Sensera Ltd.

Capturing the huge opportunity in MEMS and RTLS

Sensera Limited (ASX:SE1) is an ASX-listed technology company with two distinct revenue pillars; Micro Devices (Micro Electro Mechanical Systems or MEMS) and location-aware wireless networked sensors and systems that comprise solutions for the Internet of Things (IoT).

High-end Medical, Industrial, Mining and Agricultural applications

Sensera IoT solutions provides wireless, sensor-based, location and situational awareness solutions (so-called Real-Time Location Systems or RTLS), for industries such as Mining and Agriculture, that require real-time tracking of people and assets. E.g. for collision avoidance in Mining.

Micro devices, also known as Micro Electro Mechanical Systems (MEMS), are essentially miniaturized mechanical and electro-mechanical components and can be used to measure a wide range of variables, such as pressure, vibration, acceleration, temperatures etc., and set off a signal to another system in response to that measurement. MEMS are broadly used in many industries, including Healthcare, Automotive, Military and Consumer Electronics. SE1 currently supplies into the Medical, Industrial and Military verticals but is looking to expand into other industries as well.

High growth, high margins in booming markets

The markets SE1 is targeting with its IoT solutions are experiencing strong growth due to fast uptake of IoT applications in a wide range of industries worldwide. The company can address these opportunities through a highly flexible manufacturing setup with third parties.

Additionally, due to ongoing miniaturization, further refinement and increasing functionalities, MEMS are finding their way into more and more products, including Medical Devices. Given that SE1 owns proprietary MEMS production facilities and focuses on high end applications, the company is able to generate very attractive gross margins, i.e. approaching 65% longer term. We expect SE1 to exhibit very rapid growth in the next three to five years, with the company expected to become EBITDA positive towards the end of FY19.

Starting coverage with a BUY rating price target of A$ 0.50

We have valued SE1 using a peer group comparison and a Discounted Cashflow calculation. Our blended price target is A$ 0.50 per share. Given the substantial upside from the current share price, we start our coverage of SE1 with a BUY recommendation. We believe the current production ramp up for customers in the Medical, Military and Agricultural industries will be a major driver of the share price near term.

			FY17A	FY18E	FY19E	FY20E
Number of shares (m)	159.8	Revenues	1.2	6.9	11.2	16.5
Number of shares FD (m)	167.3	EBITDA	(5.4)	(7.1)	(2.7)	0.5
Market capitalisation (A$ m)	38.4	NPAT	(5.3)	(7.4)	(2.9)	0.1
Free Float (%)	100%	EPS FD	(0.057)	(0.05)	(0.01)	0.00
12 month high/low A$	0.43 - 0.23	EV/EBITDA	nm	nm	nm	nm
Average daily volume (k)	292	EV/Sales	23.6	4.2	2.6	1.7

Company report

Sensera Limited

(ASX:SE1)

Technology Hardware & Equipment

Australia

Risk: High

Sensera Limited (ASX:SE1) designs, develops and manufactures Micro Devices (MEMS) for Medical and Industrial applications. Through recently acquired Nanotron, the company provides tracking solutions for the Agriculture, Mining and Healthcare verticals. The company's MEMS business is based in Boston (USA), while Nanotron is based in Germany.

BUY

Current price: A$ 0.24

Price target: A$ 0.50

28 March 2018

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Sensera

FY-end June (US$ M)

Profit & Loss account	2017A	2018E	2019E	2020E
Revenues	1.2	6.9	11.2	16.5
EBITDA	-5.4	-7.1	-2.7	0.5
EBITDA %	*-441%*	*-104%*	*-24%*	*3%*
Depreciation & Amortisation	-0.1	-0.3	-0.2	-0.3
EBIT	-5.3	-7.4	-2.9	0.2
EBIT %	*-437%*	*-108%*	*-26%*	*1%*
Interest income & expense net	0.0	0.0	0.0	0.0
Profit before Tax	**-5.3**	**-7.4**	**-2.9**	**0.2**
Taxes	0.0	0.0	0.0	-0.1
Net earnings	**-5.3**	**-7.4**	**-2.9**	**0.2**
Ordinary shares outstanding	94.0	159.8	194.4	194.4
Fully diluted # shares	94.0	167.3	201.9	201.9
Earnings per share	**-0.06**	**-0.05**	**-0.01**	**0.00**
Earnings per share fully diluted	-0.06	-0.04	-0.01	0.00

Cash Flow Statement	2017A	2018E	2019E	2020E
Receipts from customers	0.5	5.8	4.5	9.9
Payments to suppliers and empl.	-5.0	-11.5	-5.6	-8.3
Interest Received	0.0	0.1	0.1	0.1
Interest Paid	0.0	0.0	0.0	0.0
Cash flow from operations	**-4.5**	**-5.7**	**-1.1**	**1.7**
Net cash flow from investments	-0.9	-6.0	-1.3	-1.6
Cash flow from financing	9.1	8.4	7.5	0.0
Impact of FX translation	0.3	0.0	0.0	0.0
Net cash flow	**4.0**	**-3.3**	**5.1**	**0.1**

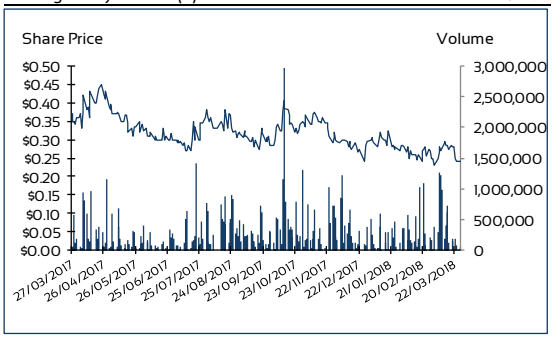
Balance Sheet	2017A	2018E	2019E	2020E
Current assets				
Cash and marketable securities	4.0	0.8	5.9	6.0
Accounts receivable	0.1	1.4	1.6	2.3
Inventories	0.4	0.8	0.7	0.9
Other current assets	0.1	0.4	0.4	0.4
Total current assets	**4.6**	**3.4**	**8.6**	**9.5**
Fixed assets				
Net property, plant & equipment	0.8	2.1	3.2	4.4
Goodwill	0.0	0.0	0.0	0.0
Other intangible assets	0.0	8.3	8.3	8.3
Total fixed assets	**0.8**	**10.5**	**11.5**	**12.8**
Total assets	**5.4**	**13.9**	**20.1**	**22.3**
Current liabilities				
Short-term debt	0.0	0.0	0.0	0.0
Accounts payable	0.4	0.8	0.8	0.9
Deferred revenue	0.0	0.5	0.5	0.5
Provisions	0.0	0.6	0.6	0.6
Other current liabilities	0.0	0.0	0.0	0.0
Total current liabilities	**0.4**	**1.9**	**1.9**	**2.0**
Long-term Debt	0.0	0.0	0.0	0.0
Deferred revenue	0.0	0.6	0.6	0.6
Other Liabilities	0.0	0.0	0.0	0.0
Total group equity	**5.0**	**11.3**	**17.5**	**19.7**
Total liabilities and equity	**5.4**	**13.9**	**20.1**	**22.3**

Valuation	2017A	2018E	2019E	2020E
Relative valuation				
P/E (reported)	-3.3	-4.0	-12.5	226.4
P/B	3.5	2.7	2.1	1.9
P/CF	-3.9	-5.4	-34.3	22.1
Price to sales	14.2	4.5	3.3	2.3
EV / sales	23.6	4.2	2.6	1.7
EV / EBITDA	nm	nm	nm	nm
Dividend yield	0%	0%	0%	0%
EV / Common equity	5.7	2.5	1.6	1.5
Discounted Cash Flow				
Assumptions				
Long term interest rate				2.5%
Risk premium				5.5%
Marginal tax rate				27.5%
Long term growth				2%
Leveraged Beta				1.25
Implied WACC				*9.4%*
TMT Analytics applied WACC				12.4%
DCF fair value per share (A$)				0.47

Profitability ratios	2017A	2018E	2019E	2020E
Return on Equity	-106.4%	-65.0%	-16.4%	0.8%
Return on Assets	-98.5%	-53.1%	-14.3%	0.7%
Return on Invested Capital	-106.4%	-65.0%	-16.4%	0.8%
EBITDA margins	nm	nm	-23.8%	3.2%
EBIT margins	nm	nm	-25.9%	1.1%
Net margins	nm	nm	-25.6%	1.0%

Financial Strength	2017A	2018E	2019E	2020E
Net debt (cash)	-4.0	-0.8	-5.9	-6.0
Net debt / Equity	-0.8	-0.1	-0.3	-0.3
Net debt / EBITDA	0.8	0.1	2.2	-11.3
Interest coverage	nm	nm	nm	nm

Capital Structure	
Ordinary shares	159.8
Performance shares	-
Options and warrants (m)	8
Fully diluted	167
Market capitalisation (A$ m)	38.4
Market cap. fully diluted (A$ m)	40.2
Free float %	100%
12 month high/low A$	0.43 - 0.23
Average daily volume (k)	292.0



Source: Factset, TMT Analytics

Two pillars: Location-aware IoT solutions and Micro Devices

Sensera Limited (ASX:SEI) is focused on two categories of technical expertise; Sensera IoT provides Location-aware solutions for Internet of Things (IoT) applications, e.g. to track people and assets in mines, while Sensera Microdevices designs and manufactures high-end micro devices and sensors, also known as MEMS, or Micro Electromechanical Systems. MEMS are broadly used in many industries, including Healthcare, Automotive and Consumer Electronics.

Sensera IoT accounts for approximately 60% of SEI's revenues with Sensera Micro Devices accounting for the balance.

Sensera IoT: Sensor-based Location and Situation Awareness

Sensera IoT provides wireless, sensor-based, location and situational awareness solutions for various industry verticals, including mining and live-stock farming, that require real-time tracking of people and assets.

Accident reduction and production improvements in Mining vertical

For instance, mines are highly hazardous work places, prone to accidents, both above and below ground. By tracking vehicles and staff through tag monitoring, SEI's solution can assist with collision avoidance of mining vehicles and maintaining exclusion zones for personnel around moving vehicles (Figure 1). This reduces fatalities due to mining accidents and reduces costly negative effects of accidents, such as equipment downtime. Production improvements, such as more efficient transportation and equipment scheduling as well as energy saving are also facilitated by RTLS and are a key selling point for SEI.

FIGURE 1: PERSONNEL EXCLUSION ZONES IN MINING ENABLED BY

Source: Sensera

Livestock tracking increases farm ROI

Another key area for Sensera IoT is Livestock Health, which involves tracking herds of farm animals and combining location data with feeding data and animal health measurements to optimize animal health and milk production, while simultaneously minimizing animal medication. SEI's solutions help increase production and lower costs for livestock farms.

Other segments are currently smaller but have high potential

Other target areas for Sensera IoT are Transportation, Healthcare and Manufacturing even though these market segments are currently relatively small in terms of revenues. One constant in all of these applications is that the Sensera IOT solution matches best in highly complex and challenging environments.

In the Transportation segment, the company has installations tracking goods and containers in a variety of situations like seaports and airports. It has also leveraged mining expertise in railway safety deployments.

Healthcare solutions include tracking and movement analysis of patients, medical staff and medical equipment across hospital grounds, i.e. indoors and outdoors. Accurate tracking enables a number of things, including improved patient flow, earlier patient mobility post-surgery, optimal utilization of medical equipment and beds etc., which all result in higher ROI for hospitals.

In the Manufacturing vertical, SEI's workflow, staff and asset tracking solutions are mostly geared to mid and low volume production environments, e.g. of high-value equipment with a substantial customization element, e.g. semiconductor manufacturing equipment. These production environments often require specific tooling where visualization of the workflow and whereabouts of specific tools reduce manufacturing errors and improve product quality.

In our view, the Healthcare segment in particular has high commercial potential for SEI, given the rapid proliferation of technology (MedTech) in medical facilities' workflows globally.

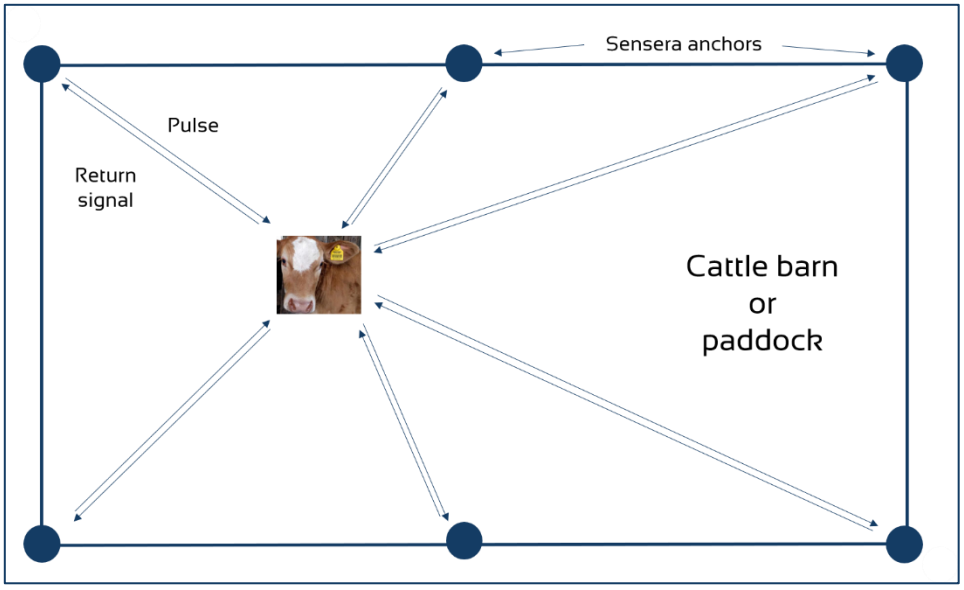
IoT expertise acquired through recent Nanotron acquisition

Sensera gained its expertise around sensor-based location and situation awareness through the acquisition of Germany-based Nanotron Technologies GmbH in August 2017. Nanotron has developed and patented several technologies that focus on accurately locating RFID tags through pulse ranging and measuring differences in signal arrival times at different receivers. This data is used to triangulate the location of tags, e.g. a cow's ear tag in a barn.

How it works: Time Difference of Arrival (TDOA) and Ranging

In Figure 2 a Sensera anchor, which comprises both a transmitter and a receiver (a transceiver) emits a signal that is received and returned by a tag, e.g. to range cattle ear tags. The time of flight of that signal can be used to determine the distance between the tag and that transceiver. By combining time of flight data from a minimum of two, but usually three or more signals, the location of a tag can be accurately determined.

FIGURE 2: LOCATING TAGS BY MEASURING TIME DIFFERENCE OF ARRIVAL



Source: Sensera, TMT Analytics

Alternatively, in the Time Difference of Arrival (TDOA) technique, the tag itself emits a signal that is received by multiple anchors. The time it takes a tag signal to reach an individual anchor is used to estimate the approximate distance between that anchor and the tag. Combining such data from multiple anchors will yield the approximate location of the tag in a 2D setting.

Various set ups and technologies available to suit different situations

Depending on customer-specific applications, their geographic location, the size of their facilities etc, Nanotron can offer different set ups of its systems. The example in Figure 2 is a fixed set up in which the anchors are positioned in fixed places, in this case a cattle barn or paddock. All location positioning is done from fixed positions.

Ranging in dynamic situations without anchors

However, in dynamic situations, such as mines with moving vehicles and personnel, collision avoidance and exclusion zones need to take these dynamic elements into account. In other words, there are no fixed anchors and tag positions are relative to one-another, i.e. they change continuously.

In these situations, Nanotron's Swarm Bee product can be used to provide relative positioning and location awareness through collaboration by deploying a swarm of location chips in the field. The Swarm Bee chips can provide relative location awareness by exchanging data packets and measuring the time-of-flight of these packages between each other, for instance between tags on mining vehicles approaching each other. The chips in these tags are programmed to automatically detect other tags and range with each other.

Different radio technologies for different applications

Nanotron's most recent chip is designed to manage its proprietary Chirp based RF solutions. The company has determined that it does not need to develop industry standard RF chips and uses merchant silicon for other solutions like Ultra-Wideband (UWB). It applies its embedded software IP and application knowhow to build these solutions.

The company has announced industry-standard UWB (Ultra-Wide Band) solutions. UWB is highly accurate, but its pulse signals can only be used for short range transmission, i.e. up to 20 meters, of small data packets. These solutions require far more anchors than a Chirp base solution. Chirp signals are used to measure the range and velocity of moving objects and can be used for longer range detection, i.e. between 10 and 500 meters.

Nanotron's key building blocks are proprietary technology

One of SEI's key strengths is the proprietary nature of its technology, i.e. Nanotron has developed and patented the key building blocks of its product offering in-house.

FIGURE 3: NANOTRON'S NANOLOC CHIP AND TAGS

Source: Sensera

Proprietary transceivers and tags

The company's nanoLOC location chip forms the heart of the Nanotron's tags (Figure 3) and anchors (Figure 4). It is a 2.4 GHz radio frequency (RF) transceiver. While the current, second, generation of nanoLOC chip has a maximum range of 500 meters, the upcoming next generation of the chip will have a significantly improved ranging capability of up to 1.5 kilometers.

This will expand the applicability of Nanotron's offering to larger farms and mines without having to install more network and infrastructure equipment.

nanoANQ anchors

Anchors receive data from tags and push this data on to servers where the data can be analyzed and served up to users on mobile phones, tablets and desktops. Nanotron anchors also use the company's proprietary nanoLOC chipset.

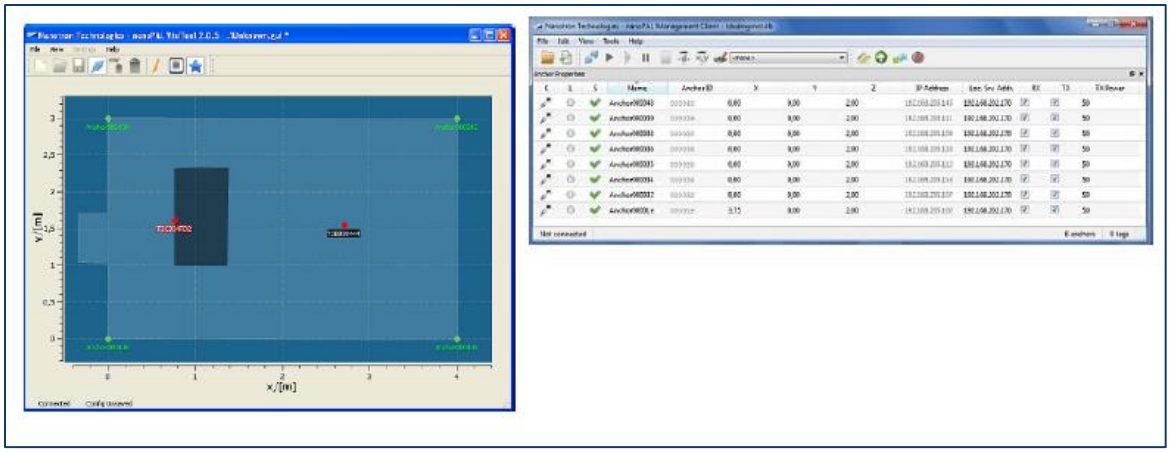
FIGURE 4: NANOTRON'S ANCHORS

Source: Sensera

Location software

The final building block in Nanotron's offering is the software suite, used for data analysis and user interfacing. Again, this is proprietary data analytics and location software even though customers, such as Smartbow (see below) typically use their own algorithms for data analysis.

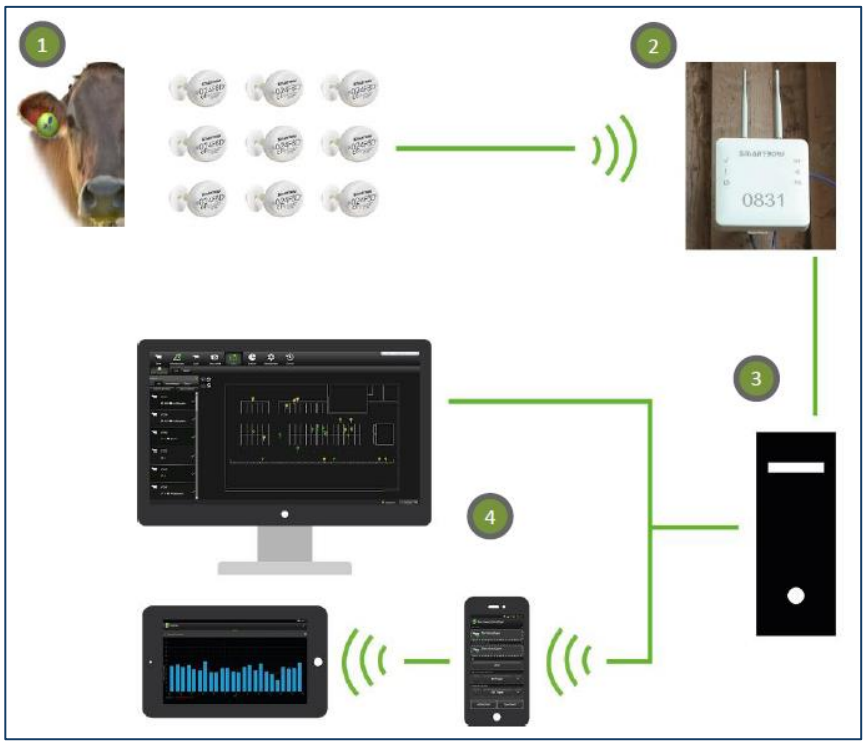
FIGURE 5: NANOTRON'S



Source: Sensera

Combining the individual building blocks above, a typical setup of Nanotron's solution on a dairy farm would comprise of four elements (Figure 6): The ear tags (1) collect real time location and animal health data, which is sent to the anchors (2). The anchors forward the tag data to a local server on the farm (3), which performs data analytics. Farmers are informed about heat and changes in rumination behavior and can see the cows' locations on farm maps in real time (4).

FIGURE 6: TYPICAL LIVESTOCK SETUP ON A FARM



Source: Sensera

Outsourced manufacturing keeps Nanotron asset-light

While Nanotron's system designs are proprietary, all chip manufacturing and system assembly is done through third parties. Global Foundries is one of the world's largest chip foundries (a chip manufacturing outsourcing partner), while STMicro is a French Integrated Device Manufacturer. Nanotron uses both companies to produce its various chipsets.

Anchors are manufactured by Prettl in Germany. Austria-based MKW provides Nanotron with robust tags for post component production.

This outsourced manufacturing model allows for limited Capex on the part of Nanotron, while the company has access to first-class production facilities.

While operating margins for these outsourced models are typically somewhat lower compared to fully integrated production models, we believe Nanotron currently doesn't have the scale required to run its own anchor production and assembly operations.

This may change going forward as revenues grow and proprietary anchor production and assembly starts to make economic sense for Nanotron, which we believe would be above US$10M in revenues.

Chip manufacturing will always be outsourced given the massive scale required to run a fab economically.

> *Nanotron's production outsourcing model limits Capex requirements and enables the company to run a very asset-light business model.*

Commercialization through channel partners

Nanotron's commercial strategy is focused on engaging with channel partners that have established and growing positions in relevant markets. For instance, the company recently signed two exclusive supply agreements with Smartbow, an Austrian AgTech (Agricultural Technology) company, for the supply of nanoLOC location chips and anchors. Nanotron also supplies embedded software and middleware to Smartbow, although not on an exclusive basis.

Smartbow supplies farms with Farm Animal Health solutions, i.e. the Eartag LIFE product, that incorporate health monitoring and location awareness.

> *Smartbow targets deployment of 1M active ear tags per year from 2019 onwards. To put this into perspective, Nanotron has shipped approximately 950,000 location chips to-date. In other words, the Smartbow deal is a very substantial revenue driver for SE1.*

SE1's total addressable market is 1.25BN cattle worldwide of which Smartbow is targeting 8% in developed economies. We will elaborate on this opportunity for SE1 in the markets section below.

More than 50 commercial deployments in the mining sector

Examples of channel partners in the Mining vertical include Schaumberg, GE Mining and Becker, which has resulted in more than 50 commercial deployments in the mining industry to-date.

Optimal deployment of resources and capital

By targeting customers, such as Smartbow, SE1 can remain focused on its core technical competencies that have applicability in many different industries, not just Agriculture.

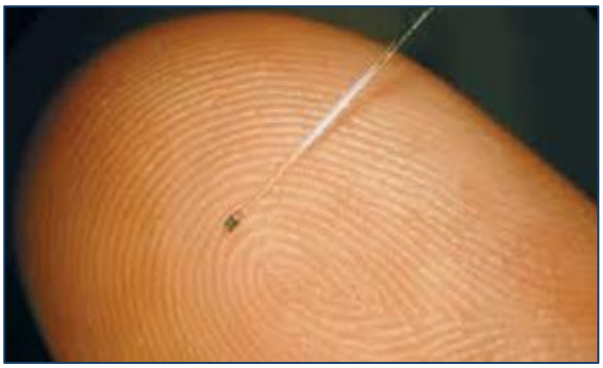
In our view, this ensures resources and capital are deployed in the most efficient way, i.e. by expanding into other verticals besides Mining and Agriculture, such as Healthcare and Oil & Gas.

Sensera Micro Devices: high-end MEMS

SE1's second pillar is built around Micro Electromechanical Systems, or MEMS, which are micro devices that consist of miniaturized mechanical and electro-mechanical components. MEMS can be used to measure a wide range of different variables, such as pressure, vibration, acceleration, angles of inclination, temperatures etc., and set off a signal to another system in response to that measurement.

For instance, in crash sensing in cars, MEMS can sense a fast deceleration of a car and send off a response to the airbag in order for it to deploy if that deceleration is deemed to be too fast and can be associated with a crash of the car.

FIGURE 7: SENSERA REPRESENTATIVE SENSOR



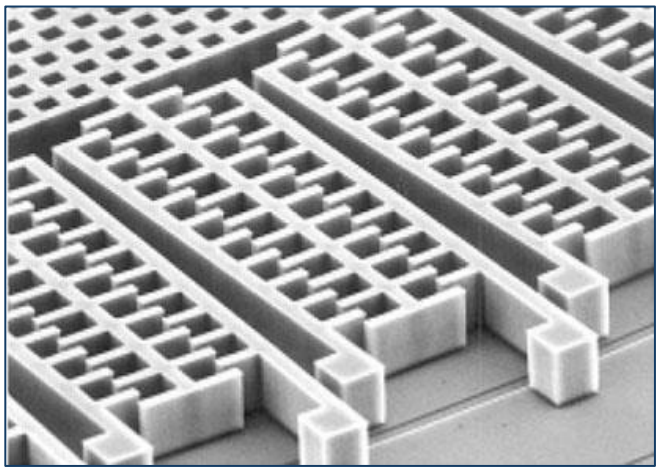
Source: Sensera

Countless application areas for MEMS

Application areas for MEMS are plentiful. Just in Automotive, MEMS are used for things like crash sensing, seat belt tension, suspension control, vehicle roll, break pressure, in-car microphones, tire pressure, fuel injection systems etc.

In Medical System, MEMS are mostly used in pressure sensors, such as for coronary pressure measurements and blood pressure. But MEMS have also increasingly found their way into other devices, such as micro pumps, and measurement tools, e.g. to measure glucose levels, enzymes and antibodies.

FIGURE 8: MEMS ACCELEROMETER



Source: STMicro

Additionally, MEMS have enabled Medical Devices to become more sophisticated over time. For instance, MEMS-based pacemakers and defibrillators can adjust their electrical shocks to a patient's activity level, rather than being set to just one heartrate, regardless of activity level, which was the case with older pacemakers.

Optical MEMS are widely used in opto-electronics, such as optical switches used in fiber optic systems and optical shutters as well as laser scanners. Many Consumer Electronics products make use of MEMS as well, such as accelerometers (Figure 8) and gyroscopes used in mobile phones.

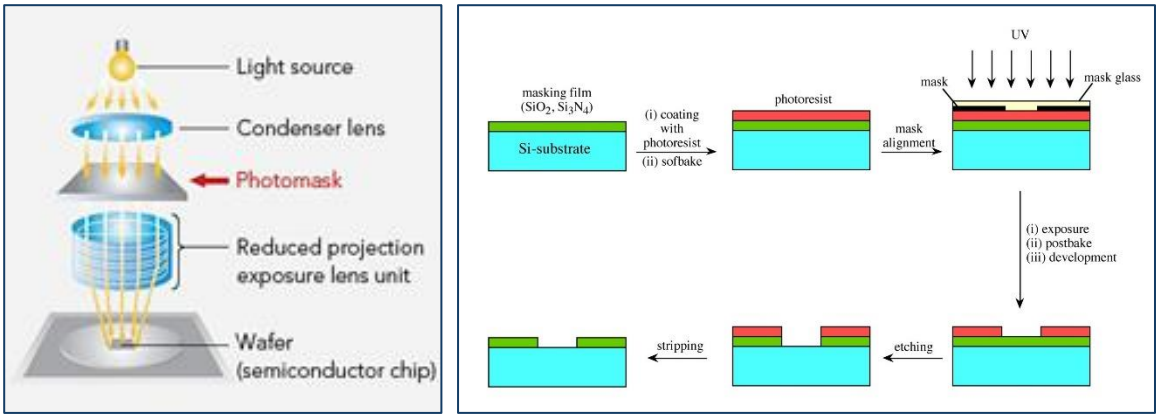
> *In other words, we believe it is fair to say that modern day life wouldn't be possible without MEMS.*

MEMS manufactured largely in-house resulting in high margins

The manufacturing process for MEMS is essentially a semiconductor manufacturing process in which the structures are built up in more than 200 process steps, including the all-important lithography steps (Figure 9). Using an ultraviolet light source, the required pattern for an individual layer of the MEMS is projected onto a photosensitive material on the wafer.

The exposed areas are developed allowing the photosensitive layer and layer beneath to be etched away. Depending on the required function of that particular layer (conduction, insulation, support structure), specific materials can be deposited in the edged areas. A polishing step typically follows this process step.

FIGURE 9: PATTERNING USING LITHOGRAPHY



Source: Hoya Corp., 3.bp

While SEI can perform 85% to 90% of these process steps in-house in its Boston-based manufacturing facility, the remaining 10% to 15% of steps are outsourced to third-parties with specialized tools or capabilities. Given this high percentage of in-house manufacturing, SEI's gross margins of 50%+ are relatively high.

As utilization of its facilities is expected to increase over time on the back of several recent contract wins (see below), we anticipate the company will be able to drive gross margins above 60% within the next several years.

Design-in is the key to high margins and customer stickiness

The core of SE1's commercial MEMS strategy is to be involved with new customer product designs from day one. In other words, SE1 aims to be involved in the actual product design at a very early stage enabling the company to design its MEMS structures into customers first iterations.

Because these new customer products, such as micro sensors for medical devices, will have SE1's proprietary MEMS designs embedded, it is very difficult for SE1's customers to switch MEMS suppliers once in volume production, both from an IP and manufacturing perspective. Consequently, design-in results in high customer stickiness and high margins as revenues transition from non-recurring engineering (NRE) revenues to revenues from commercial manufacturing.

Three-year deal with implantable medical devices company Abiomed

A good example of this design-in strategy is Abiomed (NASDAQ:ABMD), a Nasdaq-listed Medical Devices company focused on implantable medical devices, such as small blood pumps that can be implanted in human hearts.

SE1 has been involved in the design of a new, high-value medical device for Abiomed. SE1's MEMS component for this device is currently going into volume production. While the initial work with Abiomed was only focused on the MEMS component, SE1 is now also working towards production ramp of a full sensor, which drives SE1 up the value chain with this customer.

Military optical sensor currently going into volume production

Similarly, SE1 has developed an optical sensor for military applications, which is currently moving into volume production as well. Such high-end applications can have a selling price of several thousands of dollars with concomitant high margins.

Additionally, SE1 has at least four customers for which the company is currently doing design work, generating NRE revenues. Going forward, these customers are also expected to move into volume production.

MEMS prices vary widely

Generally, SE1's MEMS component prices range very widely, from US$ 20 for relatively simple MEMS components, to nearly US$ 300 for complex MEMS. Outliers are the very high-end components, such as the military optical sensors, that can cost several thousands of dollars.

MEMS manufacturing + Nanotron = end-to-end supplier

Prior to the Nanotron acquisition in August 2017, SEI was a pure MEMS design and manufacturing company. The addition of Nanotron enables the company to offer end-to-end solutions to customers, from component design to integrated circuits (IC's), modules and software layers.

Additionally, Nanotron now has the ability to first use SEI's manufacturing facilities to produce test batches of wafers and for initial volume production runs before it has to outsource component production to third parties. This offers Nanotron more flexibility and can potentially be somewhat cheaper, although we believe the latter is not a key driver.

Future M&A focused on communications technology and infrastructure software

As far as SEI's acquisition strategy is concerned, we expect the company will be interested in expanding its core sensor and RF transmission capability. It is especially focused on longer range solutions like LPWAN (Low Power Wide Area Network). Such longer ranges can currently be achieved by using third-party networks and technologies, such as Sigfox, NB-IoT (Narrow Band IoT) and LoRa. Acquiring specific add-on technologies to enable Nanotron tags to transmit over longer distances would make a lot of strategic sense, in our view.

In order to offer more comprehensive solutions to customers, i.e. beyond hardware only, and thus to further move up the value chain, SEI will likely need to expand its software capabilities as well to be able to supply a complete IoT software stack, including IoT security, Artificial Intelligence and machine learning as well as edge computing.

While expanding such software capabilities could potentially be done in-house, a faster way to acquire these capabilities is for SEI to look for partnerships and application specific take-over targets that bring immediate benefits.

Market opportunities abound

Livestock Monitoring - Growing demand in the Developed World

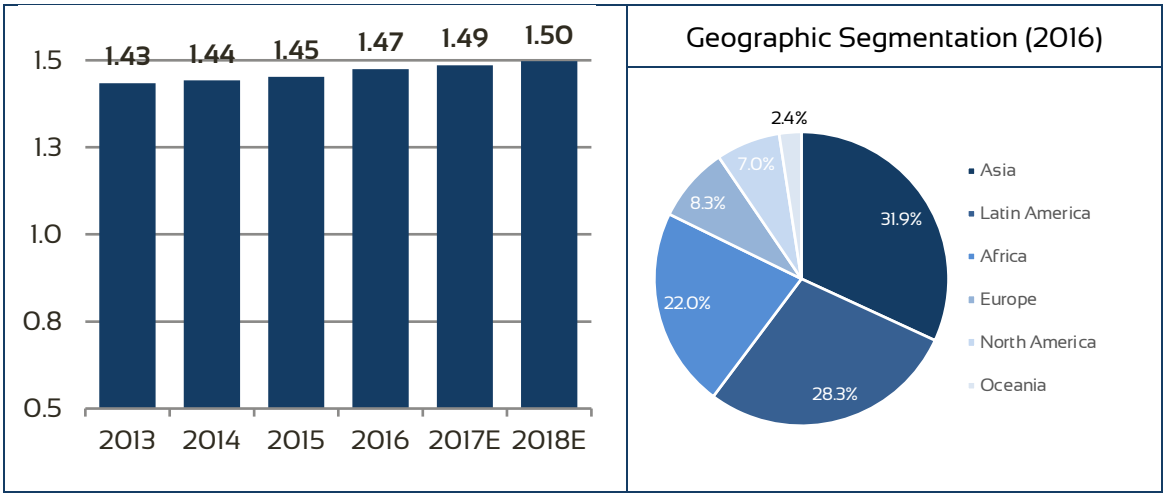
Consolidation and growth of dairy farms over the years have resulted in larger herds per farmer, which makes manual observations increasingly challenging. This has driven a need for efficient and cost-effective livestock management. Moreover, substantial government support in North America and Europe (in terms of investments, favorable initiatives and trade policies) has also facilitated adoption of livestock monitoring systems.

Consequently, use of IoT technology, including real-time location systems (RTLS), is gaining momentum in livestock monitoring. It is likely to enhance productivity levels by minimizing manual labor and by providing efficient platforms for proper herd management. For instance, body-mounted sensor systems, such as ear-tags, together with herd management software, can be used to improve herd health and timely insemination when cows reach the estrous cycle.

The total addressable market (TAM) for SE1's RTLS technology depends on the total cattle volume globally and the average price for tags and platform (anchor + software). As per the Food and Agriculture Organization (FAO, Figure 10), the total beginning stock for cattle was estimated to be ~1.5BN globally in 2018.

However, less than 20% of this volume belongs to the developed economies of North America, Europe, and Oceania, where there is higher demand for livestock monitoring. This still leaves a 300M cattle opportunity for SE1's channel partners, and thus SE1.

FIGURE 10: GLOBAL CATTLE POPULATION (STOCKS IN BILLIONS)



Source: TMT Analytics, FAO

In the short term, Nanotron is primarily focused on the dairy cow sector. As per the FAO, about 273 million milk producing cows exist worldwide, which results in serviceable addressable market (SAM) of US$1.5 billion (Figure 11).

Global milk prices are the single largest factor that determines investment in IoT technology in dairy farms. Due to falling milk prices, the technology suffered from lower investments in 2015 and 2016, but the investments increased with uptick in milk prices in 2017. The outlook for milk prices remains positive for 2018 as well.

FIGURE 11: NANOTRON TOTAL ADDRESSABLE MARKET

Parameter	Unit	Value
Global Cattle Population	Millions	1,497
Price per Location Tag (chip only)	US$	2.70*
Price per Anchor & Software	US$ per 20 cattle	55
TAM	US$ Billion	8.2
– North America, Europe, Oceania	US$ Billion	1.5
– Rest of World	US$ Billion	6.7

Source: TMT Analytics, Sensera

** Nanotron's commercial price point can be up to US$ 25 per tag*

Technavio estimates the global IoT market for livestock monitoring will grow at a 12.1% CAGR during 2017–- 2021. The milk harvesting application accounts for 32% of the total market, followed by health and wellness, feeding and breeding applications. EMEA accounts for 45% of the market in 2016. High upfront capital requirements and lack of skilled farmers/managers in emerging markets are likely to be key growth restraints in these markets.

Mine safety and productivity are the key drivers in Resources vertical

The mining industry continues to shrink worldwide, due to increasing safety and output issues. While hours worked in the industry steadily declined, dropping 28% between 2012 and 2016, the number of fatalities and their frequency increased, according to the International Council on Mining and Metals (ICMM). Furthermore, according to the International Labor Organization (ILO), the mining industry employs about 1% of the world's workforce, but accounts for 8% of fatal workplace accidents. This drives the need for technological solutions that can reduce the number of accidents at mining sites.

Mining productivity is an equally important revenue driver for SE1

Mine logistics planning, based on miners' locations and volumes of mined resources, are a key driver of mining efficiency, and as such a key driver of profitability. The same holds for energy saving, e.g. through more efficient ventilation based on assets' locations. For SE1 these are key selling point for the mining vertical.

As per the ILO, the global mining industry employs 2.5 million people and about 13,000 mines exist in the US alone. SE1 estimates the TAM in the mining sector to be around US$3BN. However, the company is currently focused on underground mines, resulting in a total SAM for the mining sector of nearly US$ 0.5BN (Figure 12). The company does have a few installations in open cut mines which could open the market opportunity significantly.

FIGURE 12: SENSERA ADDRESSABLE MARKET IN THE MINING VERTICAL

Parameter	Value	Device	# Devices Per Unit	ASP (US$)	Addressable market (US$ Million)
Miners	1.5 M	Swarm Bee	1	30	45
Mines	11,000	Embedded Anchor	100 anchors	60 - 380	363
Vehicles	-	4* Swarm Bee	50 vehicles	120	66
Total	**-**	**-**	**-**	**-**	**474**

Source: TMT Analytics, Sensera

In our view, productivity improvements and work safety are the key drivers for Nanotron's mining solutions, which we believe can be extended to the Oil & Gas sector given the similarities with the mining industry where work safety issues are concerned.

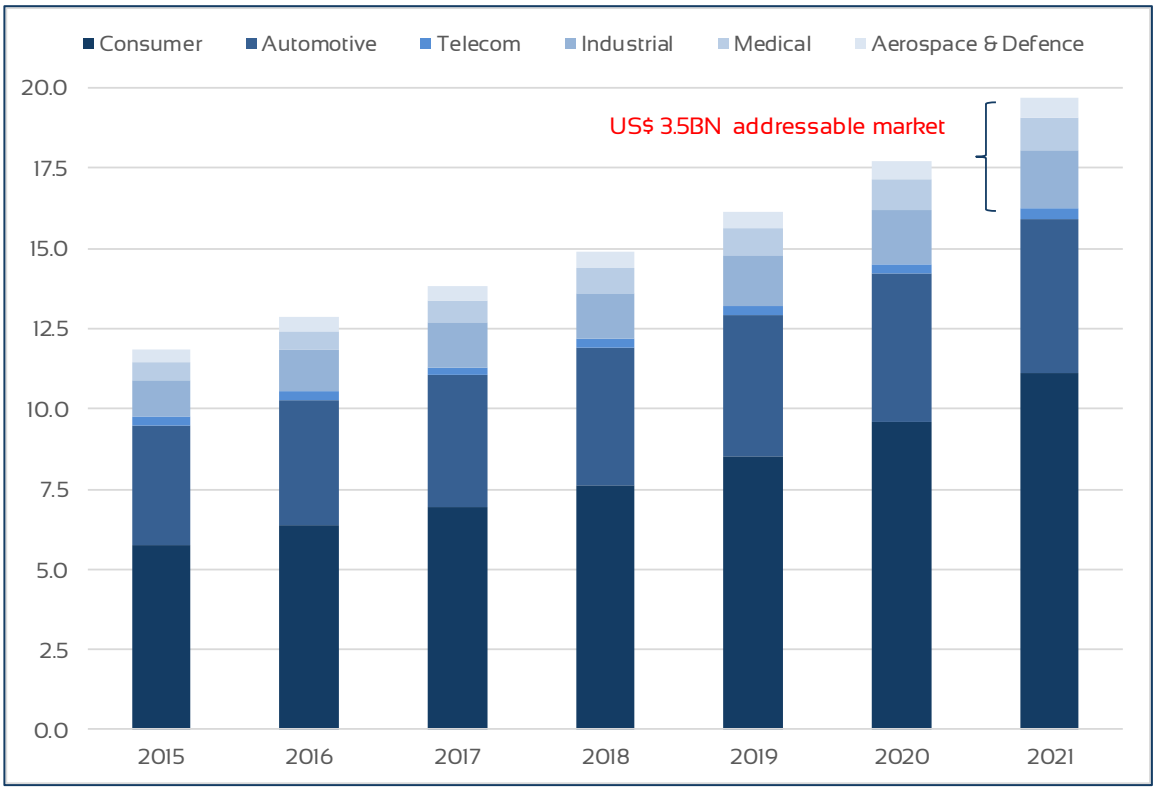
MEMS: Next Phase of Growth in Semiconductor Business

Semiconductor-based sensors, and MEMS in particular, are increasingly gaining importance with the rise of new technologies, such as augmented and virtual reality (AR/VR), IoT, autonomous vehicles, 3D sensing, and 5G communications. A wide range of semiconductor-based sensors and actuators will be critical for the realization of these future smart systems.

Yole Développement (a France-based semiconductor research firm) forecasts that the global MEMS industry will grow at an impressive average rate of 14% per annum between 2017 and 2022.

The Consumer segment (with applications in smartphones, fitness wearables, etc.) will continue to account for the lion's share, followed by Automotive (Figure 13). However, a potential higher-margin use of the technology has emerged in the Medical, Industrial, Defense and Aeronautics sectors, which are the focus subsegments for SE1.

FIGURE 13: GLOBAL MEMS MARKET BY SECTOR (IN US$BN)



Source: TMT Analytics, Yole Développement

Among all focus subsegments, Medical is expected to grow the fastest (11.1% CAGR during 2016-2021) as compared to Defense (7.8%), Industrial (7.3%) and Civil Aerospace (4.9%).

Some key trends driving demand for MEMS in the Medical industry include miniaturization and personalization of healthcare equipment (such as handheld devices), the shift from hospital to home monitoring and laboratory automation. Pedometer, blood pressure monitoring, Electrocardiography (ECG), and smart hearing aids are a few of the emerging applications of MEMS in healthcare.

The Internet of Things is a key growth enabler for MEMS

Among all digital technologies, the Internet of Things (IoT) is considered to be the largest growth enabler for MEMS. Simply put, the IoT is a network of physical devices that are embedded with electronics, software, sensors and actuators in order to exchange data over the Internet. Although IoT technology has been hyped for quite some years, Gartner predicts that the technology will become mainstream and disrupt various business models from 2018 on. Gartner estimates that about 11BN connected devices (total installed base) will be in use in 2018 and will further grow at a dramatic pace to 20.4 billion devices by 2020. Cisco estimates this number at 50BN by 2020.

Consumer devices (smartphones, tablets, smart TVs, etc.) are expected to remain the largest segment going forward (Figure 14), but B2B and vertical-specific business devices are also gaining steady momentum.

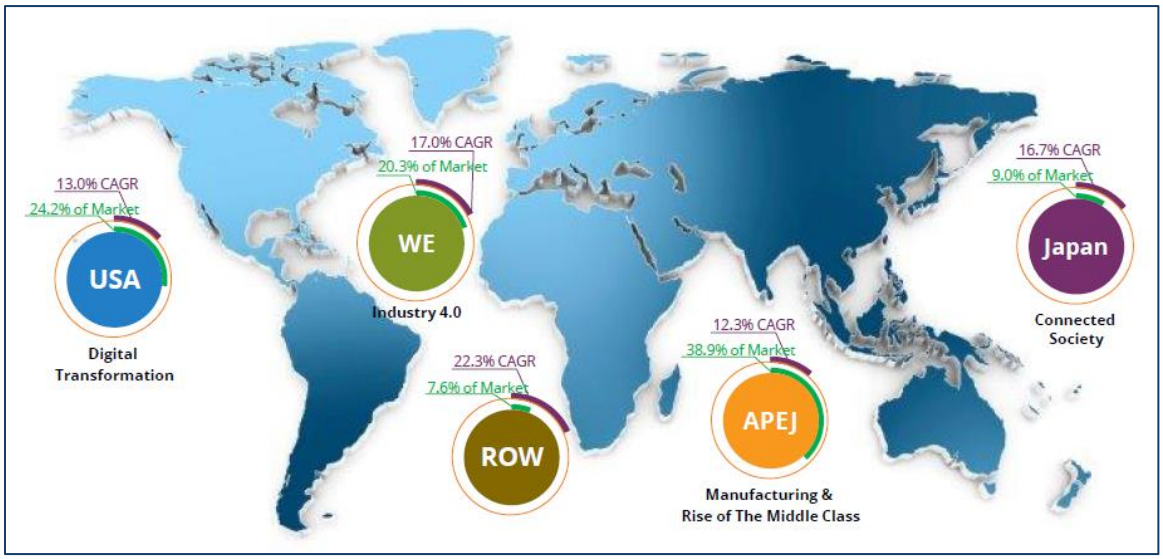
FIGURE 14: GLOBAL IOT INSTALLED BASE – BY END-USE (IN BILLION UNITS)

	2016	2018	2020	CAGR 2016-20
Consumer	4.0	7.0	12.9	34.2%
Business: Cross-Industry	1.1	2.1	4.4	41.2%
Business: Vertical Specific	1.3	2.0	3.2	24.6%
Total	**6.4**	**11.2**	**20.4**	**33.7%**

Source: TMT Analytics, Gartner

Worldwide spending on IoT infrastructure, devices and software is estimated to reach US$ 773BN in 2018, an increase of 14.6% over the US$ 674BN spent in 2017. At a 14.4% CAGR during 2017-2021, IDC estimates that the total spending will reach US$ 1.13TN by 2021. Geographically, APAC remains the largest segment, but the US and Western Europe are expected to grow faster (Figure 15), driven by higher adoption among enterprises.

FIGURE 15: IOT SPENDING – BY GEOGRAPHY (IN 2021)



Source: TMT Analytics, IDC

The IoT hardware segment (primarily comprising sensors and modules) accounts for a third of the total spending, but its share will likely decline with growing demand for services and software. We expect SEI to benefit from this trend as well given that the company aims to expend its offering of software and connectivity solutions for targeted IoT applications longer term.

Remote health monitoring, both eHealth and mHealth (under Healthcare), and smart buildings and home automation (under Industrial) are the fastest growing IoT applications that are likely to drive demand for MEMS solutions.

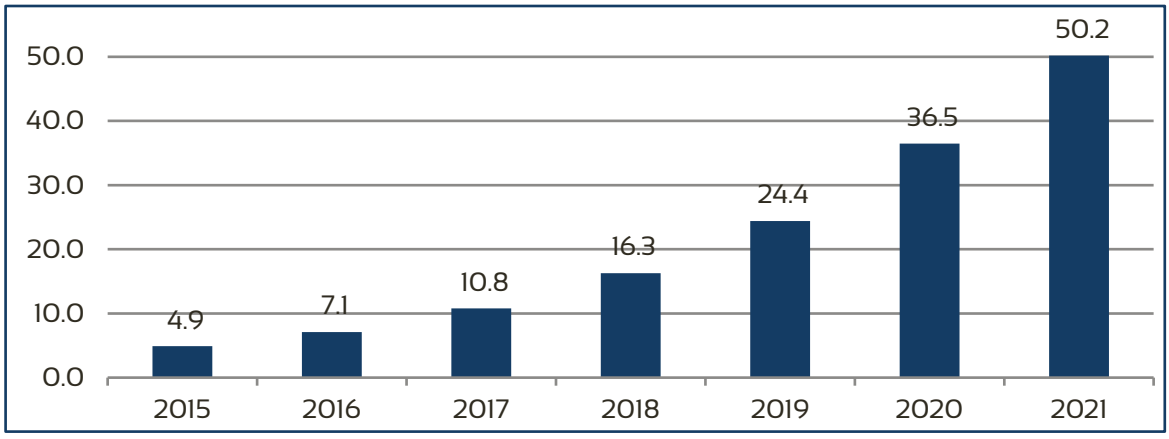
Remote patient monitoring to drive IoT within Healthcare

IoT in Healthcare presents a multitude of applications, including clinical operations and workflow management, medication management, connected imaging, inpatient management and telemedicine, among others. In May 2016, Business Insider Intelligence estimated that the global healthcare IoT device installations would grow from 73M in 2016 to 161M by 2020.

Telemedicine (especially remote patient monitoring) is emerging as a key segment within IoT healthcare, driven by increasing incidences of chronic diseases that require constant monitoring and rising pressure on healthcare service providers to reduce cost of care. According to Berg Insight, the number of remotely monitored patients increased by 44% year-on-year to 7.1M in 2016. This number includes all patients enrolled in digital care programs in which connected medical devices are used as a part of the care regimen (this does not include devices that are used for personal health tracking such as external wearables).

Berg Insight forecasts that the number of enrolled patients under remote monitoring will increase to about 50M (Figure 16), a CAGR of 47.9% during 2016-2021. Implantable cardiac rhythm management (CRM) and Sleep Tech together accounted for 80% of the connected home monitoring systems in 2016. But in the next five years, the fastest growing market segments will be glucose monitoring, air flow monitoring and connected pharmaceuticals.

FIGURE 16: CONNECTED REMOTE HEALTH MONITORING DEVICES (IN MILLION UNITS)



Source: TMT Analytics, Berg Insight

In terms of revenues, the global remote patient monitoring (RPM) solutions reached a value of EUR 7.5BN (US$ 8.0BN) in 2016, including revenues from hardware (medical monitoring devices containing IoT sensors embedded with MEMS chips) and software and systems (mHealth connectivity solutions, care delivery platforms and mHealth care programs). It is slated to grow at a CAGR of 33.8% between 2016 and 2021 to reach EUR 32.4BN (~US$ 34.5BN) by 2021.

The hardware segment accounted for 67.5% of RPM revenues in 2016, but rising demand for sophisticated delivery platforms and connectivity solutions is likely to reduce the share of hardware to 48.7% by 2021.

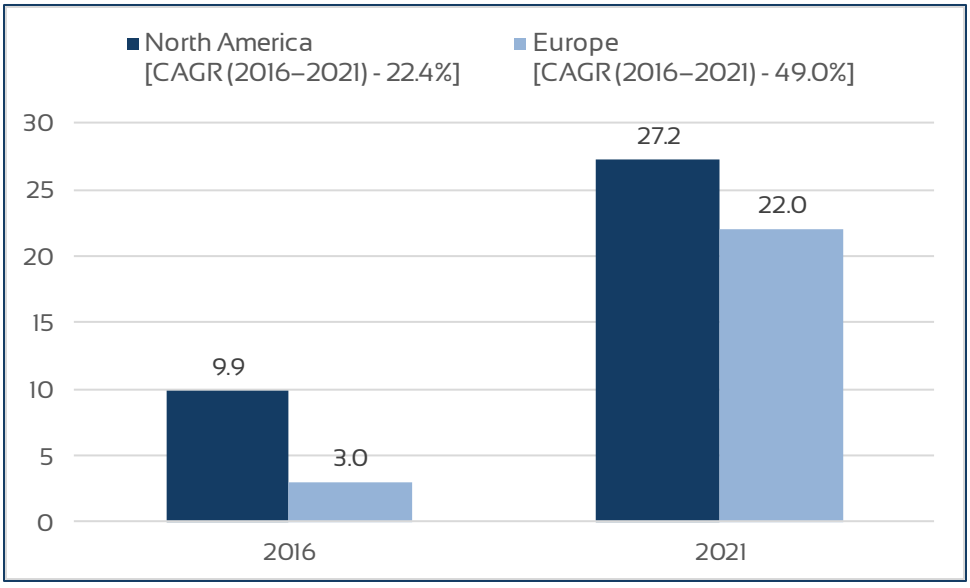
Smart Homes and Home Automation mostly a developed world vertical

The home systems that are controlled via either a smartphone app or a web portal are usually considered as smart home systems. Devices that can only be controlled with switches, timers, sensors and remote controls are thus not included.

North America is one of the key markets for home automation. The installed base of smart home connections in the region increased by 58% in 2016 to reach 31.2M . However, as some homes have more than one smart system in use, the total number of smart homes with internet-driven automation was pegged at 21.8M in 2016, according to Berg Insight. This corresponds to a penetration rate of 16.7%, placing North America as the most advanced smart home market in the world. Europe, still a nascent market, had an installed base of around 8.5M smart homes, representing a penetration rate of 3.8% in 2016.

Going forward, though, Europe is expected to grow rapidly and even surpass North America, with a total smart homes base of 80.6M expected by 2021 (57% CAGR during 2016-2021). North America, on the other hand, will grow at a CAGR of 27%, reaching 73M smart homes by 2021, even though North America will maintain its lead in total spending on smart home solutions (Figure 17).

FIGURE 17: SPENDING ON SMART HOME SYSTEMS (IN US$BN)



Source: TMT Analytics, Berg Insight

All in all, we believe the target markets for MEMS are set for strong growth in the medium to longer term, highlighting the tremendous opportunity for SEI in this space.

In our view, the opportunities in Medical Systems and Healthcare are likely to be the most attractive ones for SEI over the medium term.

Competitive landscape

A host of Tag and Ranging providers

Nanotron primarily competes with companies that provide real-time location systems (RTLS) in the Livestock, Mining, Healthcare and Industrial verticals (Figure 18) with SE1 essentially being the only company that offers capabilities across all four verticals.

FIGURE 18: COMPETITION IN LIVESTOCK MONITORING, MINE SAFETY, HEALTHCARE AND INDUSTRIAL

	Head office	RTLS Technology	Sensera Focus Verticals			Non-focus Verticals
			Livestock	Mining	Healthcare	Industrial
Aeroscout	UK	Wi-Fi		■	■	■
BeSpoon	France	UWB				■
Decawave	Ireland	UWB	■		■	■
Ekahau	US	Wi-Fi		■	■	■
Leantegra	Ukraine	Wi-Fi, BLE, UWB		■		■
Litum IoT	Turkey	RFID		■		■
Omnisense	UK	CSS, UWB, BLE	■		■	■
Sensera	**Australia**	**CSS, UWB**	■	■	■	■
TekVet	US	RFID	■			
Time Domain	US	UWB				■
Tracktio	Spain	UWB, BLE, RFID	■	■		■
Ubisense	UK	UWB				■
Zebra	US	UWB, RFID, WiFi	■		■	■

Source: TMT Analytics

Zebra Technologies and Decawave are two key competitors in the Livestock segment. Zebra has partnered with GEA Group to supply UWB tags and readers for the latter's CowView solution (location and behavior analysis of dairy cows).

In terms of technology, only UK-based Omnisense is another player (other than SE1) that offers Chirp Spread Spectrum (CSS) technology.

We believe SE1 could potentially win new business in the Livestock segment by partnering with the leading dairy equipment OEMs (such as DeLaval, GEA Group, Lely, and BouMatic) and/or the herd management and activity monitoring companies (such as Nedap and SCR).

SE1's recent partnership with Smartbow, a provider of animal positioning and health monitoring systems, strengthens this view even though in-house development of location chips and anchor systems by these types of players might be an alternative to SE1's offering to this segment. For instance, SCR has developed a proprietary electronic identification tagging solutions for cattle tracking.

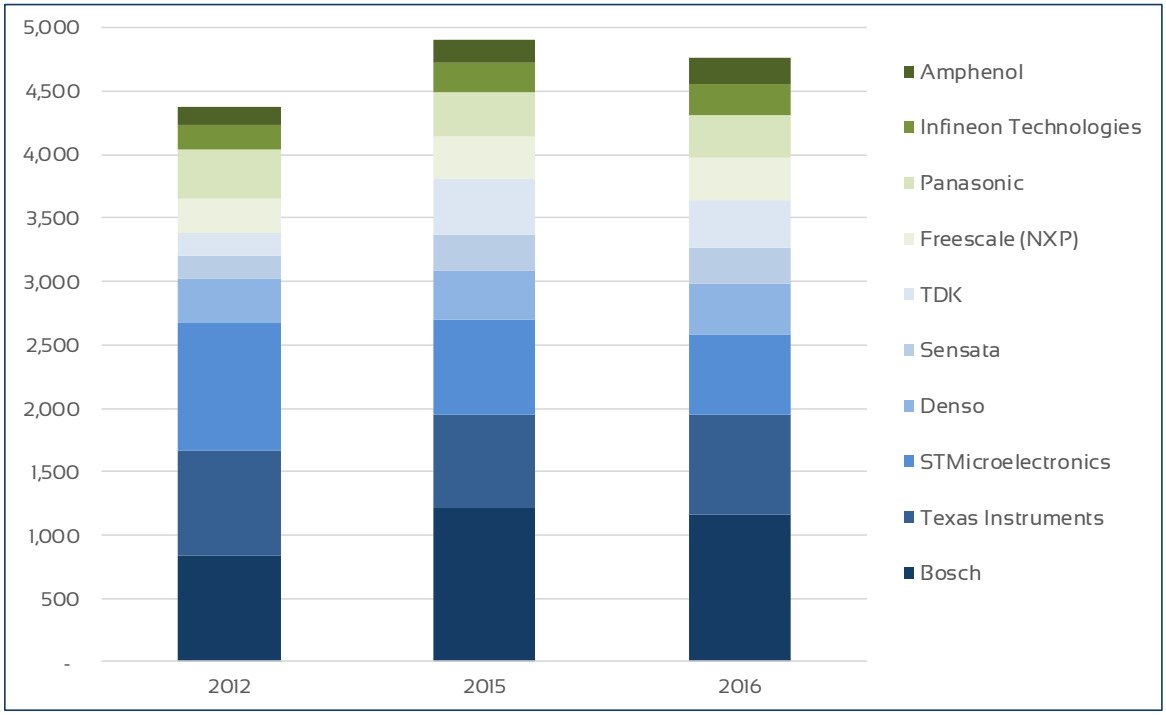
Highly fragmented MEMS market implies scope for consolidation

IHS estimates that a total of 130 suppliers are addressing high-value MEMS applications, suggesting that the MEMS segment is quite fragmented and competitive (Figure 19).

Bosch is one of the market leaders in the MEMS industry and produces about 8BN MEMS annually. The company started MEMS production in 1995, holds more than 1,000 MEMS patents and possesses substantial in-house design and manufacturing capabilities for MEMS fabrication in multiple segments.

GE Sensing (now part of Amphenol) and Measurement Specialties (now part of TE Connectivity) are other key players in Industrial, Medical and Defense applications (particularly MEMS-based pressure sensors).

FIGURE 19: REVENUE OF LEADING MEMS PLAYERS (IN US$M)



Source: TMT Analytics, Yole Développement

Note that the above chart shows revenue generated by SE1's peers from all sectors and not necessarily only from Healthcare and Military (Aerospace & Defense). Other players such as HP, Knowles and Avago either manufacture MEMS primarily for Consumer applications or manufacture inkjets/filters/microphones (which are not target areas for SE1) and hence, they have not been considered as key competitors to SE1.

Many large players losing market share to challengers

Revenues of the leading 10 MEMS players grew at a 2.2% CAGR during 2012-2016. Most established players have experienced lower than average growth in MEMS, indicating that new entrants have been successful in capturing market share through their innovative products. For instance, companies such as FLIR, ULIS and Sensir have been successful in filling the growing demand from the Smart Buildings segment.

> *We expect SE1 will be able to show above-average growth in the foreseeable future, given the flexible nature of its operations and its strategy to only target high value market segments.*

Separate business models for Nanotron and MEMS

Nanotron - Selling tags, anchors and software through channel partners

Nanotron generates revenues through sales of hardware (tags and anchors) as well as location software that runs on local servers and in the Cloud. The company's primary verticals are currently Mining and Agriculture, which it addresses through channel partners, such as Smartbow, GE Mining, Becker and Schauenburg.

Revenues from a typical farm with 400 animals will comprise of 400 tags and between 10 and 20 anchors. The price per tag is can be as high as US$ 25, depending on the configuration, while the anchors plus the required software can be as high as US$ 200. It should be noted that in most of today's engagements the company is supplying RF modules and not full tags as there are often unique requirements for tags that are fulfilled by the channel partner.

The upfront implementation cost for an average-sized farm is around US$ 2,500. However, this number can range widely given the very different sizes of farms that Nanotron's channel partners supply, i.e. between 100 and 1,000 cattle. If additional feeding functionality is required, the setup will require more anchors, increasing the initial upfront costs.

In addition to the upfront costs, Nanotron can charge recurring software license fees of up to US$ 20 per annum. And while the tags are designed to last 3 to 5 years, often the tags need to be replaced yearly due to wear and tear, resulting in follow on revenues from the same farm. SE1 has supplied several hundreds of farms to-date and aims to expand its customer base to several thousands of farms in the next few years, through channel partners such as Smartbow.

Same model for Mining vertical, just with many more tags and anchors required

The same revenue model applies to Nanotron's Mining vertical, albeit with different numbers of tags and anchors. Mining applications typically use more tags, i.e. one for each miner and vehicle, which can run into the thousands of tags per mine. Additionally, anchors are needed throughout extensive mining tunnels and shafts.

Therefore, while initial pilot projects may only involve a few hundred tags and up to 20 anchors, mining operations with thousands of workers and with shafts and tunnels that can run for hundreds of kilometers, it's easy to see that tag and anchor numbers can run into the thousands.

MEMS - Revenues from Non-Recurring Engineering and unit sales

The business model for SE1's micro devices business is to engage with prospects and customers at a very early stage in their new product development process, i.e. to design-in SE1's MEMS technology into new products. The company can derive Non-Recurring Engineering (NRE) revenues from such work.

After the initial test production runs, SE1 can then move customers into volume production as their product sales to end-customers ramp up. The company subsequently sells on a per product basis. Prices for micro devices in SE1's Medical vertical can range from US$ 20 for simpler components to US$ 300 for more complex systems that include multiple components and sensors.

Prices in the Military vertical are typically substantially higher, i.e. several thousands of dollars, albeit at lower volumes than in the Medical vertical. Given SE1's production capacity in its Boston facilities, we expect the company will be able to manufacture most production in-house for the foreseeable future.

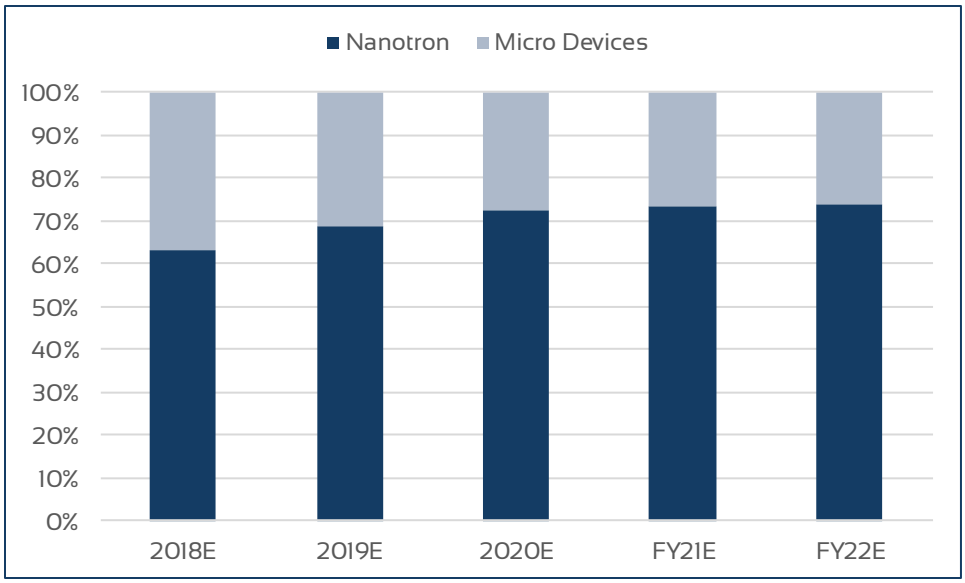
Reiterated revenue guidance for FY18

In early March, SE1 reconfirmed the revenue guidance the company had previously given for FY18 of US$ 6.25M to US$ 7.25M. In our view, this guidance signals the strong revenue uptick SE1 is expecting for the MEMS business, following the recently closed commercial deal with Abiomed and several of the other commercial wins.

We are projecting FY18 revenues of US$ 4.35M for Nanotron and US$ 2.5M for MEMS, totaling US$ 6.9M.

Longer term, we expect an approximate70/30 revenue split between Nanotron and Micro Devices (Figure 20).

FIGURE 20: REVENUE SPLIT BY BUSINESS UNIT



Source: TMT Analytics *FY18 includes only four months of Nanotron*

Turning EBITDA positive late in FY19

Based on current ramp up of production for customers in both the Nanotron and the Micro Devices business units, we expect SE1 to be able to achieve approximately US$ 11.2M in revenues in FY19, followed by US$ 16.5M in FY20 (Figure 21). FY20 is also the first full year in which we expect SE1 to be EBITDA positive with the company targeting to turn EBITDA positive in late FY19. Longer term, we anticipate gross margin growth to level off around 65%. We assume a final capital raise of US$ 8M at A$ 0.30 per share (last raise price) in FY19.

FIGURE 21: P&L SUMMARY (US$ M)

	2017A	2018E	2019E	2020E	FY21E	FY22E
Revenues	1.2	6.9	11.2	16.5	21.4	26.1
Gross margins %	*-25.8%*	*55.5%*	*60.4%*	*64.0%*	*64.6%*	*65.0%*
EBITDA	(5.4)	(7.1)	(2.7)	0.5	2.6	4.8
EBITDA %	*-441%*	*-104%*	*-24%*	*3%*	*12%*	*19%*
Net earnings	(5.3)	(7.4)	(2.9)	0.2	1.6	3.1
Earnings per share	-0.06	-0.05	-0.02	0.00	0.01	0.02

Source: TMT Analytics

Valuation clearly higher than today's share price

In order to assess SE1's longer term value, we have used a peer group valuation and a Discounted Cashflow calculation.

Peer group of IoT and MEMS players

As far as ASX-listed companies are concerned, we believe peers for the Nanotron side of the business include CCP Technologies (ASX:CT1) and Buddy Platform (ASX:BUD), while Bluechiip (ASX:BCT), Bluglass (ASX:BLG) and BrainChip (ASX:BRN) could be considered peers for the MEMS activities.

As is the case with many smaller ASX-listed Tech stocks, though, analyst coverage and earnings forecasts for these companies are scarce. Therefore, we have complemented the available data with several overseas peers in the MEMS and IoT subsegments, including NASDAQ-listed Impinj (NASDAQ:PI) and Knowles Corp. (NASDAQ:KN).

FIGURE 22: PEER GROUP VALUATION

Company	Ticker	EV/EBITDA			EV/Revenue		
		2018	2019	2020	2018	2019	2020
BluGlass	BLG	31.5	7.5	3.0	17.3	5.7	1.6
BrainChip	BRN	nm	27.8	12.1	27.8	9.8	5.4
CCP Technologies	CT1	nm	-8.3	4.0	5.4	2.1	1.1
Impinj	PI	nm	nm	nm	2.0	2.0	1.7
Knowles Corp.	KN	7.7	7.2	6.4	1.6	1.5	1.4
Average		***19.6***	***8.6***	***6.4***	***10.8***	***4.2***	***2.3***
Sensera	**SE1**	**nm**	**nm**	**nm**	**4.2**	**2.6**	**1.7**

Source: TMT Analytics, S&P CapitalIQ

Given that SE1 is only expected to turn EBITDA positive in FY20, we have focused on EV/Revenues to value SE1. The company's peer group is valued at an average EV/Revenue multiple of 4.2x for FY19. Applying that same multiple to SE1 would yield a value of A$ 0.39 per share.

Given SE1's high projected revenue growth rate, one might argue that SE1 should be valued more in line with high growth peers, such as BRN and BLG (roughly between 5x and 10x for FY19), rather than PI and KN, which are more mature and exhibit clearly lower revenue growth. Valuing SE1 at the lower end of that range, i.e. an EV/Revenue multiple of 5.7x, would yield a value of A$ 0.53 per share.

In our view, valuing SE1 in line with high-growth, ASX-listed peers seems more appropriate than valuing the company in line the peer group average, which includes mature, lower growth companies.

DCF valuation suggests substantial longer-term upside

Our DCF model yields a theoretical WACC for SE1 of 9.4% (risk free rate of 2.5%, a Beta of 1.25 and an equity risk premium of 5.5%, no debt). Applying that discount rate to our Free Cash Flow projections through 2024, using a terminal growth rate of 2%, yields a value of A$ 0.70 per share.

However, at this stage in the company's lifecycle we believe a WACC of 9.4% doesn't accurately reflect the risks associated with investing in ASX-listed small cap technology

stocks. In our view, a discount rate of 12.4%, i.e. 3%-points higher, is more appropriate. This would yield a value of A$ 0.47 per share (Figure 23).

FIGURE 23: DISCOUNTED CASHFLOW VALUATIONS PER SHARE (A$) USING VARYING WACC'S

		WACC							
		7.4%	8.4%	9.4%	10.4%	11.4%	12.4%	13.4%	14.4%
Terminal Growth Rate	0%	0.76	0.66	0.58	0.51	0.46	0.41	0.37	0.34
	1%	0.86	0.73	0.63	0.55	0.49	0.44	0.40	0.36
	2%	1.00	0.83	0.70	0.60	0.53	**0.47**	0.42	0.38
	3%	1.20	0.96	0.79	0.67	0.58	0.51	0.45	0.40

Source: TMT Analytics

Over time, as the company matures and approaches EBITDA break even, there should be room to lower the discount rate, which would translate into higher values per share as illustrated in Figure 23.

Our price target for SE1 is a blend of our peer group and DCF valuations; A$ 0.53 and A$ 0.47 per share respectively, i.e. we start our coverage of SE1 with a price target of A$ 0.50 per share.

Conclusion: Starting coverage with a BUY rating

We believe SE1 is addressing very attractive market segments, which are characterized by high growth and high margins. Moreover, the business combination of Nanotron and the MEMS activities should result in substantial synergies where prototyping and initial manufacturing of new components is concerned. In turn, this should result in stronger margins for the combined businesses.

Our price target for SE1, derived from a peer group valuation and DCF calculation is A$ 0.50 per share. This target implies substantial upside from the current share price. Hence, we start our research coverage of SE1 with a BUY recommendation.

Near term share price catalysts / KPI's

- Finalization of the anchor supply agreement with Smartbow, which complements the earlier supply agreement with Smartbow for nanoLOC location chips. Both agreements are expected to significantly add to volume shipments in FY19 and FY20.
- Additional channel partners for Nanotron in the Agriculture and Mining vertical, broadening SE1's market reach.
- Expanding Nanotron's reach into the Healthcare vertical would bring significant opportunities to the company. Revenues from this vertical are currently very limited.
- Initial production ramp of MEMS components under the Abiomed agreement, slated for 4Q18 (June quarter), will substantially drive SE1's revenues from the MEMS business.
- Conversion of MEMS NRE work into commercial volume production for the existing Medical and Military customers would provide another pillar under the MEMS revenue outlook in the next few years.

SWOT Analysis

Strengths

- Acquisition of Nanotron positions SE1 as an integrated player in the IoT space, capable of embedding itself in customer supply chains and offering valuable data-driven insights.
- Ability to develop its own intellectual property in line with market needs.
- Vertical integration through the Nanotron acquisition should bring commercial and operational benefits, e.g. more in-house manufacturing of initial, low volume, production runs.

Weaknesses

- Unlike most of its peers, SE1 does not have a large scale existing partner/distributor network to quickly scale-up globally.
- Quickly ramping up the company's supply chain, based on customer demand, may prove difficult given the relatively low volume requirements to-date, i.e. suppliers are currently not likely to prioritize SE1 over their larger customers.
- SE1 currently has limited exposure to other sectors, such as Healthcare and Oil & Gas (Nanotron) and Automotive and Industrial (MEMS). In other words, more Business Development will be required in the near term to develop these verticals.

Opportunities

- There are significant opportunities for high-value MEMS solutions due to rising investments and applications of game-changing IoT technology within the Healthcare and Industrial verticals.
- Ever-increasing demand for food due to population growth is putting pressure on the global supply chain. This is likely to increase IoT-based investments in Agriculture due to the promise of improvements in yield and food safety.
- Further growth potential lies in expanding Nanotron's solution to huge populations of other livestock (pigs, sheep etc.).

Threats

- The tags market is quite fragmented with many smaller players, which may potentially put pressure on prices in certain verticals and geographies.
- More established players such as Zebra Technologies, Bosch and STMicroelectronics can have a faster time-to-market for many new MEMS applications and products due to their broad IP portfolio, proprietary manufacturing and high brand equity.
- Technology investments in the Agriculture sector are highly dependent on price volatility of milk, meat and other animal products.

Appendices

Board of Directors

Matthew Morgan (Chairman): Mr. Morgan is the Principal of Millers Point Company, an advisory business that provides consulting and advisory services to emerging companies with high growth or turnaround objectives. He is a former venture capitalist at QIC and is experienced in capital raisings, mergers and acquisitions and has held executive positions in a variety of private equity funded organizations. He was a co-founder of Diversa Ltd (ASX DVA) a financial service business acquired by OneVue Holdings Ltd (ASX OVH) and is currently a non-executive director at ASX listed companies Leaf Resources Limited (ASX LER) and Brain Resource Limited (ASX BRC). Matthew holds a B.Commerce, B. AppSc and an MBA from the Queensland University of Technology. He was also the first Australian to be awarded a Kauffman Fellowship.

Ralph Schmitt (Chief Executive Officer and Managing Director): Mr. Schmitt enables teams to grow businesses more effectively by instating a disciplined approach to cultural refinement, practices and processes in order to become more efficient at execution. These changes have ranged from full transformational through structural changes to product-oriented shifts. As CEO at Exar Corporation, PLX Technology and OCZ he led organizations toward new product strategies and design process adoption that created unique, differentiated market leading products. His experience in technology (semiconductors, systems and software) has been geared most recently toward system-level technology. At OCZ and Toshiba, Mr. Schmitt built effective, vertically oriented teams with all of these disciplines to generate a total solution.

George Lauro (Non-Executive Director): For the past 25 years Mr. Lauro has been a technology entrepreneur, operating executive and venture capitalist and filled Board Director positions at 7 public and 26 private companies. He is a former Managing Director & Partner at Wasserstein Perella, a leading Wall Street Private Equity & Leveraged Buyout firm and Partner at US Equity Partners. He built several companies from prototype stage to high-value exit (M&A/IPO) creating over US$ 2BN of shareholder value. Mr. Lauro was IBM's Managing Director of Tech Commercialization at World HQ and launched IBM spinouts from Watson Research Lab. He began his career as an MIT engineer developing inertial guidance systems for strategic missiles at Draper Lab and MIT Aero/astro. Mr. Lauro attended Brown (BSEE), The Wharton School (MBA) and MIT (grad studies in aeronautical engineering). He has had 23 patents awarded for inventions in inertial guidance, GPS and wireless tech.

Jonathan Tooth (Non-Executive Director): As a principal of Henslow, Mr. Tooth has over 30 years' experience working with companies across all industries and jurisdictions, specializing in equity raisings, M&A and general corporate advisory. In addition, he is a director of two other ASX-listed companies, Austock Group and Vita Life Sciences.

Patents

- Symmetrical Multipath method for determining the distance between two transceivers, EPO number EP1815267.
- Ranging diversity-reception method and receiver, EPO number EP2200384, US patent 9,019,159.
- Method and System for multipath reduction for wireless synchronizing and/or locating, EPO number EP2525236, US patent application 20130021206
- Surface wave transducer device and identification system with such a device, US patent number 6,788,204

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