

Security Matters Limited

High-tech approach to supply chain integrity

Security Matters Limited (ASX:SMX) is an Israeli B2B technology company that listed on the Australian Securities Exchange (ASX) on 15 October 2018. Through the listing on the ASX, SMX raised A\$ 6M. Prior to listing, an amount of US\$ 5.6M (A\$ 7.7M) had been invested into Security Matters Israel by existing investors.

Technology that guarantees integrity of Supply Chains

SMX's proprietary multi-layer technology can be used to mark products during the production and packaging process. These products can subsequently be tracked throughout their supply chain through to the end customer, using irrefutable logs on a Blockchain.

By marking and tracking products using SMX's technology, companies in many sectors, including food, pharma, electronics, precious metals etc, can guarantee the integrity of their supply chains, protect their brands, assure product quality and limit brand liability. Additionally, counterfeiting of their products will become a thing of the past.

Supply chain breaches are a very common occurrence

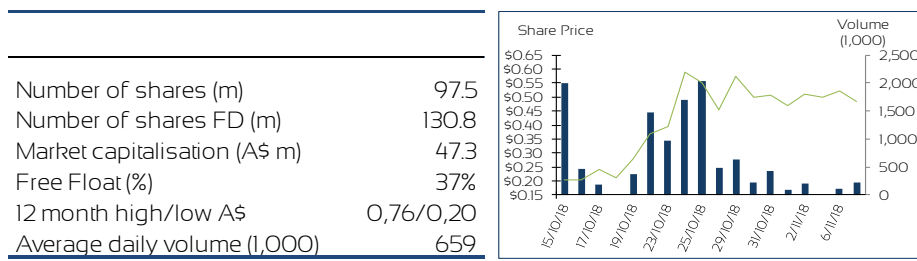
As the recent Australian strawberry crisis illustrated, supply chain breaches are very common and can lead to millions of dollars in direct damages. For brands the indirect damage is often substantially larger as brand names get tarnished and liability issues arise. The latter is especially true in supply situations where inputs and commodities are processed further down the supply chain, e.g. in the chemicals and food industries.

Product counterfeiting is another global problem that can be thwarted with SMX's technology. By invisibly marking branded products and their packaging, product authenticity can be guaranteed by retailers.

The losses for brands globally from counterfeiting alone are in excess of US\$ 500BN annually. Add to that the direct and indirect costs of supply chain breaches, and we believe the scope of the problem that SMX addresses becomes apparent.

Multi-layer technology provides unsurpassed security

Using molecular level, invisible, markers applied to multiple different layers within a particular product, SMX provides a new standard of security. Once applied, these unique markers can be read and logged by SMX's readers, enabling visualization of products moving through their supply chains.



Readers should be aware that TMT Analytics has been engaged and paid by the company covered in this report for ongoing research coverage. Please refer to the final page of this report for the General Advice Warning, disclaimer and full disclosures.

Initiating coverage

Security Matters Limited

(ASX:SMX)

Australia

Security Matters Limited (ASX:SMX) has developed a technology that enables companies in many different sectors to guarantee authenticity of their products as they move through global supply chains, increasing brand protection while limiting brand liability.

[SUBSCRIBE TO OUR RESEARCH HERE](#)

Speculative Buy

Current price: A\$ 0.485

Price target: A\$ 1.13

8 November 2018

Analyst: Marc Kennis

marc.kennis@tmt-analytics.com.au

+61 (0)4 3483 8134

The markers are available in gas, fluid or solid state and can be dropped into existing production lines, minimizing disruption of production processes. SMX can make any combination of markers, providing a nearly unlimited number of codes for its customers.

Go-to-market strategy focuses on industry leaders in various sectors

SMX is partnering with industry leaders in a variety of sectors, such as BASF in the Chemicals sector, to deliver Proof of Concept (POC) and Proof of Value (POV) projects. Based on successful completion, SMX aims to become the de facto standard within each sector. The revenues will typically be generated from customers paying for a full scale solution that includes (1) set up fees to customize markers and for hardware, such as readers; (2) Consumables, i.e. markers will be sold per kilogram and are consumed as they are added to products during the production process; (3) A license to use SMX's software; (4) Future value-added services that will generate revenues per read instance, i.e. every time a product is scanned and logged on a Blockchain, SMX will receive a small fee.

We believe this revenue model will provide a diverse and stable revenue base with each customer, while being highly scalable at the same time.

Accepted into Intel's Ingenuity Partner Program

Recently SMX announced that it had been accepted into Intel's Israel-based Ingenuity Partner Program as one of twelve companies accepted each year. We believe this is quite a significant achievement as this is a clear, third-party, validation of SMX's technology. We expect SMX will be able to accelerate its development work as well as the commercial roll out of its technology on the back of this collaboration with Intel.

Unique set of attributes

We believe SMX's technology is unique in what it enables customers to do. It presents a highly valuable solution to many companies in a range of different sectors, that struggle with integrity of their supply chains and suffer from counterfeiting of their products. We believe SMX's ability to link the physical world to the digital world by irrefutably logging product movements through the supply chain on a Blockchain is of very high value to customers and prospects.

Valuation of A\$ 1.13 per share (A\$ 0.84 fully diluted)

Like many leading-edge technology companies looking to disrupt the supply chain industry, SMX is essentially pre-revenue but on the cusp of commercialization. This makes relative valuation, using EV/Revenues and EV/EBITDA unpractical. Furthermore, the overwhelming majority of SMX's peers are private companies, resulting in limited availability of valuation data.

We have found meaningful valuation data for SMX based on the valuation of a Venture Capital funded peer and a fairly recent M&A deal in this space. Both companies have integrated Blockchain technology into their respective supply chain solutions to improve supply chain integrity and offer advanced track & trace capabilities. Based on the average valuation of this peer group, we see upside for SMX towards A\$ 1.13 per share and A\$ 0.84 on a fully diluted basis. A key near term share price trigger can be conversion of current pilot projects into commercial deals.

Starting coverage with a Speculative Buy recommendation

The current POC and POV projects with market leaders and the willingness of B2B players to pay for SMX's technology this early in the commercialization phase, are clear indications for us that there is likely to be substantial future demand for SMX's products and services, which is why we start our coverage of SMX with a Speculative Buy recommendation.

Security Matters Limited

FY-end December

Profit & Loss account	2015A	FY16A	2017A	Balance Sheet	2015A	FY16A	2017A
Revenues	0.0	0.0	0.0	Current assets			
EBITDA	-0.4	-0.9	-2.1	Cash and marketable securities	0.2	0.1	0.0
EBITDA %	N/A	N/A	N/M	Accounts receivable	0.4	0.1	0.2
Depreciation & Amortisation	0.0	0.0	0.0	Inventories	0.0	0.0	0.0
EBIT	-0.4	-0.9	-2.1	Other current assets	0.0	0.0	0.0
EBIT %	N/A	N/A	N/M	Total current assets	0.6	0.3	0.2
Interest income & expense net	0.0	-0.7	-1.0	Fixed assets			
Other items	0	-0.7	0.0	Net property, plant & equipment	0.1	0.4	0.4
Profit before Tax	-0.4	-2.3	-3.1	Goodwill	0.0	0.0	0.0
Taxes	0.0	0.0	0.0	Other intangible assets	0.1	0.4	0.8
Net earnings	-0.4	-2.3	-3.1	Other assets	0.0	0.0	0.0
Ordinary shares outstanding	74.6	81.2	88.7	Total fixed assets	0.2	0.8	1.1
Earnings per share	-0.01	-0.03	-0.03	Total assets	0.8	1.0	1.3
				Current liabilities			
				Short-term debt	0.06	2.5	3.7
				Accounts payable	0.06	0.3	0.4
				Dividends payable	0.0	0.0	0.0
				Other current liabilities	0.0	0.1	0.1
				Total current liabilities	0.2	3.0	4.4
				Long-term debt	0.5	0.3	0.6
				Total provisions	0.0	0.0	0.0
				Total group equity	0.1	-2.2	-3.7
				Total liabilities and equity	0.8	1.0	1.3
				Capital Structure			
				Ordinary shares			97.5
				Performance shares			-
				Options and warrants (m)			33.3
				Fully diluted			130.8
							-
				Market capitalisation (A\$ m)			47.3
				Market cap. fully diluted (A\$ m)			63.5
				12 month high/low A\$			0,76/0,20
				Average daily volume (1,000)			659.0

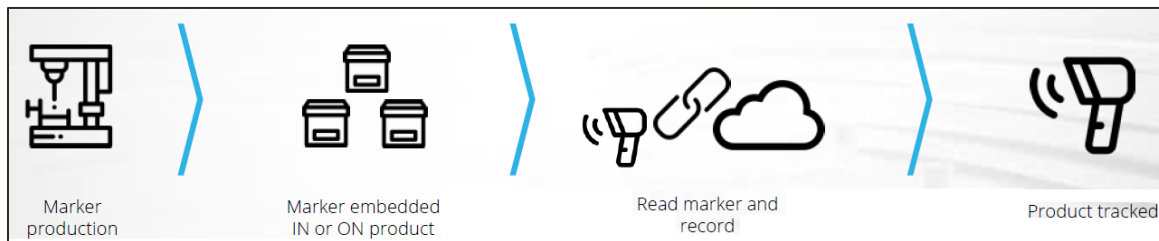
Blockchain technology to provide Supply Chain Integrity

SMX has licensed and is commercializing a technology to permanently and irrevocably mark any object in solid, liquid or gas phase by means of applying molecular-based markers to the product that is being marked. These markers can subsequently be read using SMX's proprietary reader in order to authenticate that particular product. This is done by applying an energy field to the product and measuring the energy levels that are returned by the markers. These markers are custom-made for each customer and each of their products and have a unique profile.

Irrefutable record throughout the supply chain

Each read instance of a particular product's markers can be stored in the Cloud on a dedicated Blockchain, e.g. using Ethereum, where a 'Track & Trace' log is created. In this way, an irrefutable log of a product's journey through its supply chain can be created for use by manufacturers, suppliers, off takers, distributors etc. (Figure 1).

FIGURE 1: TRACK & TRACE PROCESS



Source: Prospectus

Used for brand protection and accountability, Quality Assurance and to ensure supply chain integrity

SMX's technology has specific applicability in maintaining supply chain integrity (a chain that is sound and free of corrupting influences) and quality assurance (QA), for instance to ensure that food ingredients can be traced back as far as the field where they were grown. Other main application areas for SMX's technology are brand authenticity and brand accountability, e.g. Prada being able to guarantee to distributors, retailers and consumers that a certain handbag is an original Prada.

Regarding brand accountability, SMX's technology can help demonstrate that certain product components or ingredients are original, i.e. sourced from a certain, branded manufacturer, which can be very helpful in dispute situations and product liability claims.

Key addressable markets for SMX's technology include;

- Electronics, e.g. chips, circuit boards, high-end mobile phones,
- Plastics and packaging materials,
- Precious metals and stones (e.g. diamonds, gold),
- Raw materials and performance chemicals,
- Food and agricultural products, such as livestock, eggs and seeds (supply chain integrity is an increasingly important topic for food processing companies around the globe),
- Art and valuable objects,
- Paint and coatings,
- Official documents,
- Pharmaceutical products.

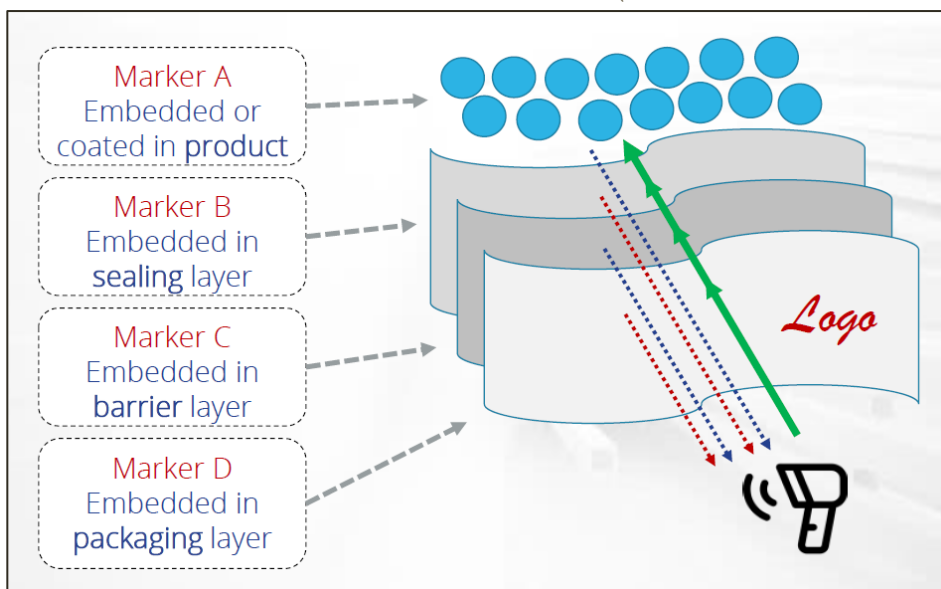
Technology facilitates marking, reading and record-keeping

The basis of SMX's technology is the ability to add markers to multiple layers of materials, with each type of marker having its own characteristics with respect to energy reflection. Hence, when an SMX reader emits an energy field to read markers, it will receive back multiple "signatures" from the various markers. When combined, these signatures make up a unique profile that is associated with that particular product for that particular client (Figure 2).

For solids, liquids and gasses

Compared to other technologies, SMX provides the only technology that can be applied to materials in all three states, i.e. solids, liquids and gasses. This enables application of markers internally during manufacturing and externally post manufacturing, including application to thin films, lacquers, ink etc and during the packaging process.

FIGURE 2: MULTIPLE LAYERS OF MARKERS PROVIDE UNIQUE "SIGNATURE"



Source: Company presentation

Logging "read" instances to a Blockchain to make products tamper-proof

The second stage of SMX's proposition to customers is to record every "reading" by one of its readers on a distributed ledger, or Blockchain. As a product moves through its supply chain, the records of all the "readings" for this product are irrefutably recorded on this distributed ledger, making it a tamper-proof log of the product's journey through the supply chain.

In other words, SMX's technology can provide supply chain integrity from beginning to end and, through recordkeeping on a Blockchain, can provide a secure link between the physical and virtual world of any product.

Markers make the difference

A key differentiating factor of SMX's technology is found in the markers SMX uses to mark materials and products. SMX's markers are tailor-made for each customer and are sequenced from a wide range of molecules, including food additives. In essence, this enables SMX to provide an almost infinite amount of marker combinations (codes) it can add to the various layers to be marked. Furthermore, the markers are very durable and have a shelf life as long as the shelf life of the marked products themselves.

SMX supplies its markers to the customers in the requested state (solid, liquid or gas) and aims to fit in with customers' existing protocols and production processes. This drop-in approach minimizes any adjustments that need to be made to customers' production lines.

A combination of in-house and outsourced manufacturing

SMX manufactures its core markers in-house, while less critical markers, e.g. plastic polymers, are manufactured by partners. The current generation of readers is standard, off-the-shelf hardware, that is modified by SMX in-house, i.e. SMX makes changes to certain hardware aspects and the software that runs on these readers.

The future production of SMX's next-generation readers, which are currently being developed in-house, will eventually be outsourced to a manufacturing partner. However, SMX will build the prototype itself. The aim is to have the next-generation reader commercially available in 2020.

The technology was originally developed for the Israeli Government

SMX's technology was originally developed by the Soreq Nuclear Research Center in Israel. SMX has licensed the source Intellectual Property (IP) from Isorad Ltd (wholly owned by the State of Israel). This includes the right to use, commercialize and further develop the technology.

SMX's right to exclusively commercialize the technology only applies to civilian uses and excludes fuels, oil, crude oil and any other petroleum products. Since licensing the IP, SMX has applied for 13 additional patents (see below).

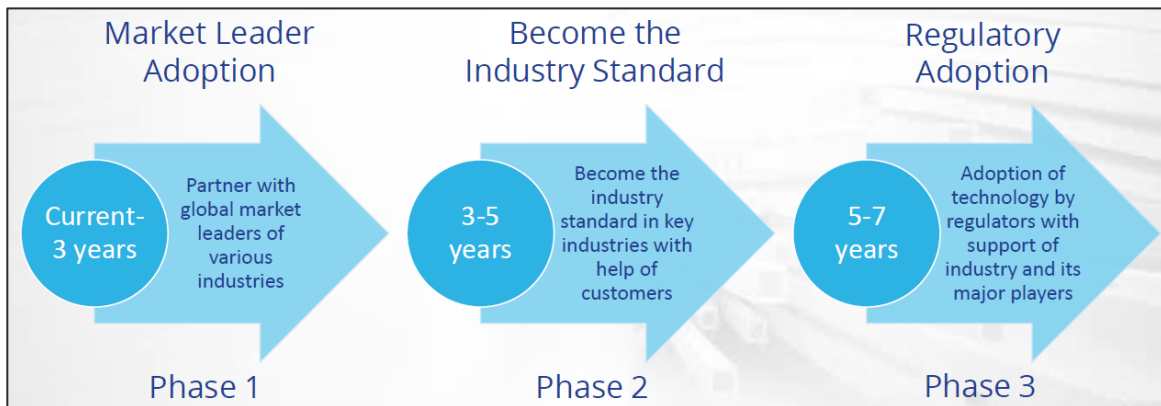
As payment for use of the technology, SMX will pay a royalty of 2.2% on its gross revenues to Isorad for a period of 25 years from 1 January 2020. Additionally, Isorad will receive 1% of the IPO proceeds (see Figure 4) and 2% of the proceeds of a potential, subsequent, secondary capital raise, trade sale or merger.

Go-to-market strategy focused on market leader adoption

SMX is a B2B solutions provider and is targeting organizations that have the most to lose from breaches of their supply chain integrity and counterfeiting, such as brand owners, Original Equipment Manufacturers (OEM's) and owners of crucial supply chains, such as in the food industry and in high-end electronics.

SMX's strategy is to initially target leaders in these various markets and through these relationships become the de facto industry standard over time. Once SMX has established its technology as the industry standard in a certain market segment, the aim is to leverage that position in order to establish regulatory adoption for its technology (Figure 3).

FIGURE 3: GO-TO-MARKET STRATEGY BASED ON MARKET LEADER ADOPTION



Source: Company presentation

Several tie-ups with industry leaders already established

In the execution of this strategy, SMX has established multiple formal and informal partnerships with several companies in various industry verticals, including BASF (raw materials and chemicals), Crossworks Manufacturing (precious stones), Kafrit Industries (plastics) and The Perth Mint (gold). Typically, these collaborations initially take the shape of co-development projects in order to deliver a commercially viable product, a Proof of Concept (POC) or a Proof-of-Value (POV), after which time they can become more commercial in nature.

Longer term, we would expect SMX to also engage with large Logistics companies, such as UPS and FedEx, given that these companies are at the forefront of supply chain management. As such, we believe they can potentially play a crucial role in maintaining integrity of entire supply chains through the adoption of novel technologies, such as SMX's.

Accepted into Intel's Ingenuity Partner Program

On 16 October 2018, SMX announced that it had been accepted into Intel's Israel-based Ingenuity Partner Program as one of twelve companies accepted each year. We believe this is quite a significant achievement as this is a clear, third-party, validation of SMX's technology.

SMX will be able to work with technical experts from Intel and will get access to Intel's global network. Consequently, we expect SMX will be able to accelerate its development work as well as the commercial roll out of its technology on the back of this collaboration.

Revenues to be derived from multiple sources

SMX aims to derive revenues from consultation work in the initial stages of a client engagement. These set-up fees are related to the upfront work SMX will need to do.

In addition, SMX aims to generate revenues from the sale of consumables, i.e. markers, either on a unit basis or per kilogram. As an example, current industry average pricing for plastic additives is between EUR 2,50 and EUR 5,00 per kilogram. Furthermore, SMX will charge recurring fees for reading markers "in the field", use of the Blockchain to record reads and/or a fee per issued code. There is scope to charge for ongoing support services as well.

For instance, a customer will typically pay a set-up fee, a price per kilogram of markers (consumables) and pay a cost per scan each time SMX's readers scan and log a code on the customer's product as it moves through the supply chain.

In addition to direct sales, SMX aims to expand the number of channel partner agreements in which partners sell SMX's products and services in a revenue sharing agreement with SMX.

In regard to its pricing strategy, SMX aims to charge premium prices when compared to existing industry solutions, which we believe is reasonable, given that SMX essentially provides one technology to solve two problems simultaneously. Specifically, through SMX's multi-layer technology, customers are able to provide Quality Assurance (QA) and can cover off their brand liability. Additionally, through use of SMX's technology they have established brand protection and integrity of their supply chain.

The single layer approach of many current solutions doesn't provide this depth of protection, i.e. only the packaging or the outer product layer is marked.

Given that SMX is in its early stages of commercialization with very limited revenues to-date (US\$ 43k in 1HY18 through June), and given the fact that there is a high level of uncertainty around future sales metrics, such as the number of future customers, selling prices, sales volumes, cost levels etc, we have refrained from modelling SMX's financials at this stage. We will endeavor to build a full financial model when more data points are available.

Broad portfolio of patent applications

SMX has applied for patents around 13 patent families pertaining to marking of objects as well as reading, authenticating and analyzing these markings in a variety of materials in various states, i.e. gasses, liquids and solids. Additionally, out of the 13 families SMX has filed 2 patents around a system for virtual currency based on Blockchain Architecture and physical marking.

According to the independent patent report (see prospectus), each of the patent applications contains multiple patentable claims, which, if granted, may help secure SMX's technological position.

ASX listing was preferred over VC funding or listing in Israel

SMX chose to list on the ASX because of the existing business relationships in Australia, including with the Perth Mint, and the ties at the Israeli and Australian government level. Furthermore, SMX considers the Australian investment climate for early-stage technology companies very favourable.

Additionally, while Israel has a strong Venture Capital (VC) infrastructure, the Tel Aviv Stock Exchange (TASE) is not seen as a preferred market for smaller Israeli technology companies. Lastly, the solid regulatory environment around stock market listings in Australia is considered beneficial in dealing with prospective multinational clients.

The A\$ 6M raised in the IPO process will be spent as illustrated in Figure 4.

FIGURE 4: USE OF FUNDS POST-IPO

	Year 1	Year 2
Sales & Marketing		
Personnel	138,429	296,143
Other costs	54,500	64,325
Research & Development		
Reader development	289,833	341,880
Marker bank development	284,267	362,267
Blockchain adjustments	44,000	69,667
Expenses of the offer		
Lead manager	443,313	
Legal costs	255,000	
Royalt payment to Isorad	60,000	
Fees	94,298	
Accountant & taxation fees	58,919	
Other costs	99,517	
Payment of loan	357,143	357,143
Corporate overheads		
Salaries	348,571	383,429
Professional services & office expenses	78,500	82,425
Legal & professional expenses	72,000	75,600
Projects with strategic customers		
Electronics		499,268
Gold		350,837
Diamonds		208,219
Raw materials		230,511
Total	2,678,290	3,321,714

Source: Company

Supply Chain Integrity is the overarching target market

When it comes to supply chains, globalization and fast-growing international trade have made life increasingly hard for supply chain managers. Specifically, making sure supply chains are sound and free of corrupting influences has become extremely difficult as it involves tracking individual product components and ingredients all the way up supply chains, back to their origins.

In most instances, companies far down the supply, e.g. consumer facing companies, don't have visibility that far up supply chains, and hence they need other means to ensure supply chain integrity. Among various challenges, impact from grey market channels, leading to use of counterfeit components and raw materials as well as cargo theft are the largest threats to supply chain integrity.

Mounting losses from counterfeit goods

Counterfeit products are one of the most significant global threats to brands and those who hold intellectual property rights to them. They also pose risks to public health and safety, economic growth and even national security. Over the years, counterfeiters have exploited vulnerabilities in the supply chain to introduce fake parts and goods into legitimate channels, while authentic components are being siphoned off for grey market sale.

According to the OECD, the total value of imported fake goods worldwide was US\$ 461BN in 2013, which amounts to 2.5% of global imports. Middle income economies are the dominant producers, with China accounting for the lion's share. About 70% of the counterfeit materials seized by the US Customs originated from China.

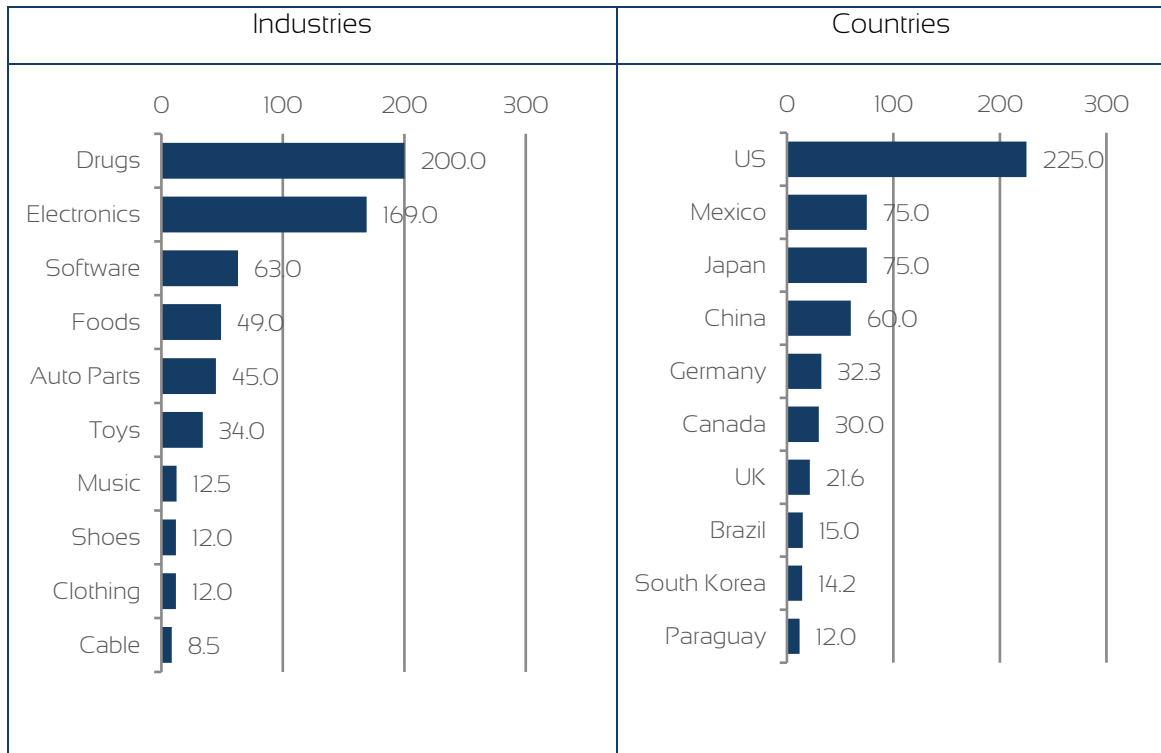
Pharma and Electronics the worst hit

The pharmaceuticals sector is impacted the most from counterfeiting, followed by electronics and software. As an example, about 1M people die every year as a result of consuming lethal counterfeit drugs, according to the International Criminal Policing Association (Interpol). The Pharma industry is the worst hit, primarily due to complex supply chains and lengthy product life cycles amid increasing regulatory scrutiny and affordability-related challenges. Not to mention the increasing number of drug recalls, which further impacts the bottom line of drug makers. According to McKinsey, supply chain-related costs now account for a quarter of drug manufacturing and distribution costs, amounting to an annual spend of US\$ 230BN.

The move to low cost offshore production has led to a surge of counterfeit components in the consumer electronics sector as well. There is a lack of visibility of components as they travel through the supply chain leading to heavy losses globally. According to the US Department of Commerce, 8% of the total global electronic merchandise trade is counterfeit. In the semiconductor industry alone, the grey market accounts for up to US\$ 26.8BN.

In terms of countries, the US is the worst hit (see Figure 5). The Commission on the Theft of American Intellectual Property has estimated that counterfeiting costs US businesses between US\$ 225BN and US\$ 600BN.

FIGURE 5: COUNTERFEIT LOSSES: TOP 10 INDUSTRIES AND COUNTRIES (IN US\$ BN)



Source: Havocscope

Anti-counterfeit measures still seen very much as a cost

Many factors shape product-counterfeiting opportunities. Some of the key factors that effectively contribute to this large and growing problem are economic disparity, complex supply chains due to globalization, technological advancement, consumerism and demand for low prices. Apart from this, high profit margins associated with fake goods, low risk of detection and punishment, and lack of awareness (by consumers, law enforcement, brand owners and others) further fuel the supply of counterfeit parts and goods.

Despite the huge consequences, brand owners typically still consider anti-counterfeiting as a cost rather than a benefit, which limits adoption of anti-counterfeit packaging technologies, which we believe is a major opportunity and a key addressable market for SMX. High upfront investment in both existing and emerging technologies also acts as a market restraint at this stage. However, rising awareness and declining total cost of ownership (TCO) are likely to propel growth of anti-counterfeit technologies over time.

Furthermore, SMX’s SaaS model for Supply Chain Integrity, with limited upfront costs, plays right into this market.

Cargo thefts denting supply chains worldwide

According to the National Cargo Security Council, global cargo theft or loss costs industries US\$ 50BN every year. Cargo thefts are done in a myriad of ways with mislabeling of containers and premeditated criminal intent, such as breaking in to ports to steal goods, being the top ways of executing cargo thefts.

According to the British Standards Institution (BSI), the Americas continue to be the worst hit region when it comes to cargo thefts. However, cargo theft incidents declined in the US and Canada in 2017 owing to increased law enforcement efforts. On the other hand, emerging countries such as Mexico, Brazil and India continue to face high risk of cargo thefts due to rampant corruption in supply chains and presence of powerful organized criminal groups (specifically in Brazil and Mexico). Food & beverage is the most impacted sector when it comes to cargo theft, accounting for 27% of the total theft incidents. This is followed by Consumer Goods (19%), Electronics (10%), Alcohol & Tobacco (8%) and Apparel & Footwear (8%).

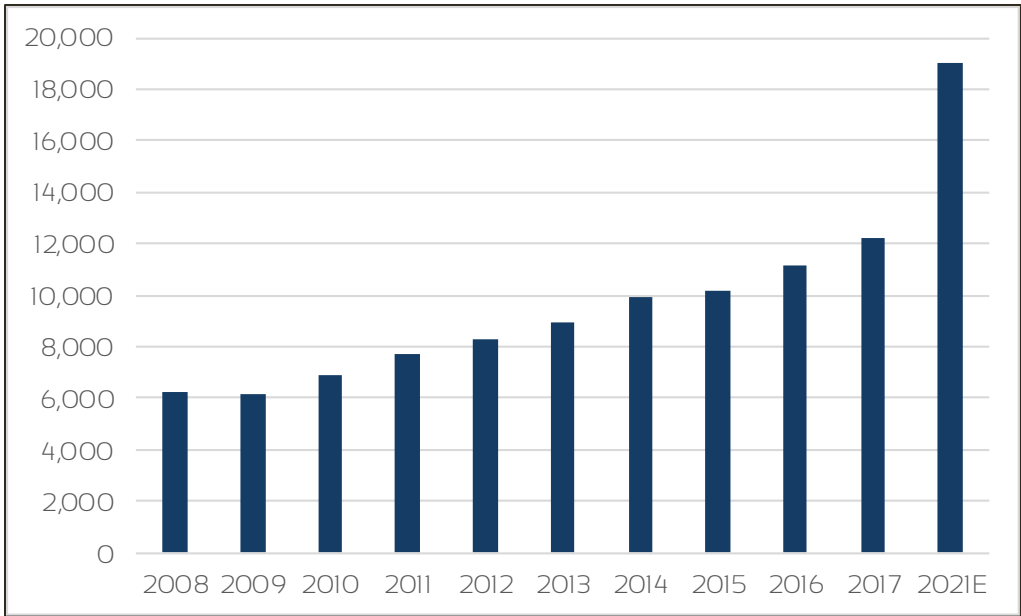
Initially addressing a US\$ 12BN market

In 2017, the global Supply Chain Management software market was approximately US\$ 12BN in size, according to Statista, with the largest players being SAP, Oracle and JDA. It is expected to grow to approximately US\$ 19BN by 2021 (see Figure 6) as industries across the globe increase expenditure on SCM software to control and track locomotive movements.

This market includes software specifically tailored for supply chains but excludes the US\$ 83BN Enterprise Resource Planning (ERP) market. The ERP market is likely to have applicability for SMX’s technology as well, i.e. where it links up specifically with SCM software.

SMX’s solution has wider coverage than the software market, though, as it includes physical marking and identification of products and materials.

FIGURE 6: GLOBAL SCM SOFTWARE MARKET SIZE THROUGH 2021



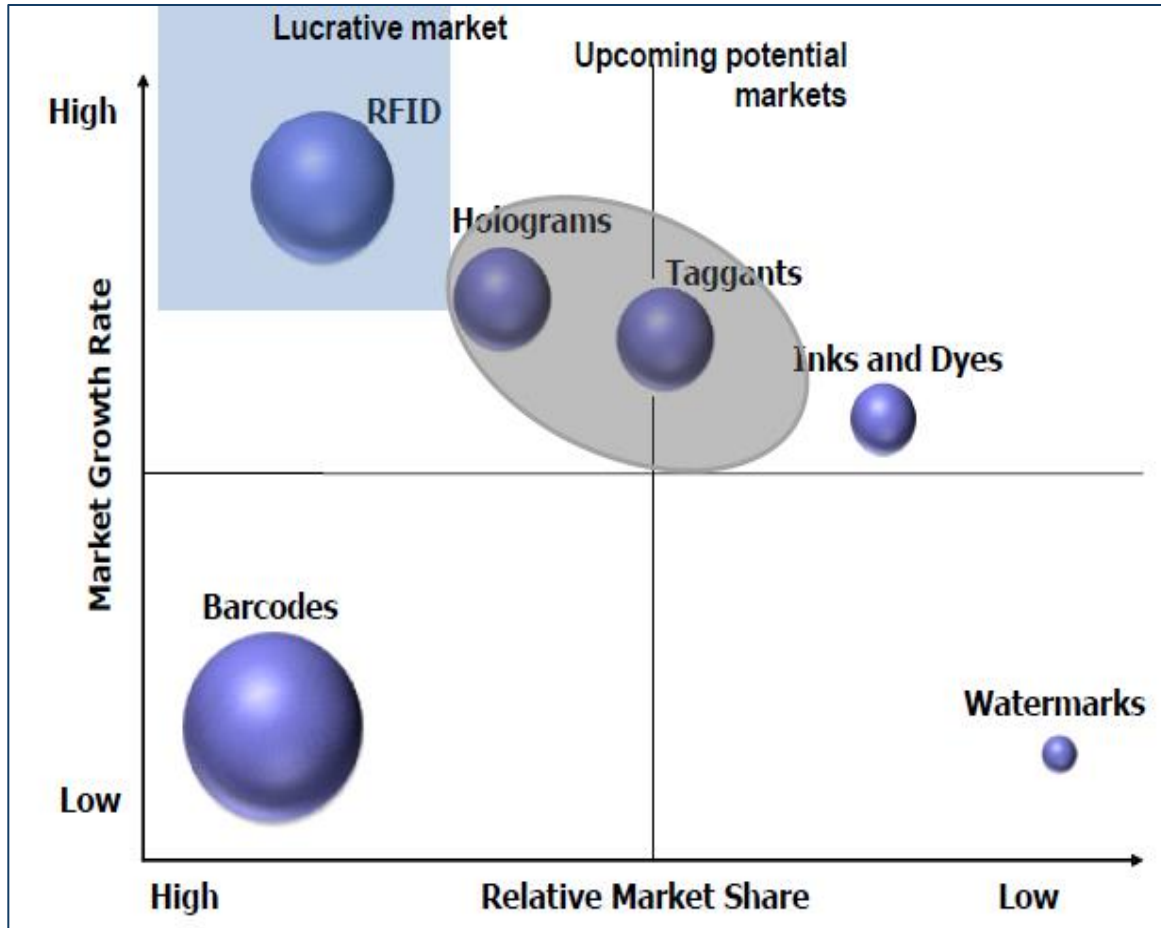
Source: TMT Analytics, Gartner

Anti-counterfeiting technology is a key addressable market

Even though SMX’s offering is very versatile and has applicability in many different business situations, anti-counterfeiting is potentially one of SMX’s largest addressable markets given the substantial and global nature of the problem. Overt (holograms, colour shifting ink, etc.), covert (security labels, invisible printing, etc.), forensics (chemical taggants, DNA micro makers, etc.), and track & trace (RFID, NFC, etc.) are the key anti-counterfeit technologies that exist in the market.

In light of increasing counterfeiting practices, brand owners are increasingly investing in anti-counterfeiting measures to protect their brand and offer quality assurance to consumers. It is being estimated that the global spend by corporates and governments towards combating counterfeit products will reach US\$ 284BN by 2020. Anti-counterfeit technologies, led by RFID tags, are anticipated to account for major share of this expenditure.

FIGURE 7: EXISTING ANTI-COUNTERFEIT PACKAGING TECHNOLOGY LANDSCAPE



Source: TMT Analytics, Allied Market Research

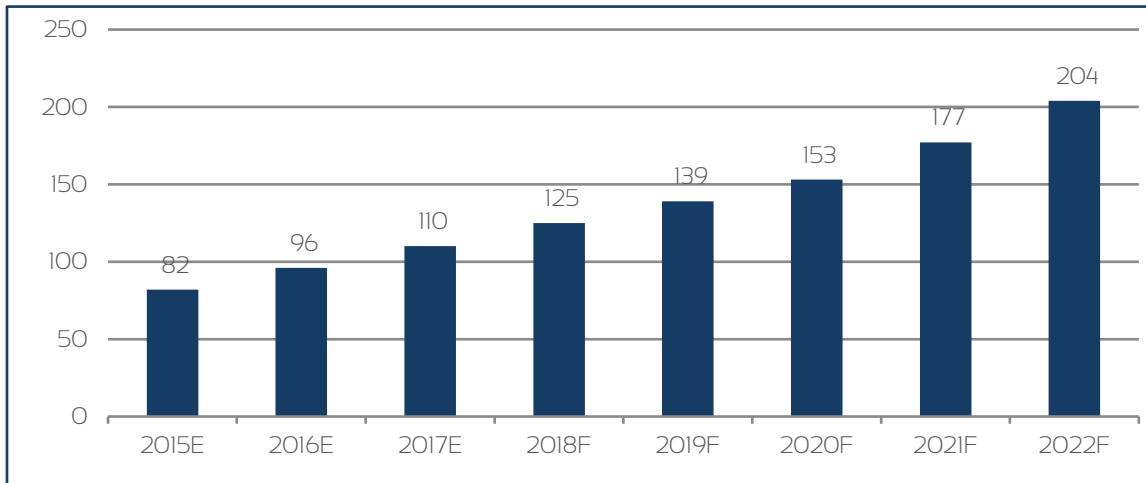
According to IDTechEx, the total RFID market was expected to total around US\$ 11.2BN in 2017, and it is poised to grow at a 5.9% CAGR during 2017-2022, reaching US\$ 14.9BN by 2022. The Pharmaceutical and Healthcare industries are expected to be the fastest growing end-use sector for the RFID tags through 2022, primarily in the US where regulation requiring complete transparency as to the source of every drug will drive market growth. IDTechEx estimates that 18.2BN tags were sold in 2017 versus 15.2BN in 2016. On the other hand, traditional technologies such as barcodes and watermarks are expected to witness lower than average market growth (see Figure 7).

Packaging is the largest market within anti-counterfeit technologies

The global anti-counterfeit packaging market is the largest market among all anti-counterfeit solutions. It is expected to grow from US\$ 110BN in 2017 to US\$ 204BN by 2022, growing at a CAGR of 13.1% (see Figure 8). The industries where packaging is a major concern are

Pharmaceuticals (US\$ 39.7BN), Food & Beverage (US\$ 27BN), Electronics (US\$ 14BN), and Clothing & Accessories (US\$ 12BN).

FIGURE 8: GLOBAL ANTI-COUNTERFEIT PACKAGING MARKET (IN US\$ BN)



Source: TMT Analytics, Allied Market Research

Growing awareness as well as recognition of benefits of anti-counterfeit technologies among manufacturing companies, regulatory bodies and technology providers is likely to drive the market. Another factor fueling the market is the emergence of a new generation of integrated solutions that would enable brands to simultaneously track, trace and authenticate products across global distribution chains, which includes SMX’s solution. Moreover, the market is expected to grow in tandem with increasing scope for counterfeiting. For instance, many years ago the practice of counterfeit goods was limited to luxury goods and currencies, but it is gradually expanding to all consumer goods and OEM industries.

North America was anticipated to be the leading regional anti-counterfeiting market with a revenue contribution of more than 40% in 2017. However, over the forecast period (2018-2022), Asia Pacific and Central & South America are anticipated to witness higher market growth driven by rapid industrialization and tightening regulation to safeguard against the packaging imitation.

SMX’s multi-layer tagging technology works equally well in products and product packaging. Hence, we believe anti-counterfeit packaging market provides a very substantial opportunity for SMX.

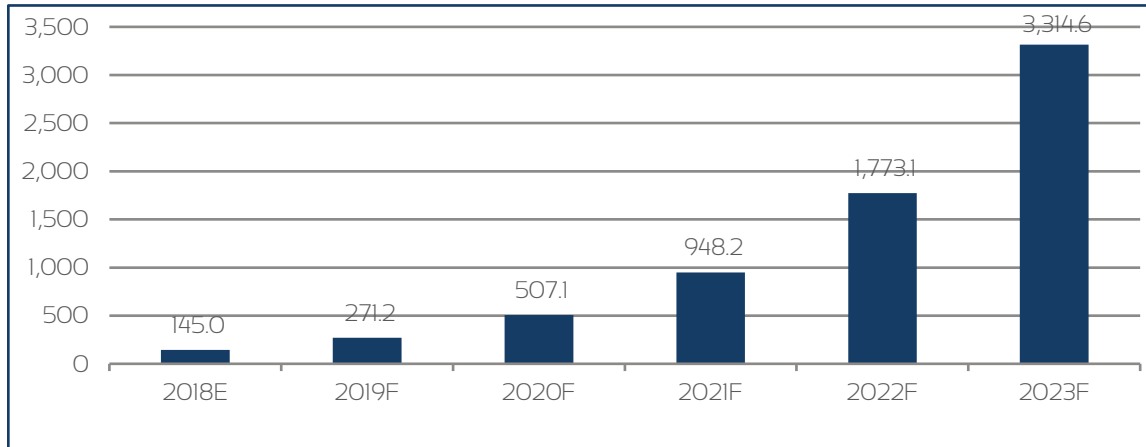
Blockchain emerging as a driving force in supply chain management

According to Supply Chain Dive, a provider of supply chain news and analysis, use of blockchain technology for product tracking is expected to penetrate up to 33% of manufacturers and retailers by 2021. Markets and Markets estimates that the global blockchain-enabled supply chain market is worth US\$ 145M in 2018 and will grow at a CAGR of 87% during 2018-2023 to reach US\$ 3,3BN by 2023 (see Figure 9). This growth is anticipated to be driven by increasing use of blockchain technology for tracking products and demonstration of authenticity of products to end-consumers.

Furthermore, the rising globalization and sea borne trade have increased the chances of cargo being stolen at any point during transportation. To counter this challenge, supply chain

managers are anticipated to increasingly rely on Blockchain’s distributed ledger functionality. The technology provides a transparent and immutable record of all transactions, which makes false pickups or resale of stolen goods into genuine supply chains nearly impossible. In addition, it enables tracking of goods movement from start to finish and will immediately flag tampering with delivery information, which should result in more secure supply chains.

FIGURE 9: GLOBAL BLOCKCHAIN-ENABLED SUPPLY CHAIN MARKET (IN US\$ MN)



Source: TMT Analytics, Markets and Markets

According to research firm, Technavio, the advent of Blockchain-as-a-Service (BaaS) will be one of the key emerging trends in the global Blockchain market. In a BaaS model, vendors set up the Blockchain-connected nodes on the enterprise's behalf and manage it at the back-end. The growing evolution of Blockchain-as-a-Service is encouraging vendors such as SAP, IBM, Oracle, Microsoft and Amazon Web Services (AWS), to invest in the technology through new product launches.

For instance, in June 2018, Amazon launched a solution which allows enterprises to test Blockchain technology without the risk or capital costs of deploying it in-house. In April 2018, Amazon introduced a Blockchain technology framework for Ethereum and Hyperledger Fabric, which allows enterprises to create and deploy secure Blockchain networks.

Technavio estimates that the Americas would be the largest Blockchain supply chain market accounting for 56% of the global market, followed by EMEA and Asia Pacific, respectively. However, during 2018-2023, the Asia Pacific region is expected to register the highest incremental growth, followed by the EMEA region.

In terms of end-application, the Healthcare & Life sciences sector is projected to register the highest growth as Blockchain-enabled solutions enable companies to reduce illegal production of harmful medicines and counterfeit drugs and limit other problems such as improper stock control and lack of visibility and transparency across the supply chain.

The anticipated growth in Blockchain-based supply chain solutions puts SMX in a very favourable position owing to its expertise in this space. SMX’s technology enables supply chain participants to read each product, component and ingredient marked with SMX’s markers on a secure Blockchain record, allowing users to view the journey of these products, components and ingredients through the supply chain. This may prevent reputational damage, legal and social sanctions as well as financial loss from supply chain breaches.

Competitive Landscape

On a broad level, Security Matters competes with companies that offer anti-counterfeit packaging products and services, i.e. providers of brand protection and security solutions (see Figure 10).

Currently, RFID is the dominant technology within the existing technologies landscape. The RFID industry is highly fragmented with more than 1,000 companies competing globally. As per IDTechEx, only 7 companies earn more than US\$ 100M in revenue through their RFID solutions, and another 11 firms earn between US\$ 20M and US\$ 100M. The majority of the RFID players have revenues of less than US\$ 20M.

Also, most of the key RFID-based competitors are headquartered in the US as the country offers the most lucrative opportunities in its retail, logistics and manufacturing sectors. However, the technology landscape is gaining momentum in Asia and Europe with emergence of small players looking to capitalize their patented technologies.

FIGURE 10: COMPETITIVE LANDSCAPE: BRAND PROTECTION & SECURITY SOLUTIONS (INDICATIVE LIST)

	Headquarter Location	Technology Focus	Sector Focus*			
			P&C	F&B	E&A	C&A
Alien Technology	US	RFID				
AlpVision	Switzerland	Digital Technologies				
Avery Dennison	US	RFID and Taggant				
Zebra Technologies	US	RFID				
Inksure Technologies	US	Taggant				
Impinj	US	RFID				
Honeywell	US	RFID and Taggant				
Authentix	US	Taggant				
Flint Group	Luxembourg	Inks and Colorants				
Spectra Systems	US	Inks, Threads, Coatings				
YPB Systems	Australia	Barcodes, NFC, Threads				
Applied DNA Sciences	US	Molecular Tags				
Nanotech Security	Canada	Nanotechnology				
Dotz Nano	Australia	Graphene Quantum Dots				

**P&C = Pharmaceuticals & Cosmetics; F&B = Food & Beverage; E&A = Electronics & Automobiles; C&A = Clothing & Accessories*

Source: TMT Analytics

Alien Technology (Alien, estimated revenue of US\$ 50M in 2016) is a leading provider of high-volume, low-cost, Electronic Product Code-complaint RFID products. Using Fluidic Self Assembly (FSA), a patented manufacturing process, Alien manufactures tags and readers used in a variety of applications, including supply chain management, logistics operations and anti-counterfeiting to improve inventory management and reduce operating costs.

Avery Dennison (NYSE:AVY; revenues of US\$ 6.6BN in 2017) is a global leader in providing labelling and packaging materials and solutions. AVY offers tailored brand protection and loss prevention solutions using RFID technology via its largest revenue-generating segment called Label and Graphic Materials.

AlpVision is another dominant player and offers digital invisible technologies for product authentication and counterfeit protection. AlpVision's solutions include brand protection, document security and custom solutions (such as contract R&D, Internet/Intranet online solutions, and feasibility studies and audits). AlpVision claims that it achieved profitability in just 2 years after its inception in 2001 and has been growing steadily ever since.

Within the emerging technologies segment, Applied DNA Sciences, Nanotech Security and Dotz Nano are noteworthy players:

Applied DNA Sciences (NASDAQ: APDN; revenue of US\$ 4.6M in 2017) provides molecular tags that can be embedded into raw materials or applied to the surface of almost any object. Nanotech (TSVX: NTS; revenue of CAD\$ 9.4M in 2017) produces nano-optic products that have brand protection and enhancement applications within markets such as banknotes, tax stamps, secure government documents, commercial branding, and the pharmaceutical industry. Dotz Nano (ASX: DTZ; revenue of A\$ 0.1M in 2017) manufactures graphene quantum dots that can be used for tracing, anti-counterfeiting and product-liability solutions. DTZ is currently in the phase of testing its technology by conducting industrial pilots (primarily oil & gas industry).

Valuation of A\$ 1.13 per share (A\$ 0.84 fully diluted)

Like many leading-edge technology companies looking to disrupt the supply chain industry, SMX is currently pre-revenue but on the cusp of commercialization. This makes relative valuation, using EV/Revenues and EV/EBITDA unpractical. Furthermore, the overwhelming majority of SMX’s peers are private companies, resulting in limited availability of valuation data.

We have found meaningful valuation data for SMX based on the valuation of a Venture Capital funded Everledger and a fairly recent M&A deal in this space, MacroPoint which was acquired for A\$ 148.6M by Canada-based Descartes in 2017 (Figure 11).

Both companies have integrated Blockchain technology into their respective supply chain solutions to improve supply chain integrity and offer advanced track & trace capabilities.

FIGURE 11: SECURITY MATTERS PEER GROUP

Company	Valuation
Macropoint (acquired)	148.6
Everledger (VC funded)	72
Average	110.3

Source: TMT Analytics, Dealroom.co, S&P Capital IQ

Based on the average valuation of these peers, we see upside for SMX towards A\$ 1.13 per share and A\$ 0.84 on a fully diluted basis. A key near term share price trigger can be conversion of current pilot projects into commercial deals.

Conclusion: Starting coverage with a Speculative Buy

We believe SMX’s technology presents a highly valuable solution to many companies, in a range of different sectors, that struggle with integrity of their supply chains and suffer from counterfeiting of their products. We believe SMX’s ability to link the physical world to the digital world by irrefutably logging product movements through the supply chain on a Blockchain is of very high value to customers and prospects.

Furthermore, the current POC and POV projects with market leaders and the willingness of B2B players to pay for SMX’s technology this early in the commercialization phase, are clear indications for us that there is likely to be substantial future demand for SMX’s products and services, which is why we start our coverage of SMX with a Speculative Buy recommendation.

As indicated earlier, we have refrained from modelling SMX’s financials at this time, and hence from providing a valuation and price target, given the high-level of uncertainty around future sales metrics and customer uptake. We will endeavor to build a full financial model when more data points are available.

Near term share price catalysts

- Announcements of customer wins in SMX’s key target markets.
- Successful delivery of POC’s or POV’s currently underway with various industry and channel partners, resulting in conversions into commercial deals.
- Announcements of additional collaborations with industry leaders in various sectors, in line with SMX’s go-to-market strategy.

SWOT analysis

Strengths:

- Given its unique characteristics, SMX's multi-layer technology is ideally suited to provide much-needed integrity of global supply chains.
- The technology is highly flexible and proprietary, making it suitable for many different industries and at premium prices.
- The technology is highly scalable and is likely to generate network effects, i.e. individual links in a supply chain will want other links in their supply chain to also adopt the technology so as to create a tamper-proof chain.

Weaknesses:

- SMX is a young company that has yet to fully roll out its technology. This may give competitors an edge in competing for the same prospective customers in the near term.
- Despite the fresh capital raised in the IPO process, certain prospective customers may consider SMX's balance sheet as not strong enough just yet to do business.
- SMX may require further capital to develop and commercialize its technology, which may be unavailable or may only be available at unfavorable terms, depending on prevalent market conditions.

Opportunities:

- Rising numbers of supply chain breaches globally are increasing the need for technological solutions, such as SMX's, to monitor and safeguard these supply chains.
- Counterfeiting is rapidly becoming one of the largest threats to branded manufacturers around the world, presenting excellent opportunities for companies such as SMX to sell solutions to these brands.

Threats:

- Large, well-funded competitors may compete on price to push SMX out of future tender processes, despite SMX potentially having better technology.

Appendix

Board of Directors

Everardus (Ed) Hofland (Executive Chairman): Ed Hofland is a co-founder of Security Matters Israel and a business leader who has brought in multi-million dollar investments to the Arava Desert region of Israel. Ed Hofland is the chairman of leading industry, technology and agriculture companies in Israel, such as: i) Chairman of Arava Power Company, Israel's leading solar power company; ii) Chairman of Algatech, micro-algae producer that markets its products worldwide, including Japan, India, New Zealand and Europe; and iii) Chairman and CEO of Ardag Fish Farm that produces fish and caviar. Ed Hofland has been a director of Security Matters Israel since January 2015 and was recently appointed as a Director of SMX.

Haggai Alon (Founder, Executive Director, Chief Executive Officer): Haggai Alon is a co-founder of Security Matters Israel and has over 17 years of experience in commercializing technology. Haggai Alon has commercialized technology out of the Ministry of Defense in Israel as well as in the private sector. Haggai Alon has a Master's degree out of Tel Aviv and Haifa Universities in international relations and political science and will soon complete his Ph.D.

David Rosenblatt (Executive Director and Vice-Chairman): David Rosenblatt is a co-founder of Security Matters Israel and has developed and scaled businesses in Silicon Valley, Wall Street and Israel. David Rosenblatt's experience spans the healthcare, technology, finance and energy industries. He has experience in both building established businesses and start-ups, including serving as Managing Director at BlackRock and co-founding Quicken Loans at Intuit. Earlier in his career, David Rosenblatt practiced corporate and international law with United States law firm Weil, Gotshal & Manges. David Rosenblatt holds a MBA with distinction from Harvard Business School, a Juris Doctor from Northwestern University Law School, and a Bachelor of Science with honors from Pennsylvania State University. David Rosenblatt has been a director of Security Matters Israel since January 2015 and was recently appointed as a Director of SMX.

Dr. Gregory J Clark (Non-Executive Director): Dr. Gregory Clark is a world-renowned scientist, technologist and businessman. He is currently the Chairman of KaComm Communications. Dr Gregory Clark spent 15 years as a Research Staff Member and Group Leader in the IBM Research Division in New York. Subsequently, he became the President and subsequent Director of News Technology Group. Dr Gregory Clark was also the President and Chief Operating Officer of Loral Space and Communications, the world's largest commercial satellite manufacturer and, at that time, the world's second largest satellite operator. Dr Gregory Clark is currently a Director of NextDC (ASX: NXT), the largest Australian data centre company. He is Chairman of the Australian National University Advisory Board on Science and Engineering, Chairman of CUDOS, a research centre of excellence across several universities, a Questacon Board Member and a Royal Institution Australia Board Member. Recently, Dr Gregory Clark retired as a Director of the ANZ Banking Group (ASX: ANZ). In the past he has chaired a number of companies in the Americas and Europe.

Jovanka Naumoska (Non-Executive Director): Jovanka Naumoska is a corporate lawyer with ASX board-level experience. She serves as non-executive director and company secretary for Imagion Biosystems Ltd (ASX: IBX), a medical device company that develops detection methods for several types of cancer. She has also served as senior corporate lawyer specializing in intellectual property for 15 years and currently manages a business excellence function and is a policy advisor for an Australian government research agency. She currently holds the position of Manager, Business Excellence at such agency. Jovanka Naumoska holds Bachelor of Science and Bachelor of Law degrees and a Graduate Diploma of Legal Practice from the University of Wollongong. She also holds a Graduate Diploma in Applied Corporate Governance from the Governance Institute of Australia.

Amir Bader (Non-Executive Director): Amir Bader brings to SMX extensive experience in the management of agricultural businesses. He is currently the manager of one of Israel's largest dairy farms and has more than 20 years of experience in managerial positions in dairy farms and other agricultural projects in Israel and Europe. Mr. Bader also served as Kibbutz Degania A's (a seed shareholder in Security Matters Israel) business manager for five years, during that period he served as the board member of several subsidiaries and companies related to the Kibbutz. Mr. Bader has been a director of Security Matters Israel since 2015 and was recently appointed as a Director.

Advisory Board

John Poynton AO is Chairman of Jindalee Partners, Strike Energy Limited and SC8 Limited. He is a Board Member of the Future Fund Board of Guardians, a Director of Crown Perth and the Security Research Institute Advisory Board. John Poynton AO is also the Chairman of Council of Christ Church Grammar School and Giving West. He has previously served as the Chairman, Deputy Chairman or Non-Executive Director of a number of ASX listed companies, Federal Government boards, education institutions and not-for-profit enterprises. Mr. Poynton is an Officer in the General Division of the Order of Australia and is a past recipient of a WA Citizen of the Year award in the industry and commerce category. He holds a Bachelor of Commerce and an honorary Doctor of Commerce from the University of Western Australia. Mr. Poynton's experience in doing business in Australia is set to help SMX in achieving its goal of creating strong relationships with Australian business partners and customers.

Major General Ami Shafran has been the head of Security Matters Israel's advisory board since 2017. As such, he provides his technology and business development experience to SMX. Mr. Shafran is the chairman of ElSight (ASX:ELS), a successful Israeli technology company listed on the ASX. He is also the former head of the Israeli Defense Force Information and Communications Technology Command. He held numerous prestigious and prominent positions in Israel's Defense and Intelligence forces, including Head of research and development in Israel Ministry of Defense, Research and Development Directorate, and the Research and Development Attaché at the Israeli embassy in the USA. Major General Ami Shafran holds a Bachelor of Science Degree in Electrical Engineering from the Ben Gurion University in Beer Sheva, and an MBA from the Tel Aviv University.

Yair Seroussi is an experienced business leader in Israel's financial sector. He served as the Chairman of Bank Hapoalim, Israel's largest bank and a public company, for more than seven years. Yair Seroussi is the founder of Morgan Stanley activity in Israel and headed the Israeli activity for more than 16 years. Yair Seroussi has also served as a director in several leading public companies in Israel with relevant areas of activity, including Israel Corp. (a leading industrial holding company that was the owner of ICL (chemicals and minerals), Tower (Electronics), Zim (Logistics) and Frutarom (food industry). As an Advisory Board member of Security Matters, Mr. Seroussi brings his experience with management of public companies.

GENERAL ADVICE WARNING, DISCLAIMER & DISCLOSURES

The information contained herein ("Content") has been prepared and issued by TMT Analytics Pty Ltd ABN 17 611 989 774 ("TMT Analytics"), an Authorised Representative (no: 1242594) of BR Securities Australia Pty Ltd. ABN 92 168 734 530, AFSL 456663. All intellectual property relating to the Content vests with TMT Analytics unless otherwise noted.

DISCLAIMER

The Content is provided on an as is basis, without warranty (express or implied). Whilst the Content has been prepared with all reasonable care from sources we believe to be reliable, no responsibility or liability shall be accepted by TMT Analytics for any errors or omissions or misstatements howsoever caused. Any opinions, forecasts or recommendations reflect our judgment and assumptions at the date of publication and may change without notice. TMT Analytics will not accept any responsibility for updating any advice, views, opinions or recommendations contained in this document.

No guarantees or warranties regarding accuracy, completeness or fitness for purpose are provided by TMT Analytics, and under no circumstances will any of TMT Analytics, its officers, representatives, associates or agents be liable for any loss or damage, whether direct, incidental or consequential, caused by reliance on or use of the Content.

GENERAL ADVICE WARNING

The Content has been prepared for general information purposes only and is not (and cannot be construed or relied upon as) personal advice nor as an offer to buy/sell/subscribe to any of the financial products mentioned herein. No investment objectives, financial circumstances or needs of any individual have been taken into consideration in the preparation of the Content.

Financial products are complex, entail risk of loss, may rise and fall, and are impacted by a range of market and economic factors, and you should always obtain professional advice to ensure trading or investing in such products is suitable for your circumstances, and ensure you obtain, read and understand any applicable offer document.

DISCLOSURES

TMT Analytics has been commissioned to prepare the Content. From time to time, TMT Analytics' representatives or associates may hold interests, transact or hold directorships in, or perform paid services for, companies mentioned herein. TMT Analytics and its associates, officers, directors and employees, may, from time to time hold securities in the companies referred to herein and may trade in those securities as principal, and in a manner which may be contrary to recommendations mentioned in this document.

TMT Analytics receives fees from the company referred to in this document, for research services and other financial services or advice we may provide to that company. The analyst has received assistance from the company in preparing this document. The company has provided the analyst with communication with senior management and information on the company and industry. As part of due diligence, the analyst has independently and critically reviewed the assistance and information provided by the company to form the opinions expressed in the report. Diligent care has been taken by the analyst to maintain an honest and fair objectivity in writing this report and making the recommendation. Where TMT Analytics has been commissioned to prepare Content and receives fees for its preparation, please note that NO part of the fee, compensation or employee remuneration paid will either directly or indirectly impact the Content provided.

RECOMMENDATIONS

TMT Analytics' issues a BUY recommendation in case of an expected total shareholder return (TSR, share price appreciation plus dividend yield) in excess of 25% within the next twelve months, an ACCUMULATE recommendation in case of an expected TSR between 5% and 25%, a HOLD recommendation in case of an expected TSR between -5% and +5% within the next twelve months and a SELL recommendation in case of an expected total return lower than -5% within the next twelve months.