35%	3.7	3.8	3.8	
40%	3.1	3.1	3.1	

DCF (10yr): AUS$50m raise @3p	Terminal growth			
Discount rate (%)	0%	3%	5%	
10%	**27.5**	34.4	43.5	20.2p
15%	**15.7**	**17.4**	19.1	
20%	10.3	10.9	11.5	
25%	7.4	7.7	7.9	
30%	5.7	5.8	5.9	
35%	4.5	4.6	4.6	
40%	3.7	3.7	3.8	

DCF (10yr): AUS$50m raise @4p	Terminal growth			
Discount rate (%)	0%	3%	5%	
10%	**30.5**	38.1	48.3	22.4p
15%	**17.4**	**19.3**	21.2	
20%	11.5	12.1	12.7	
25%	8.3	8.5	8.7	
30%	6.3	6.4	6.5	
35%	5.0	5.1	5.1	
40%	4.1	4.2	4.2	

Source: Canaccord Genuity estimates

applied post-raise more than eliminates the dilution. A fundraising at 3p delivers fair value of 20.2p, while 4p suggests 22.4p (i.e., fair value enhancement, versus "no new money" base case, of 21.7% and 34.9%, respectively). More importantly and perhaps surprisingly however, under the more typical "fundraising at a discount" scenario (Aus$50m at 2p, c35% discount) fair value of 16.9p is also fractionally ahead of the "no new money" position. In other words, executing the desired fundraising, will enhance fair value, since the lower discount rate thereafter will more than compensate for the dilution effect of the new shares.

Discounted forward multiple

As can be seen from Figure 52, the current share price implies an FY20e EV/Sales of just 0.3x and EV/EBITDA of 1.2x which looks extraordinary, when one considers SM's expanding, and ultimately high, gross margin profile and organic revenue and EBITDA growth trajectory. We have modelled for a range of revenue multiples in

Figure 54: Implied value using discounted forward Revenue multiples

FY19	Revenue multiple			
Discount rate (%)	1.0x	3.0x	5.0x	
10%	**2.5**	8.2	14.0	10.2
15%	**2.8**	**7.9**	13.4	
20%	2.3	7.6	12.8	
25%	2.2	7.3	12.3	
30%	2.1	7.0	11.8	
35%	2.0	6.7	11.4	
40%	2.0	6.5	11.0	

FY20	Revenue multiple			
Discount rate (%)	1.0x	3.0x	5.0x	
10%	**4.2**	12.7	21.1	14.1
15%	**3.9**	**11.6**	19.3	
20%	3.6	10.6	17.7	
25%	3.3	9.8	16.3	
30%	3.0	9.1	15.1	
35%	2.8	8.4	14.0	
40%	2.6	7.8	13.0	

FY21	Revenue multiple			
Discount rate (%)	1.0x	3.0x	5.0x	
10%	**6.7**	17.9	29.1	18.0
15%	**5.9**	**15.7**	25.5	
20%	5.2	13.8	22.4	
25%	4.6	12.2	19.9	
30%	4.1	10.9	17.6	
35%	3.6	9.7	15.8	
40%	3.3	8.7	14.1	

Source: , Canaccord Genuity estimates

future years, discounted back to NPV under our "no new money" discount rates. Given SM's targeted 60-70% long-run gross margin target, alongside persistent revenue growth (more than tenfold in the next 3 years alone) we believe a revenue multiple in the 3 to 5 times range should be readily achievable. With revenues in FY19e not fully evolved (fair value 10.2p) we consider FY20e also. Our discounted blended revenue multiple (15-25% discount applied to EV/Sales of 3-5x) suggests fair value of 12.2p (i.e., FY20e implied value). Rolling forward to incorporate a more representative FY21e revenue platform, on the same basis, suggests 14.1p.

Valuation conclusion

Aggregating the various scenarios above delivers a blended notional fair value of 16.1p. This price today would leave the shares trading on a calendar FY20e EV/Sales of 2.3x, EV/EBITDA of 11.5x and a PER of 19.7x. This looks reasonable in our view and certainly far more plausible than the respective multiples (0.4x, 2.1x and 4.1x) on a comparable basis at the current share price.

Figure 55: Aggregate Valuation Summary

DCF Fair value (no fundraise)	16.6p
Aggregate DCF Fair value with AUS$50m equity fundraise (@ 2p, 3p, 4p)	19.8p
Blended DCF Fair value (A)	18.2p
Aggregate Revenue Multiple value (no fundraise) (B)	14.1p
Blended average Fair value = (A+B)/2	**16.1p**

Source: Company reports, Canaccord Genuity estimates

We do not ascribe value for the intangible assets

Other fair price factors to consider might include the value of the intangible assets (IP etc.) but one can argue that this is best reflected in the commercial revenues they generate and thus are already captured within the rating scenarios above. That said, while it is hard to value in isolation, the Fovio "platform" technology might well be of specifc additional worth to a corporate acquiror. As discussed, the strategic decision to retain all the IP within the company allows SM's shareholders to capture any premium which might be ascribed to the intangibles. We would also highlight the fact that over the past 15 years SM has invested/spent (own-funded + grants) over USD100m and while some treasure will inevitably have been lost this equates to around double the current market cap.

All considered we set a rounded down target price of 15p, which specifically takes account of the dilution effects which would inevitably derive from a notional Aus$50m equity raise.

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Investment Recommendation

Date and time of first dissemination: October 18, 2017, 02:21 ET

Date and time of production: October 18, 2017, 02:21 ET

Target Price / Valuation Methodology:

Seeing Machines - M2Z

Our valuation methodology is derived from a blended average of:

- our average DCF (10yr free cashflow forecasts) considered under an array of assumed discount rates and terminal growth rates, including the possibility of a notional Aus$50m equity fundraising (at a spectrum of strike prices) - all of which suggests fair value of 18.2p

- and blended discounted forward (FY19e and FY21e) EV/Sales multiples (with no fundraise) - which suggests 14.1p.

The combined average is 16.1p which we round down to 15p in the interests of simplicity.

Risks to achieving Target Price / Valuation:

Seeing Machines - M2Z

Key risks include:

- Fleet growth does not translate to revenues/profits as quickly as forecast
- Automotive DMS is not widely adopted by OEM and Tier 1 appraisal customers
- Other transport verticals do not grow
- Competitors generally and rival technologies in particular
- Balance sheet issues are not addressed and thus rating remains depressed (or worse)
- Retaining key personnel

Distribution of Ratings:

Global Stock Ratings (as of 10/18/17)

Rating	Coverage Universe		IB Clients
	#	%	%
Buy	562	60.95%	39.32%
Hold	251	27.22%	23.51%
Sell	22	2.39%	18.18%
Speculative Buy	87	9.44%	68.97%
	922*	100.0%	

*Total includes stocks that are Under Review

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