SUPER MARKETS

A PUBLICATION OF SIM INC • ISSUE FIVE

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Financial Editorial

Financial Editorial (FE) has had a brief but rich history having published 5 issues of our very own in-house magazine, Super Markets. FE was conceptualised with the intent to facilitate one of Investment & Networking Club's (INC) mission "To promote financial literacy" through our magazine publications. It also serves as a platform to encourage our members and readers to form their opinions on the happenings in the world.

A Publication Of

INC

SIM Investment & Networking Club

Investment & Networking Club (INC) was founded in 2008 and is a student club within the Singapore Institute of Management (SIM). INC seeks to promote financial literacy among SIM students and youths in Singapore through sound education and experiential learning.

INC is currently the leading investment-focused student network in SIM that seeks to establish and maintain long-term partnerships with financial institutions and other societies dedicated to advancing financial knowledge in Singapore. Together with the investment clubs of NUS, NTU, and SMU, INC is part of the Securities Investors Association, Singapore (SIAS) Youth Chapter.

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Magazine design | Arina Rauf

EDITORS' note

"Writing is an exploration. You start from nothing and learn as you go."

This perfectly describes how the journey of creating the 5th issue of Super Markets has been like. Many, if not most, of the articles started as something that our writers had an interest in, which they then painstakingly researched upon and crafted into an article that you now see in the magazine.

We hope that this magazine tickles your curiosity on the world of finance and kickstart your journey towards financial literacy.

With that said, my watch has ended. I hope that you have an enjoyable time reading this issue and look forward to our subsequent publications.

JOSHUA CHAN
DIRECTOR

In this year's issue of Super Markets, our team of dedicated editors and writers brings to you a range of financial topics for your reading pleasure, with a special focus on FinTech.

The growing presence of FinTech has set in motion a new wave of technological advancement today – from internet banking and mobile payments, to money transfers, crowdfunding and online insurance. FinTech influences not just the financial services industry but also every business and organisation the industry deals with, ultimately disrupting business norms and processes, and radically altering consumer behaviour.

Keeping this in mind, I hope that this issue of Super Markets leaves you with a better insight into the financial world.

ANDY LIM
DEPUTY DIRECTOR

Well, I guess the nightmares about flipping through the magazine and discovering an error has finally end.

Heartfelt gratitude to my team of editors and writers. Without their unrelenting spirit and determination to perfect their work for days on end, this issue would not be sitting in your hands. From visualisation to reality, words cannot properly describe how great this accomplishment feels.

I am delighted to present the 5th issue of Super Markets to you, and I hope you will have as much fun reading as we did creating it.

CANDY TIO
DEPUTY DIRECTOR


WILSON TAN

It's often the things we are sure of that keeps us from learning. Empty your cup, challenge yourself.


NG HONG KHAI

It's the little details that are vital. Little things make big things happen.

SNG YONG JIE

Ancora Imparo


PALLAK JAIN

Life is not a fairy tale. If you lose your shoe at midnight,

YOU'RE DRUNK.


ESTHER ONG

D(reaming).
E(xperiencing).
A(dventuring).
D(iscovering).


XIE SHENGLIN

Can't do it, skip it, then come back to it.


CHONG GU XIE

"Alamort" - Half dead of exhaustion

CONTRIBUTORS

Duck off. 🦆🦆


KENNETH ONG

Constantly torn between sleep is for the weak and sleep is for the week.


ARINA RAUF

Don't give up! You're getting stronger each day and ready to fight against the odds.


TAN SOCK SEAN

Grasp financial concepts just like how you break down the stacked burger layer by layer in digestible pieces for gradual comprehension.


TANG WEI QI

Life is short, smile while you still have teeth.


ANGGA WIJAYA

No matter what happens, don't stop moving.


ZOELINE CHONG

CONTENTS

GENERAL NEWS

TECHNOLOGY

INTERVIEWS

FINANCE

The Cashless Conundrum

A closer look into the global push for cashless societies

Words | Art Wilson Tan

Cashless, though a recent buzzword, is by no means a new concept. Physical notes have long been predicted to become obsolete; First with the advent of card payments, and now the rise of internet payment. The million-dollar question remains; will cash finally be dethroned?

WHAT IS A CASHLESS SOCIETY?

A cashless society is the hypothetical scenario in which a society migrates from the use of physical money to digitalised forms of payment, exclusively exchanged electronically. Some examples of cashless transactions currently employed include bank cards, contactless payments and mobile transactions.

WHY THE GLOBAL PUSH FOR CASHLESS?

The appearance of money has evolved over the centuries – from physical goods such as food and weapons to bronze coins, and finally the more efficient paper currency we see today. However, there are deep-rooted problems with cash that are generally overlooked, and going cashless just might solve some of these issues.

One of the problems that cash presents, is that it is tangible. The implication is that cash comes with dollar costs, a seldom considered fact. From the Central Bank to Automated Teller Machines (ATM) to the hands of individuals all around, the printing, transporting, guarding, distribution and processing of cash are tagged with a cost.

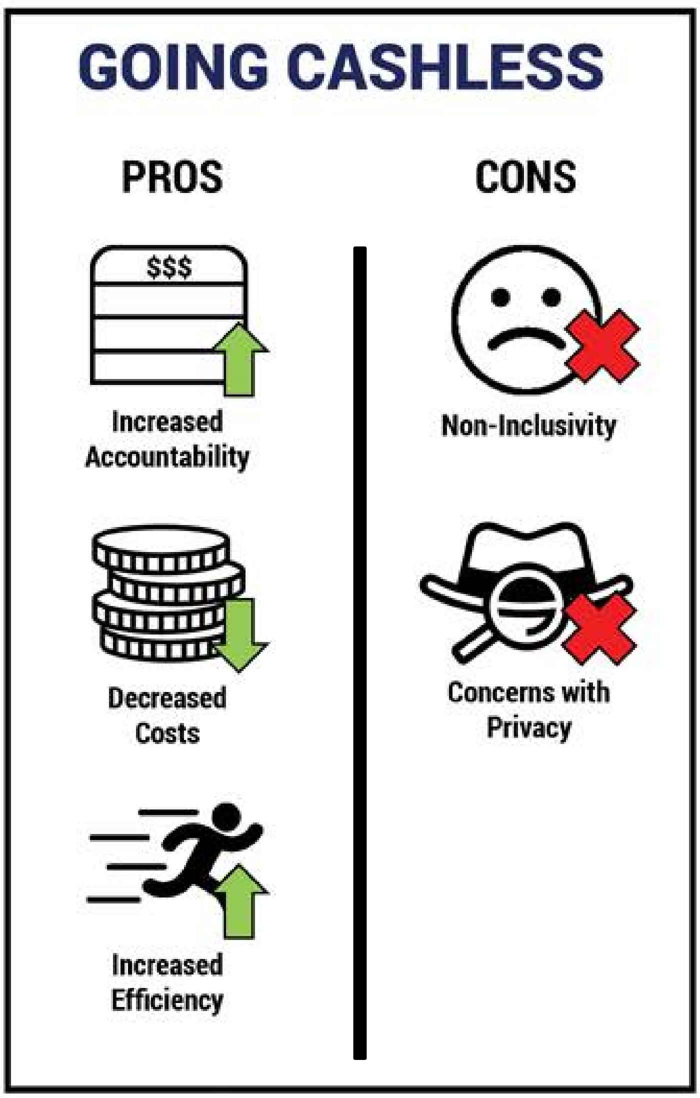
Another problem associated with cash is its anonymity and un-traceability. We have all seen it on TV: illegal transactions are almost always transacted in cash, and this holds true in reality. Cash is the preferred medium of exchange for illicit activities as it is difficult to trace and is anonymous; money can switch hands without any sort of record or identity tagged to it, which makes it anonymous and untraceable. As a result, cash has always been the preferred medium by criminals and terrorists for transaction.

The adoption of cashless is slated to bring about greater efficiency and convenience to society. A 2013 study by Tufts University found the annual costs of cash transactions in the United States amounting to an estimated \$200 billion. This includes \$55 billion in higher costs to businesses, \$43 billion for households and \$101 billion in missed tax revenues (due to off-book transactions in cash). Having money in digital format would reduce these unseen costs of cash transactions significantly, individuals adopting cashless will find transactions more efficient, reducing the need for cash deposits and withdrawals. Eliminating cash as a means of exchange would also make life harder for criminals and tax-evaders, as the flow of money is recorded digitally.

NOT ALL ROSES AND SUNSHINE

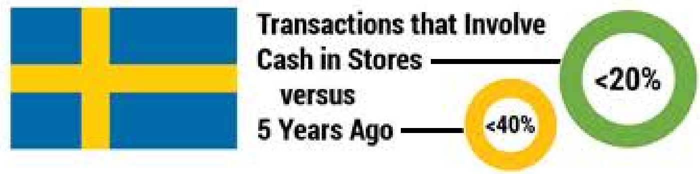
Going cashless, as is the case with most other technological innovations, is a double-edged sword. One of the biggest drawbacks of a cashless society is financial inclusivity. Be it cards or e-payments, there are barriers associated with going cashless; people must be digitally literate and banked. This makes it hard for certain groups to go cashless, such as the poor and the elderly. The problem of financial inclusivity extends beyond just individuals. Although cashless reduces some of the frictional costs of cash, it does not eliminate costs entirely. Card and e-payment companies charge a percentage of the transaction value in service fees, which may prove too expensive for small business to adopt such payment methods.

Privacy is another drawback often raised by critics of cashless systems. With transactions being done and recorded online, where, how much, and what we buy, becomes vulnerable to hacks and surveillance by governments and institutions. Our lives become an open book for those who have access to such information. There are plenty of incentives to obtain such information, as governments and institutions can profit from the trackable data. A well-established example would be that of targeted advertising based on the information obtained from spending habits of common people all around.

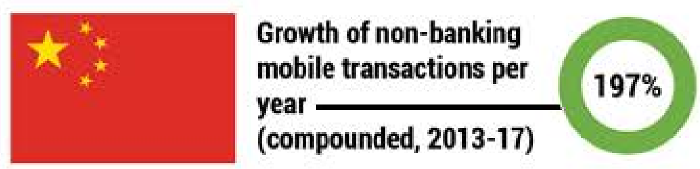


CASHLESS AROUND THE GLOBE

Much like the space race during the Cold War, we now have the cashless race, where countries around the world are racing towards becoming cashless. Current forerunners in the cashless race include Sweden and China.



Recognised as the most cashless society in the world presently, Sweden has managed to achieve a feat of having only about 1% of the value of all transactions made using cash. Beginning with public transport, the Swedes rooted out cash payments in public transport in 2007 to curb the rising number of bus robberies. Since then, Sweden has come a long way as shops have also jumped onto the cashless bandwagon, citing quicker transactions and reduced risk of robberies as main reasons. Concurrently, home-grown fintech innovations have also aided Sweden in the transition, with some noteworthy companies transforming the culture of transactions in the country. Swish is a mobile payment system which allows fast and convenient transactions using mobile numbers. iZettle, another fintech marvel, is a mobile card reading tool that allows credit card transactions anywhere with an internet connection, enabling small retailers to adopt card payments. These two payment solutions have proved to be a huge hit among its people; more than half of Sweden's 10 million population are now using Swish, and even the homeless are now able to accept card payments easily.



An oft-mentioned example of a country on-route to becoming a cashless society, China has experienced unprecedented growth in the adoption of mobile payments. According to statistics from the Payment and Clearing Association of China, the number of transactions made through non-banking mobile apps increased from 3.7 billion in 2013 to more than 97 billion last year. Mobile payments have only recently begun to take off in the last few years, sparked by WeChat Pay's unveiling of its Virtual Red Envelope service that serves as a more efficient way of giving out red envelopes, an age-old tradition in China. Today, WeChat Pay and Alipay dominates the mobile payments market, with QR payments being the nation's favourite mode of mobile payment. In urbanised provinces such as Shenzhen, cash is rapidly becoming obsolete; with street vendors and even beggars preferring QR payments over cash.

CASHLESS IN SINGAPORE

In Singapore, the recent push for cashless is not just for show. As a financial hub, going cashless helps Singapore remain competitive, and spurs momentum in the digital and fintech industries. Despite the added advantage of a highly connected and digitally literate population; the highest in the Asia Pacific region, Singapore trails other countries in electronic payments. The push for cashless in Singapore is by no means a new agenda, as the Government tried to do so in the 1980s with the NETS card and the 1990s with the CashCard. Despite such efforts till date, 6 in 10 transactions in 2016 were still made using cash. A 2016 study by PayPal APAC revealed that close to 9 in 10 Singaporeans preferred transacting in cash. Unlike sparsely populated China and Sweden, Singapore's tiny area and interconnectedness gives local banks less incentives to go cashless, making the adoption of cashless harder as cash is too convenient for consumers. In addition, high transaction fees charged by cashless payment providers make it difficult for smaller businesses to adopt cashless payments.

With a renewed drive to go cashless, Singapore has since shifted its focus to mobile payments. DBS Bank recently unveiled PayNow, a local take on Swish, and Unified POS, a point-of-sale terminal that processes both contact and contactless mobile payments, in hopes of unifying the nation's segmented digital payments sphere.

WHERE IS CASHLESS HEADED?

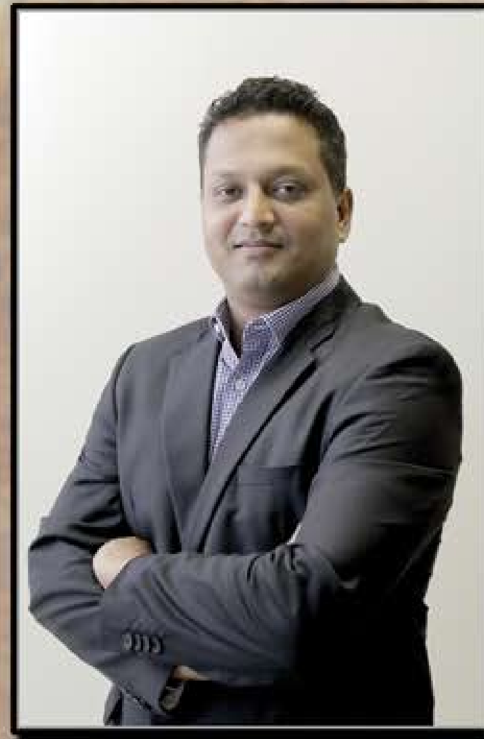
"I don't think it's time yet to eliminate cash, but I propose having a less-cash society, not a cashless one."

- Kenneth Ragoff, American Economist

Cashless has shown to have game-changing potential, addressing some of the major flaws that cash presents, all while increasing efficiency in transactions. Nonetheless, the downsides that come with the adoption of cashless along with the flood of digital payment solutions keeps its stakeholders from adopting it. For any society to adopt cashless, all of its stakeholders have to find value in migrating over, while at the same time, migrating over painlessly. Concurrently, policies must be in place to ensure that the privacy of its users are ensured. Until then, a society with less cash would be, the next best alternative.

Redefining Cash Distribution

Words | Art Wilson Tan



Wilson had the privilege of sitting down with banker turned fintech entrepreneur, Hari Sivan, as he shares about his fintech start up, banking career, and life.

WT: What is soCash and how does it work?

HS: soCash is a fintech company that provides a smarter method of cash circulation for banks and businesses. Banks spend a huge amount of money annually on upkeeping Automated Teller Machines (ATM) and transporting cash while people in need of cash will always have to visit an ATM.

What we essentially do is provide a convenient way to access and deposit cash. Instead of traveling to and queueing for cash at the ATM, soCash capitalises on digital payment for technology to turn small businesses and even individuals into ATMs, while having banks pay the different groups transacting.

This makes sense for the different stakeholders: 1. Banks benefit from savings associated with the cost of cash distribution. 2. Cash distribution becomes more convenient for individuals, saving time. 3. Small businesses with soCash installed attract more people, doubling up as a marketing platform for them.

WT: How did you conceive the idea for soCash?

HS: The idea of soCash was conceived from a personal experience from often having to withdraw cash on my wife's behalf. The problem was that the nearest ATM from my house was at the MRT station a kilometre away.

These walks were never an enjoyable thing as the cash was always used to purchase groceries on a shop nearby. The routine was to always go withdraw the money and spend it on groceries. At that time, 7-Eleven was providing cash withdrawal services but the smaller shops offered no such service yet.

We then asked ourselves if we could build a platform to do just that and that was how the concept of soCash was birthed.

WT: Having studied a bachelor in technology, what made you pursue a career in banking?

HS: Being more inclined in mathematics and physics, I decided to pursue a bachelor of technology. I landed a job in robotics after graduation but the job was short lived as I was soon diagnosed with colour blindness (something I didn't know I had). The rules at that time in my country, India, didn't allow the colour blind to work in manufacturing. So, I basically took a career shift and got into the technological side of banking, in HSBC. In 2004, I moved to Singapore to join Citibank which provided me many learning opportunities and shifted into more business oriented roles along the way in a series of unplanned events.

WT: With the idea conceived while you were still in the corporate world. What made you risk it all and take the leap?

HS: Having stayed in the banking sector for 15 years, you come to a stage whereby most tasks become mundane; I could even run on autopilot when I received a work call in my sleep. Then I looked at the statistics in Asia; Indonesia, Thailand and India for example. The growth of these economies has catapulted the poor to a place where they are able to think of material consumption. These people are transacting in cash because there are no hidden fees, works without electricity, and there has no learning curve to use it. Growth is happening at the bottom of the pyramid, and I believe this is what is fuelling the increasing demand for cash in Asia. I felt that providing a cheaper model to the traditional mode of cash distribution was too big an opportunity to pass up.

WT: With the global push to become more cashless, what is your opinion on the role of cash in the future?

HS: At present, and in the immediate future of 10-15 years, I do not believe that any economy would be making the switch to going cashless because from an economic perspective, there is no alternative that functions better than cash. In Asia, the circulation of cash is still growing and it is a good sign that people are using more cash as this means that the economy is growing.

It is my belief that if a product is good, evangelisation is not needed. I don't deny that mobile payments have made things more convenient but many of the purported benefits of cashless are yet unclear. The reasons stated by governments and regulators; money laundering, tax evasion, control of interest rates, are simply not good enough reasons for an economy to go fully cashless. If you look at the cases, money laundering happens on an institutional level using sophisticated methods which do not involve cash. Perhaps the smarter thing would be to shut down the enabler banks. Tax evasion can be fixed with efficient tax rules. Payment intermediaries on the other hand advocate cashless for their profit only. The groups pushing for cashless; politicians, regulators and payment processors, are talking about the need to go cashless for different reasons. So, the problem is that the current narrative of cashless works for very small segment of the society. I feel the people will decide what should or should not be used.

WT: What are your opinions on Singapore's cashless scene?

HS: In Singapore, cash is the favoured payment medium. According to the MAS, Cash in circulation is growing at a rate of 7% per annum. The problems of cash are simply not big enough to justify the government's effort on going cashless. The millions of dollars spent in developing cashless in Singapore should be spent on something which generates near term benefits, such as skills development, education, and helping the marginalised. These funds are ultimately from taxpayers which I feel should be spent more prudently. I do not see the need to erase cash just yet as cashless comes with its own set of problems. A good example was recently when I was wearing the soCash t-shirt at Bedok food court and an 80-year-old uncle came up to tell me that I was doing a good job. As a retiree who only uses cash, what he said was interesting. If he uses digital payments, and something goes wrong, he would have to visit the bank to recover his money. This would mean long queues and troublesome procedures; something he prefers to avoid due to his age.

Cashless will take off in the future only if it can rival cash in being free of transaction fees, instant settling, universal, easy to access, and easy to use.

“If you aren’t making mistakes you’re not trying hard enough.”

WT: What keeps you going?

HS: Cash logistics is an area in banking where practically nothing has changed in last 30-40 years and it is an interesting and big enough challenge at a global scale. I felt that this was a chance to make a difference for the greater good of the society and that is really what keeps me going.

WT: With fintech innovations replacing jobs in the banking sector, how do you think fresh graduates can overcome this challenge?

HS: My advice is to not start a career in any bank. From an industry wide perspective, the banking industry is ripe to be disrupted and deconstructed. Banking is still required, but the current set of players will be replaced by more efficient, consumer focused players. With regards to AI and automation replacing jobs, I opine that it is a progressive thing. Society needs to ensure the education system is responsive to the newer technological developments. The need for specialisation in the future is extremely high as the jobs that require less skills will be outsourced to machines. That is something we all must consider.

WT: Any advice you would give to students currently pursuing their degrees?

HS: With the world changing, it is important to keep an open mind. Be willing to experiment and be foolish to make mistakes; If you aren’t making mistakes you’re not trying hard enough. Don’t be too obedient because it creates mind blocks. Most importantly, remember to do good!

Also, if you have the will and means, try out an entrepreneur. Being an entrepreneur will teach you how to handle every aspect of the entire business yourself; sales, marketing, accounting, business development, just to name a few. If it doesn’t work out you can always find a job. In contrast, you learn a lot less in most corporates as you are slotted into specific roles with mostly repetitive tasks.

UNCOVERING THE SECRETS WITHIN

2017 had the eyes of the world focused on the continuous surge of Bitcoin's price, which recently broke the US $15,000 mark. What many have failed to realise is the technology on which Bitcoin's foundation was built upon. This article aims to provide a tribute to the oft under-appreciated partner to the bitcoin.

Words Xie Shenglin | **Art** Arina Rauf

> "The blockchain does one thing: It replaces third-party trust with mathematical proof that something happened."
> - Adam Draper

A blockchain is a digitised, distributed public ledger that keeps all records of transaction history, which cannot be altered. These informations on a blockchain are available to all parties involved. All parties will have to come to a consensus to ensure that a transaction is valid before the transaction can be carried out.

History of blockchain

The concept of blockchain was first introduced in 2009 via the Bitcoin cash system by a mysterious founder, pseudonymously named as Satoshi Nakamoto. Bitcoin, a peer-to-peer electronic cash system, allows transactions between two untrusted parties to occur without the need for intermediaries. Its fundamental enabling technology, the blockchain, brought about a host of advantages and convenience. Many businesses have since jumped on the bandwagon, tapping on the massive potential of the blockchain technology.

Blockchain in action

Bitcoin (Global): Bitcoin was the first by-product of blockchain. The peer-to-peer electronic cash system proved to the world that the technology was feasible and reliable. Bitcoin has fast been gaining popularity amongst retail consumers since it was first introduced. The price was merely a few cents when it was first launched on an exchange in 2010. As of 7 December 2017, the price of a single bitcoin exceeded US $15,000 and is showing no signs of slowing down.

Project Ubin, Singapore (Local): The Monetary Authority Singapore (MAS) has linked up with R3, a leading blockchain company alongside 11 financial institutes in 2016 to launch Project Ubin, with a focus on exploring the feasibility of blockchain technology for inter and cross-border bank transactions and the ability to reduce risk and costs for cross-border settlements of payments and securities.

How blockchain works

Transaction request

Transaction is being broadcast to all parties on the network

All parties verify the transaction to ensure it is valid before it can be processed using algorithm

Once the transaction is being validated, it will be processed and the transcation history will be stored as a block

The new block of data will be added to the exisiting chain

The transaction is completed

Why blockchain

Cost savings

The decentralised nature of blockchain allows for peer-to-peer validation for transactions. This reduces the need for an intermediary to help bridge the trust gap between parties during transactions, which in turn helps facilitate cost savings through the elimination of transaction fees or commissions.

Efficiency

Parties involved in the transaction can verify the information concurrently as they possess the latest copy of transaction information in a blockchain, helping to expedite the approval process.

Secure

Information on a blockchain is encrypted using cryptography, making it difficult to be hacked. This minimises fraud occurrence and double spending. All users on a blockchain possess identical copies of information and any changes in information would be immediately made known to other users who then have the choice of rejecting or accepting the changes made.

Impact of blockchain on the business world

Music industry
Through blockchain, artists are able to receive the full payments on sale of their records without having to allocate a portion of the profit to third-party platform distributors and label companies while still enjoying protection on their intellectual property. Mycelia and Ujo music are some notable examples who have adopted blockchain technology. They allow artists to register an account on their platform where subsequent music uploaded is automatically tied to their unique identity. Individuals then trigger a smart contract which prompts payment to access the uploads by the artist when they wish to listen to it or use it for their various needs.

Finance industry
Blockchain helps to increase the efficiency of cross border fund transferring and at the same time reduce the costs of transactions. In most countries, cross-border bank transactions take around 3 to 5 working days due to the need to process details for verification and attain approval from the two banks. The global average transaction rate for remittances, through the banks is about 11%, which is then passed down to the clients. This applies to brokerages for stocks trading as well, where there is a settlement period of 2 days. With the implementation of the blockchain technology, these finance services will face challenges such as more competitive prices for transactions as well as removal of back-office jobs.

Problems faced

The 51% attack refers to an attack on a blockchain. Such an incident occurs when more than 50% of miners on the blockchain are working as a group. Following the "majority wins" concept, the attackers can then validate transactions based upon their will such as preventing a transaction from gaining confirmation and halting payment between parties.

Immutability can be an issue too. Once a block containing transactions has been added to a blockchain, it cannot be altered. Problems will arise when there is a mistake in the transaction such as sending a wrong amount of fund to a counterparty. The inability to correct such errors poses a great risk to all users, potentially resulting in unexpected losses.

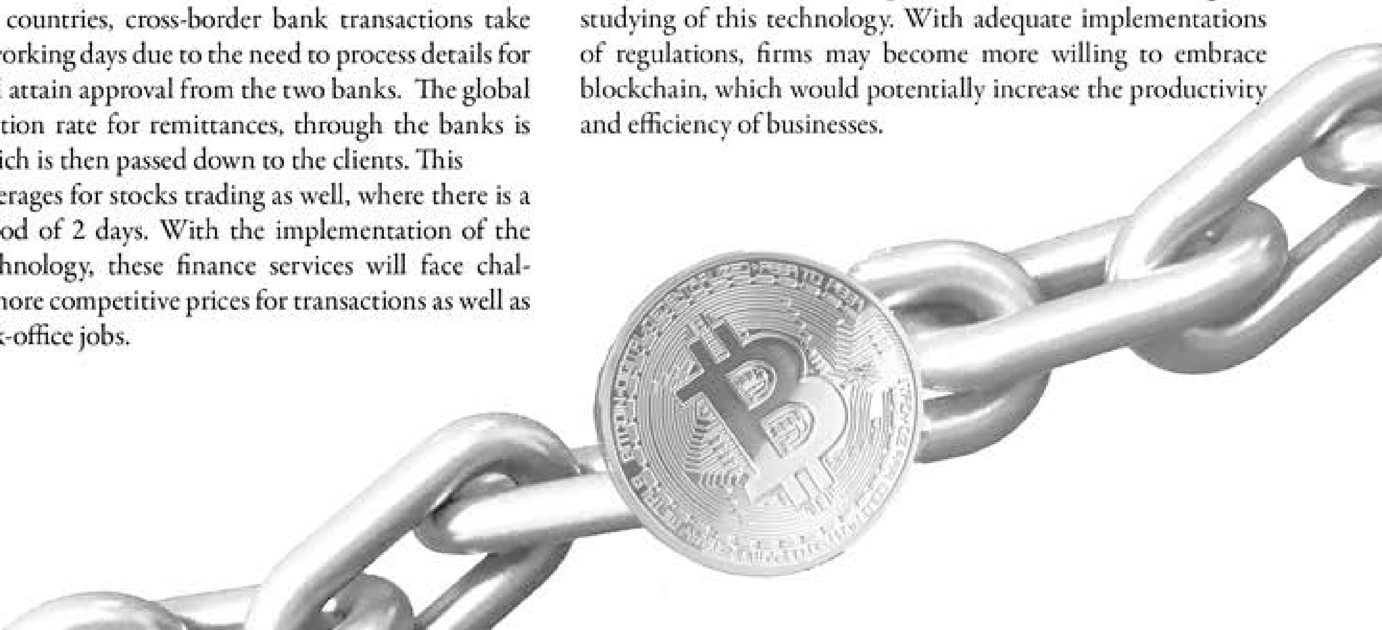
Keeping such disruptive technology in line

The European Commission has created a task force for blockchain technology, which aims to ensure continual monitoring of the development of blockchain related activities. The commission is tasked with providing the necessary intervention or implementation of regulations when needed.

In the US, government representatives have created a Congressional Blockchain Caucus that aims to help policymakers create sound regulatory policies surrounding the blockchain technology. The Caucus works closely with two well-known digital currency and blockchain advocacy groups, Coin Centre and the Chamber of Digital Commerce to gain a deeper understanding about the open ledger technology and better craft out regulations.

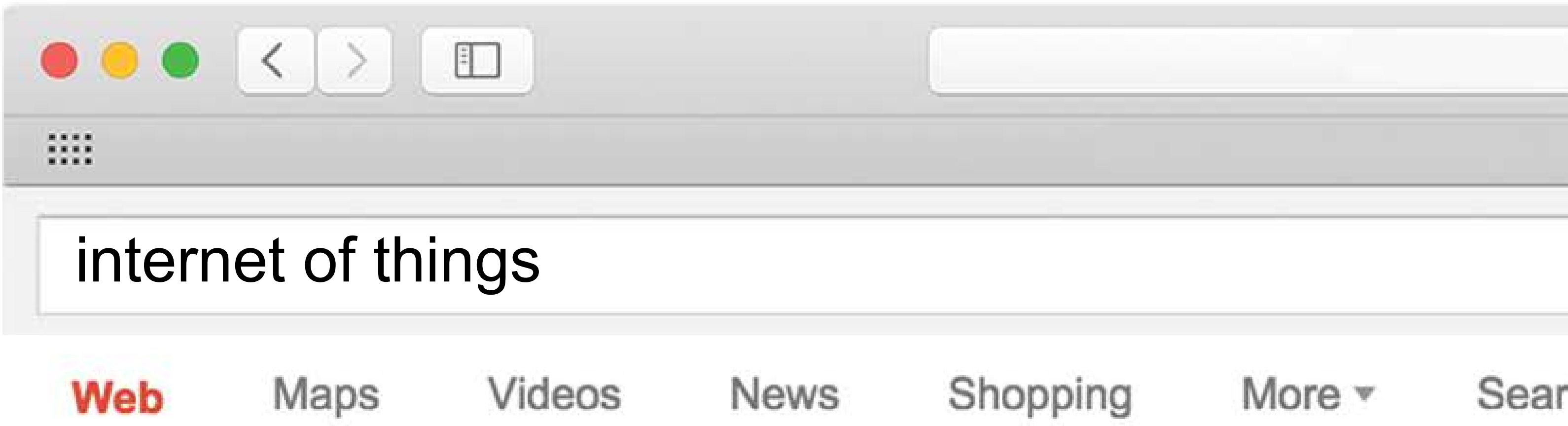
Conclusion

Blockchain technology, though still considered to be in its infancy, has the potential to revolutionise how many businesses operate. Globally, companies especially start-ups, are seizing this opportunity to venture into the field of blockchain. However, one must not forget that there are fundamental flaws such as the 51% attack and inability to rectify errors in the transactions with this technology. Although there are no specific regulations for blockchain technology currently, effort has been put in by various authorities to provide continual monitoring and studying of this technology. With adequate implementations of regulations, firms may become more willing to embrace blockchain, which would potentially increase the productivity and efficiency of businesses.



Words Pallak Jain | **Art** Candy Tio

Picture this: The coffee maker starts brewing the moment your alarm goes off, lights turn on as you walk through the house going about your morning routine. Some unseen computing device responds to your voice commands, reading your schedule white you get ready, and your car drives you to work via the least congested route. Or what if the wearable device you used in the workplace could tell you when you were most productive and shared that information with other tools that you used while working. Come 2018, this vision is now either already possible or on the brink of coming into being thanks to the emergence of voice-controlled assistants such as Amazon's Alexa and Apple's Siri. Such new innovations are shaping the premise of what individuals are terming the Internet of Things (IoT) otherwise called "M2M"— "machine-to-machine" communication.



IoT refers to the connection of any device with an on and off switch to the Internet (and to each other). These devices possess software controlling sensors to initiate the exchange and collection of data through which they anticipate our needs and, in some cases, do our bidding. These devices include wearables, home automation, and smart metering.

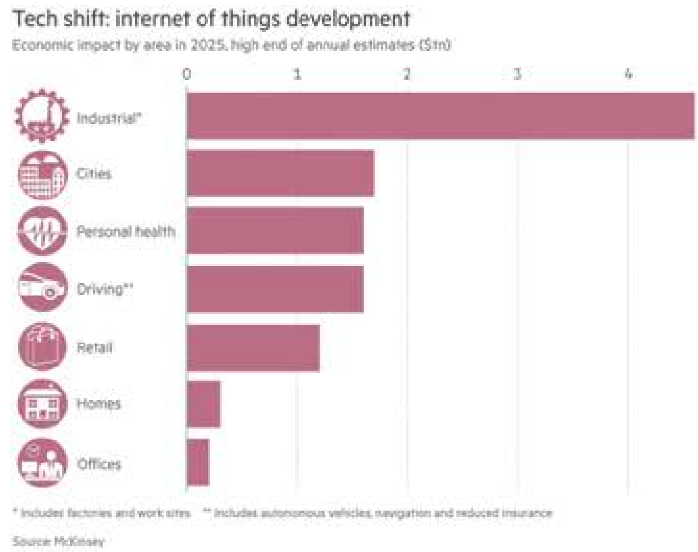
The fifth generation of wireless communications technology (5G) is expected to become the backbone of IoT, linking up fixed and mobile devices. This is as multiple devices running on the internet will require stability for a seamless connectivity without interruptions. 5G will provide a unified framework to overcome the problem of disconnected systems present today.

All this is becoming part of a new technological and industrial revolution - changing the way governments, businesses, and consumers interact with the physical world.

Businesses are expected to be at the forefront of benefitting from IoT solutions as it not only helps lower the company's operating costs but also increases the company's' efficiency level.

This is possible due to smart devices coming into existence which will be able to track and record patterns of consumer behaviour, enabling businesses to make targeted product and tailored search to consumers in new, innovative ways. This is accomplished by taking advantage of these gathered data-based insights to come up with more efficient advertising and get to know their target demographics on a more specific, qualitative level. For example, online retailers today can profile their shoppers by how a customer accesses an online store; shopping history and location provides pricing clues and customers' spending habits, allowing for a more targeted shopping experience.

"If you think that the internet has changed your life, think again. The IoT is about to change it all over again!"
– Brendan O'Brien, Chief Architect & Co-Founder, Aria Systems

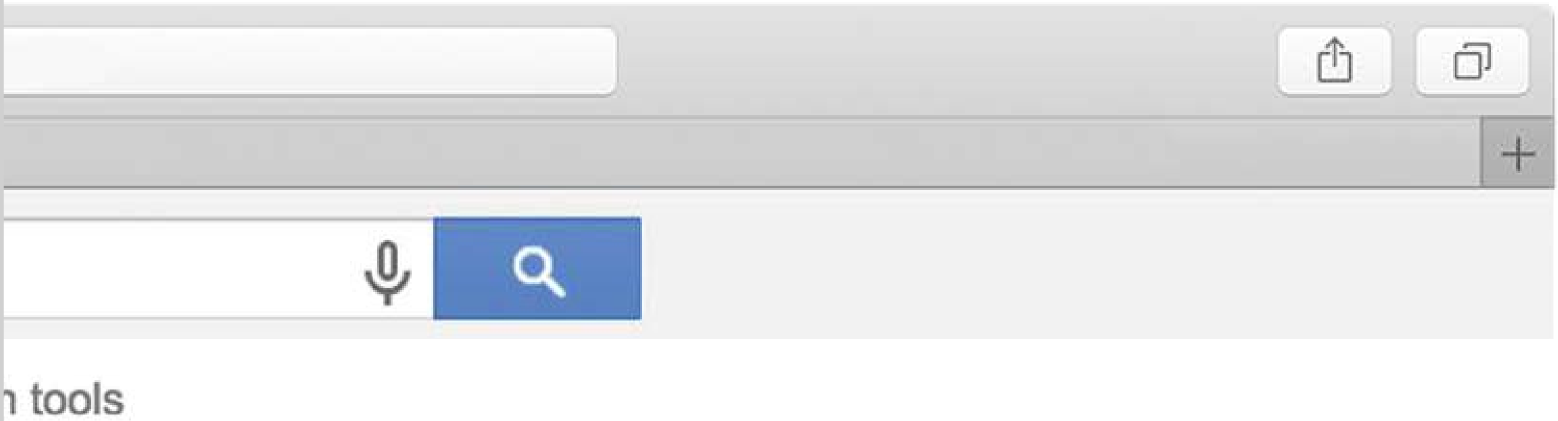


Industries within the three groups of governments, businesses and consumers who will benefit from the IoT ecosystem.

TRANSFORMING HEALTHCARE

Healthcare is one of the industries that would majorly benefit from IoT. In healthcare, a centralised database through cloud computing or other virtual infrastructure on an individual's lifestyle, medical history and treatment program would allow caregivers the ability to access real time information enabling them to make informed decisions and offer customised treatments based on the circumstances. This ensures timely health care and treatment provision. In addition, accurate collection of data, automated workflows combined with data driven decisions are an excellent way of reducing system waste, costs, and errors.

US regulators have approved the world's first digital medicine — a pill with an inbuilt sensor. When patients swallow the tablet containing the sensor, a signal is sent to a patch worn on their bodies, which is connected to an app on their phones, showing that they have taken their dose. The doctor who prescribed the medication will automatically be notified and patients can also choose to nominate family and care team members to receive it.



ENTER INSURANCE

The insurance industry would greatly benefit from IOT as it could aid in the development of usage-based insurance.

Sensor-enabled security systems and utility monitors can deliver information allowing insurers to react proactively to, or even prevent, costly issues such as home invasions, fires, leaks, explosions or electrical damages to name a few.

Vehicle insurers can utilise sensors installed in personal and commercial vehicles to identify driving patterns and behaviours. Insurers can then leverage on the data collected to offer tailored packages to drivers, backed by rewards for "good driving". From a more holistic perspective, this data – collected and collated from multiple sensors – can aid insurers in offering their customers personalised premium packages instead of an across the board standard premium offer.

Location-based sensors, such as GPS, can assist with the prevention of theft and fraud, enabling insurers to tap into the whereabouts of moving and unmoving assets.

POINTS OF FRAGILITY

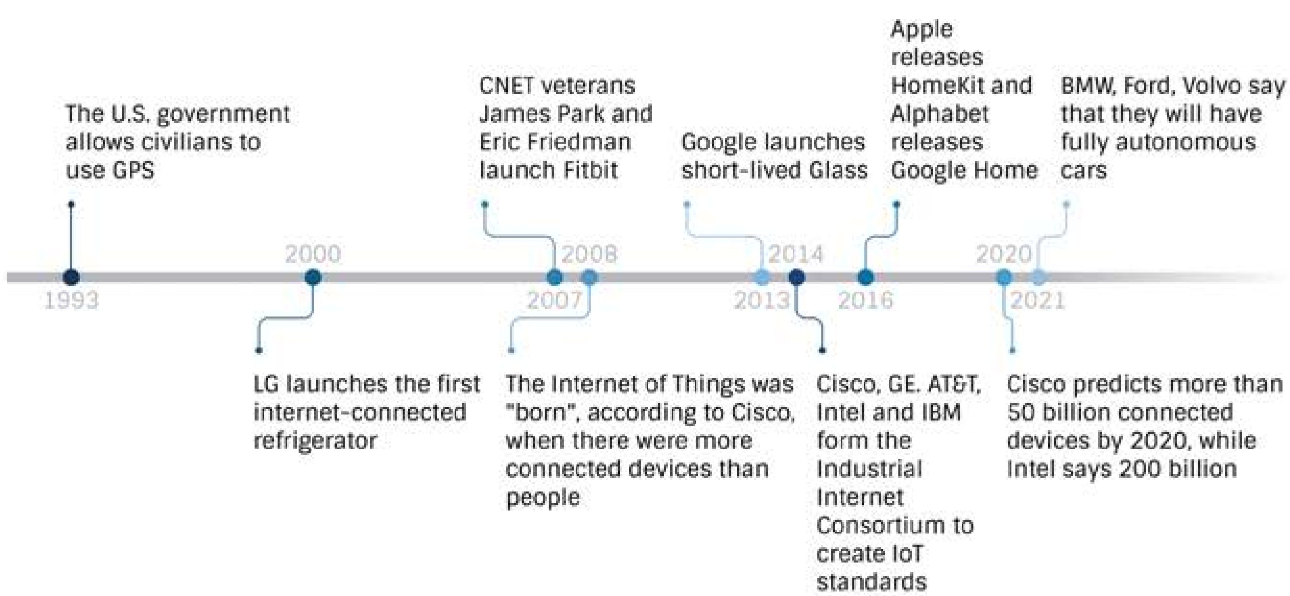
With cyber-attacks at an all-time high across the globe, individuals and businesses are becoming increasingly concerned with regards to the security and privacy of their data. This is even more so with devices becoming increasingly interconnected. Users fears the possibility of someone gaining access to their entire network through one of their devices with the increased connectivity. As a result, companies are focusing on cybersecurity to ensure the security and privacy of all this data.

Another issue that many companies face is a way to store, track, analyse, and make sense of the vast amounts of unstructured data that is collated. They will require powerful computing technology with machine learning capabilities to detect patterns and trends within this data.

WAVE OF THE FUTURE

The best part of IoT is the limitless possibility of applications. IoT brings to the table more than a hundred potential solutions that can help improve customers experience, provide more cross-selling opportunities, reduce risk, and increase operation efficiency thereby helping companies to improve their financial performance in the long haul. Companies that continue to push the envelope in their technology adoption and encash on the vast IoT potential may become the market leaders of tomorrow.

“The Internet of Things” has the potential to be the key differentiating factor between the different service providers and will be increasingly apparent in the near future.



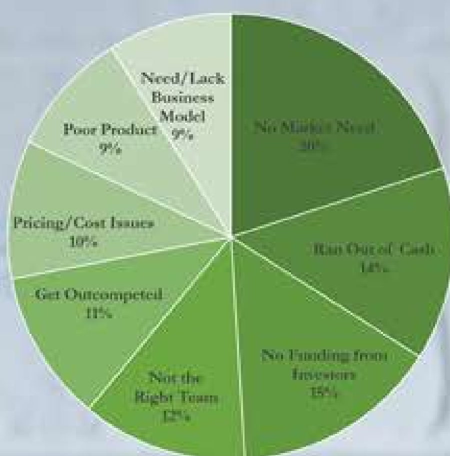
Getting the "mula"

Words Kenneth Ong | **Art** Candy Tio

Even with the best idea in the world, it is almost impossible to get a business off the ground without the necessary funds, which is why we will be talking about how entrepreneurs can go about planning their financial projections and how to go about obtaining the funds required from the investors.

In a survey conducted by Chubby Brain (CB) insights, individuals gave eight key reasons on why a start-up would fail. Ranking second in the list was the lack of capital or running out of capital. That said, it is safe to conclude that the greatest hurdle to overcome would be the raising of capital. In this article we will be touching on some of the ways capital can be raised.

Reasons why Start-ups fail



*Disclaimer: Data has been edited

Planning your finances

The financial plan being the last chapter (excluding appendix) in a business plan, is definitely one of the most important chapters in the entire business plan as it allows you to plan for the future, gain a correct estimate of the funds you require from investors and also helps provide a sense of assurance to your investors. In other words, the financial plan allows you to budget the capital required from your investors, enable investors to see how much the company will earn (net profit) and how long they will take to breakeven. Thankfully, financial projections required from a start-up are not as complicated as one might imagine and can be done by any and everyone. In the following paragraphs, we will be covering on the things required in a financial projection.

(i) Sales Forecast: A sales forecast is a projection of how much sales you will make in the next few years. Usually broken into several rows, this document lists down the different products and services that will be provided in your start-up. For example, if you're opening a café, entries could be broken down into the different types of food and beverages that you have (e.g. Aglio Olio, Seafood Carbonara, Grilled Sirloin Steak, Lychee Smoothie, etc.). For each product or service, you should include the Cost of Goods Sold (COGS). Reusing the café example, a typical COGS would be ingredients.

(ii) Personnel Plan: A personnel plan is the detailing of the salary that will be paid to your employees. If your start-up has a small headcount, listing every single position and how much you will be paying each individual is all that you need. For start-ups with a larger headcount, you should break them into departments, stating the salaries paid to different personnel in different departments. Along with their salary, you will have to include the expenditures on each of the employee. Examples of such expenditure includes employee benefits and taxes (like CPF).

(iii) Profit and Loss Statement: The profit and loss statement add the numbers that you have collected and projected, showing the investors if you have made a profit or a loss. The profit and loss statement includes the revenue from your projected sales less the amount that you spend on the COGS, employees' wages, the extra expenditure for your employees and other expenses associated with business operations. The tabulated amount is your net profit, which is the number that indicates if you are making a profit or loss after deducting every form of expenses from your revenue.

*Illustration for Cash Flow Statement

*Illustration for Profit and Loss Statement

(iv) Cash Flow Statement: Unlike the profit and loss statement, the cash flow statement keeps track of your start-up's liquidity at any given point. If you are unable to differentiate between the two, simply think of it as recording your sales in the profit and loss statement but not getting the entire amount from the customer (due to credit card payment, instalments, etc.). Typically, a cash flow statement includes the sum of cash you have on hand with the addition cash received through paid invoices, deducting the amount of cash you have to fork out to pay for your expenses (e.g. loans, bills, taxes, etc.). The cash flow statement enables your investors and you to foresee when you will be high and low on cash. That being said, you can tap on this information to plan for expansion (when you have high cashflow) and to plan for exit strategy or plans to counter low cash flow situations.

(v) Balance Sheet: The balance sheet list down the assets, liabilities and equities of your start-up, which is used to calculate the net worth of the company.

Typically, a financial plan will have monthly projections for first 12 months and annual projections for the following five years (to be safe), which includes the profit and loss statement, cash flow statement and balance sheet.

Getting your very first 'Mula' (Pre-Seed): Internal Source

Pre-seed is the first stage of funding whereby no sales have been made, funding would come from either your own pocket or just people around you. This is the early stage of your product development and the aim is to build on your prototype so as to gain more and better opportunities in the later stages of funding with a good product.

(i) Family and friends: As a start-up company with nothing to your name, it can be rather challenging to attract investors who possess huge amounts of capital or investors that are well-known in the investment market. This is why your family and friends can be a reliable way to get your initial funding for your start-up to take off. The benefits of raising capital through family and friends would be that they are easier to convince and the amount of money invested by every individual is not as much as a typical investor. This minimizes the amount of equity that you will have to give away in exchange for the capital, thus maintaining control of the company. On the other hand, the con of raising funds through family and friends would be that if the business were to fail, you will have difficulty giving your family and friends an explanation.

(ii) Share Capital (Internal): Basically, this is where you and your team of founders pump in capital from your own pockets. The advantage of share capital is that the team of founders and you will be able to retain full control over the business without giving away any form of equity. The downside, of course, is that if you put in your personal savings into a business venture, you could lose it all.

Getting your very first 'Mula' (Pre-Seed): External Source

(i) Bank Loan: A long-term (five years or more) finance option where the bank will state the interest rate and the amount of repayments required over the fixed period which the loan is provided. Usually, the bank will require you to provide them with some form of collateral (e.g. assets, business's financial details, complete details on accounts receivable and payable, financial statements, etc.). In short, a bank loan is a fixed amount borrowed from the bank for a fixed term with fixed number of repayments at a set interest rate. The plus point of a bank loan is that the interest tends to be lower as compared to a bank overdraft which will be introduced in the following paragraph.

(ii) Bank Overdraft: A bank overdraft is a limit on borrowing on a bank current account, which is basically an active account for you to deposit or withdraw cash anytime you want, even when the account reaches zero, therefore being more flexible as compared to a bank loan. However, due to the advantage of it being flexible, bank overdrafts charge a higher rate of interest. Nonetheless, a bank overdraft is perfect for countering unforeseen cash flow problems as you will be able to withdraw the amount even when you are low on cash.

(iii) Crowdfunding: Crowdfunding is the practice of funding a venture by raising money from a pool of investors who each contribute a relatively small amount. The good thing about crowdfunding is that since all of them invest with very small amounts, there is no need for you to give away a huge amount of equity (to every single individual) in exchange, keeping control and ownership over your business. Some platforms for crowdfunding in Singapore are CoAssets, Funding Societies, New Union and MoolahSense.

MoolahSense

***An example of a Crowdfunding platform in Singapore**

(iv) Incubators: Organisations that help start-ups speed up their growth and success during the early stages of the company by offering mentorship, legal counsel and even funds in exchange for company equity. Some incubators in Singapore are InspirAsia, Joyful Frog Digital Innovation (JFDI), Startupbootcamp Singapore, etc. The pros of incubators would be the resources and advice you can get from those organisations while making use of their reputation to get more funding. However, the con for incubators would be that it is short-term (1-2 years), thus, if you will have to mature and manage your own business after the term has ended.

(v) Excubators: Excubators are similar to incubators in nature but instead of helping the start-ups exclusively in their early stages, excubators are designed to support start-ups from beginning till end, or when the company is ready to be independent. They provide the necessary training needed for you guys to learn how to operate a company, etc. On the downside, excubators are relatively expensive as you will have to pay those organi sations on top of the equity issued, which may get you some discount.

Seeding for Expansion Capital

Now that you're done with your pre-seeding, you should be able to get your business off the ground and start producing your prototype, possibly getting sales through it. The next item on your agenda would be the acquisition of funds for expansion. The following are the stages to seeding for expansion capital:

(i) Seed: The seed stage is when you add funds to your start-up to help it expand. This is where entrepreneurs usually finalise their existing products, produce it and even add employees to the team. However, just like the pre-seeding stage, it is a high-risk investment since you just got your business to start off and it's still trying to grow. At this stage, you will be getting your funds mostly from incubators and excubators as they are the ones that invest in start-ups.

(ii) Series A: Series A aims to mature the business idea and optimise sales. This is when companies start to push their products out into the market. Since series A is still at the early stage of a start-up business, it's still a high-risk investment, thus relying on the same few incubators and excubators to invest and provide further funding

(iii) Series B: Series B is when further improvements are made, focusing on improving the existing product and growing the team so as to increase your market share and, in effect, the scale of your business. Funds collected at this stage will be mainly used on product and business development, advertising, sales, etc.

This is also the stage whereby risk would have decreased (lower-risk as compared to Pre-seed, seed and series A) as the company will have actual financial proof to convince the investors that the company is actually making profit or even just making enough revenue to gather additional investment.

"Everyone has an idea, but it's really about executing the idea and attracting other people to help you with the idea." - Jack Dorsey, Entrepreneur, Co-Founder of Twitter

(iv) Series C: Series C is when the company has already matured and the main aim is to upscale the business. At this stage you should be able to get investments from hedge funds, investment banks, private equity firms, etc. As the company is relatively more mature now in comparison to previous stages, the risk in investing in it has been significantly reduced, making it more attractive to investors. The later stages of Series C also anticipat the returning of the monies borrowed from investors.

The end or the beginning?

Now that your business is off the ground and doing well, it is time to graduate your company from the 'start-up academy' and decide if you are going to sell your business or go public, opting for the Initial Public Offering (IPO). If you have ideas and are thinking of making it big, you might want to opt for the IPO as it will make fundraising faster and easier. However, if you want to end your start-up with no plans for expansion, you can choose to go for the option of letting other companies (usually competitors) acquire your company, gaining a lump sum of money from them. All in all, like what bodybuilders always say, "Go big or go home.", which is why I will opt for the IPO route instead of letting other companies acquire my company. What about you?

THE ROAD TO SUCCESS

with amelia ching

Amelia Ching, the CEO of AgilenLite, is the Financial Industry practice leader on the full spectrum of Financial IT solutions. Over a cup of coffee, she shares with us 25 years of experience in Singapore's banking industry and her expertise in rolling out emerging industry-needed programs. Amelia also reveals the origins of her brainchild, AgilenLite, and her thoughts on the upcoming technological trends set to take the world by storm.

Words Pallak Jain | **Art** Arina Rauf

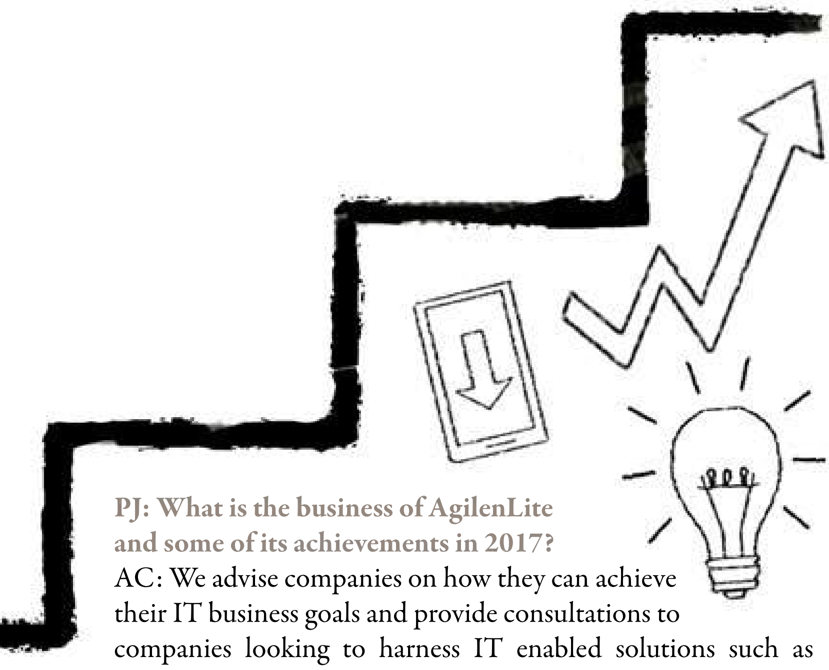
PJ: How did you first get into the IT sector within the banking industry?

AC: I began my career in teaching and three years into it, I was approached by KPMG for a trainer role. There, I was assigned a software development project for a local financial services company. At that point of time, I had limited, in fact, zero competency on programming, and financial domain knowledge as well as the use of mainframe system for the software development work. I have always adopted a 'Never Give Up' attitude. The learning curve was very steep, but I managed to overcome it. During my stay in KPMG, my team successfully developed software applications for financial institutions, and a suite of accounting and financial management services for manufacturing firms.

I would say that my first foray into the corporate world with KPMG equipped me with the practical working knowledge for the financial services industry, and that is how I eventually ended up in the IT management role in Citibank.

PJ: After 25 years in the industry, what was the deciding moment that made you leave to start AgilenLite?

AC: Growing up, education was a luxury for me and not a necessity. I had to work during school holidays to fund my own education. I hardly had an opportunity to fully focus on my studies because I had to constantly juggle between work and studies. As a result, my dream was to create equal learning opportunities for every and any aspiring individual. This is why I started AgilenLite.



PJ: What is the business of AgilenLite and some of its achievements in 2017?

AC: We advise companies on how they can achieve their IT business goals and provide consultations to companies looking to harness IT enabled solutions such as DevOp practices, Blockchain and Digital Transformation. In AgilenLite, we also assist companies on their training requisites, thereafter creating and delivering the programs that are relevant to their needs. Lastly, we develop and put through programmes for accreditation for SMU academy, to agencies such as the Institute of Banking and Finance and Skill Futures Singapore. In 2017, I have invested most of the time on building a potpourri of ecosystem, including identifying competencies required for individuals to meet industry needs and identifying IT related competencies gap between industry needs and workforce. This is to enable us to equip individuals with the relevant skills to fill these gaps. I also focused substantial effort on research relating to emerging technology trends, bouncing ideas off with industry players and companies to ensure that what we aim to execute, does in fact resonate with them. I also try to get like-minded individuals and professionals on board to ensure that they can join me on this journey with a common goal. All in all, 2017 has been about laying the foundations for the future.

PJ: AgilenLite's an interesting name! What is the story behind it?

AC: Throughout my career, I was fortunate to have a front row seat as I watched the direction in which digital transformation and technology moved. It became crystal clear that for organisations to embrace such speed and change they would have to stay very 'agile and lite', thus for me to bring value to the people I service, I need to provide something that is agile and lite and that is how the company name came about. In everything that I do, be it in training, consulting, or looking to provide solutions, this is always the focus that I look at.

PJ: How different has it been between being previously an employee versus being your own boss now?

AC: Interesting question! I was fortunate to be given a leadership role in Citibank, which meant I had the opportunity to develop and create processing services and centers. Fast forward to the present, owning a business means that I now have the power to use my capabilities to influence others and quickly realise the ideas that I have. This is especially important now given the pace in which technological advancements and disruptions are happening. Also, the way I run my business is different in the sense that I emphasise on having people of right attitude more than just the knowledge, because that will enable us, as a company, to go the distance.

PJ: What are some obstacles you faced and how did you overcome them to get where you are today?

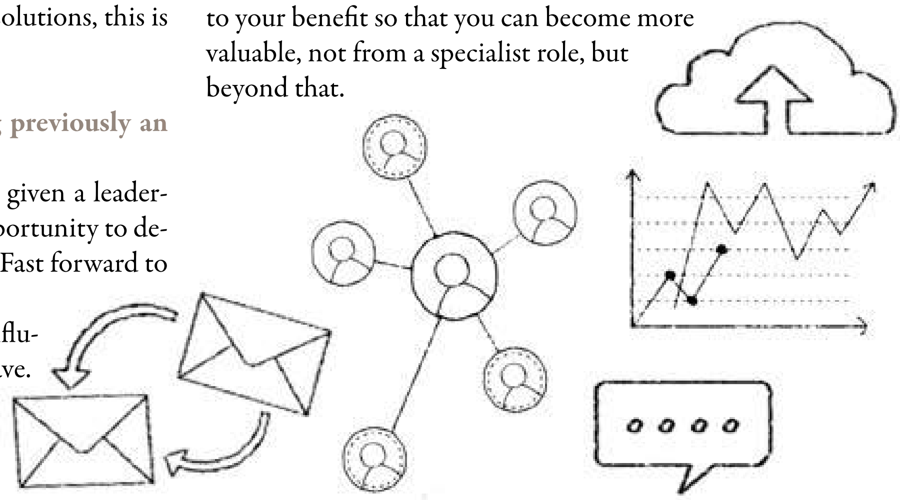
AC: Time and effort. Being extremely particular about ensuring what I give and provide indeed resonates with industry goals means that I need to reach out to companies that I feel are ready to embrace this change with me. I approached numerous institutions like SIM, and other individuals whom I personally try to impart my philosophy to, for them to truly see the value of joining me on this journey. The amount of time and effort to achieve all this is the key obstacle but through collaboration and partnership, I am making great progress.

PJ: Which phase of your career has had the biggest impact on your current role as CEO of AgilenLite thus far?

AC: Back in Citi, I had opportunities to assume numerous leadership roles that were global in nature. Global in the sense that they were cross-functional and cross-geographical. Internal stakeholders and customers to whom we service operate and present both locally and overseas. I began to realise that for someone to be able to operate in that kind of arena in today's context is very important given the borderless world we are exposed to. To equip someone with that kind of exposure was not a simple task. Only by empowering myself, would I be able to do the same for others too. That is why I felt there was no better way than to run my own business, and this is the same mentality that I hold even today.

PJ: As an IT specialist, what do you think are some of the emerging technology trends that young graduates or students should be aware of?

AC: A fact that young graduates need to realise is, what needs to be automated will be automated. One needs to face up to changes, to be prepared for the time when a machine can take over many repeatable functions, perform business predictions; algorithms will be used to prescribe business solutions. As a student, and a future graduate, you need to take a deeper look at areas that machines cannot overtake. Be adaptive, flexible and recog nise that change is constant. Do not ever stop learning, and realise that being a 'specialist' is no longer the most important thing. Embrace technology as a form of utility, and learn to harness it to your benefit so that you can become more valuable, not from a specialist role, but beyond that.



PJ: How are these trends affecting Singapore's economy, and on a global scale?

AC: To be frank, it is the pace of change in technology advancement, the disruption it creates, and the general population's ability to cope with it or harness it to reap its value. For companies who are able to embrace such changes, they will evolve to become champions. On an individual level, people must stay driven, flexible, adaptive and engage in lifelong learning. Being open enough to a job switch based on the market trend will enable them to succeed. That will be key.

PJ: Which industry is the 'Internet of Things' going to affect the most?

AC: The effects on the agricultural industry can already be seen today, as well as the consumer industry, looking at the ease at which manpower can be replaced by robots or smart devices. The transport industry is up next, with driverless vehicles in Singapore right now. For the financial services industry, the key factor determining the speed of implementation will be on its ability to comply with the respective laws and regulations. The main areas of concerns that need to be managed include cybersecurity, data privacy, governance, risk management and compliance.

PJ: What is your philosophy in life?

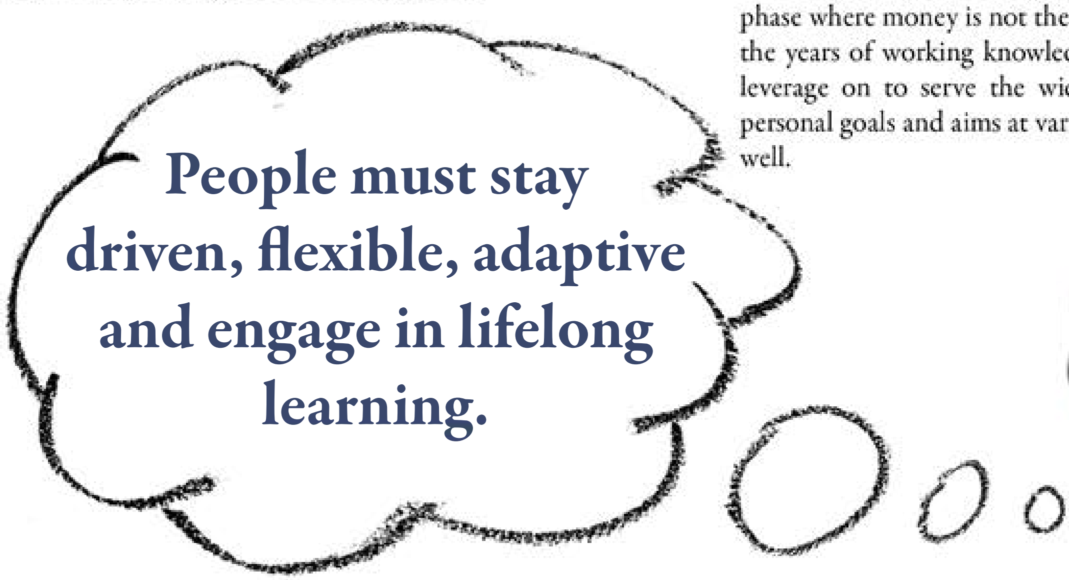
AC: For the younger generation, I feel that the hunger for success, staying positive and the curiosity about how things are evolving will help you to continue to stay relevant. Be a lifelong learner and embrace change because change will become constant in the new era. My personal philosophy, more important is to 'Never Say Die', because we only ever tap on a very small percentage of our own capability.

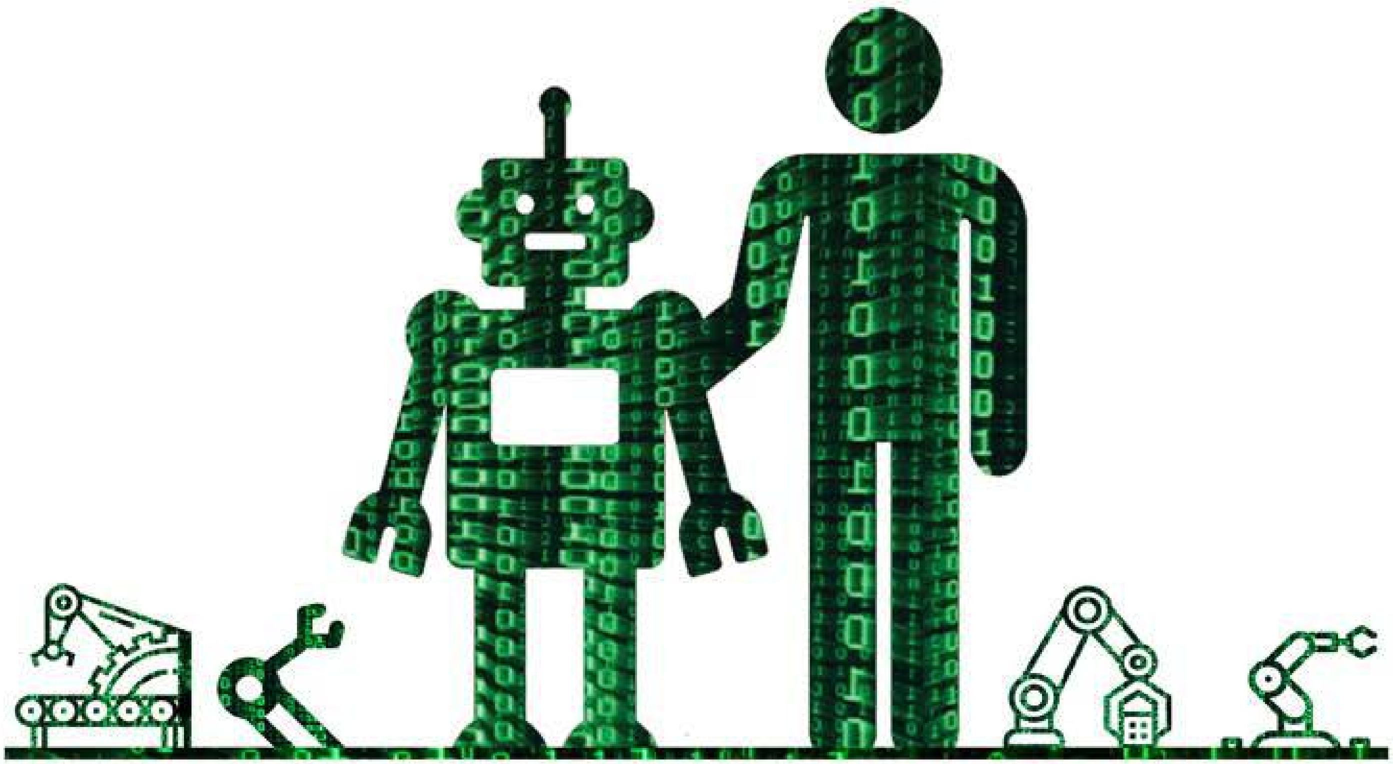
PJ: Looking forward to 2018, what do you foresee for AgilenLite?

AC: To build upon the foundations I laid in 2017. In fact, I am currently investing in building what we call a 'Sandbox'. It is a risk-free environment where individuals and industry players can come together and experiment on new solutions in an environment that is collaborative in nature. This project could potentially play a key role in the continued influence on institutions like SIM, community associations or even companies in building industry-relevant training programs for graduating individuals as well to prepare them for life after graduation. That is what I hope to do through collaboration and partnerships, expanding the ecosystem. I foresee a tough journey ahead but I am confident to have people joining me in this journey.

PJ: Lastly, any words of advice for job hunting fresh graduates or young aspiring entrepreneurs?

AC: Good academic results are no longer enough. There are just some things that you cannot learn through academic education. Equipping yourself with industrial relevant skills would be the key practice to get the job you desire most. As for our young aspiring entrepreneurs, an important thing to take note of, is that if you are doing it due to passion without any inherent knowledge or practical experience, entrepreneurship will be a big challenge. The minimum requirement would be to acquire the necessary knowledge and experience to transform your dream into reality. Going down the road of entrepreneurship is not easy; support systems are important as well. At the end of the day, if you are constantly under the pressure to settle for a stable income, this will only add on the stress in your journey. This is especially real in Singapore. Personally, I have reached the phase where money is not the main driver; it is the passion and the years of working knowledge and experience that I aim to leverage on to serve the wider community. Evaluating your personal goals and aims at various stages of your career is key as well.





ARE WE STILL NEEDED

Words Zoeline Chong | **Art** Arina Rauf

With robotics and automation fast gaining traction in various industries alongside an increase in funding towards its research and development, we see an ever-increasing amount of jobs that are being replaced by automation. In this article, we look at what is automation and how it has affected the various industries workforce and how humans and robots can co-exist in harmony.

Automation and robotics have often been confused by the masses to be the same thing. In actuality, automationa and robotics are two distinct identities with areas that overlap, hence, causing the confusion. Robotics is a branch of engineering that incorporates multiple disciplines to build, design, and program robotic machines (i.e. robots). Automation refers to the usage of computer software, machines, or other forms of technology to perform a task, virtual or physical, which would otherwise be performed by a human; you and me.

There are many varied forms of automation today but the two basic types are software automation and industrial automation.

Software automation, involves the usage of software to execute tasks on computer programs that a human would usually have to handle themselves. An example of software automation would be a customer support page on an online website. Previously, an employee would be required to sort through the complaints posted and manually respond to them individually.

With software automation you can program a software to sort through the complaints for a specific keyword and give a standardised response for complaints that possess said keyword. This frees up employees from simple and menial tasks allowing them to focus on issues that require problem-solving skills thus improving business efficiency.

The second form of automation, industrial automation, involves the physical processes and usage of physical machines to perform tasks within an industrial process. An example of industrial automation would be the use of machining transfer lines and automatic assembly machines in the manufacturing industry.

Link between automation and industries

With automation fast becoming the cornerstone of many industries due its ability to provide results in three major areas, cost savings, productivity, and reliability, no industry or job would be safe from the impact of automation, be it positive or negative. In this section, we look at how automation has affected five industries: manufacturing, finance, food, professionals and education.

Manufacturing

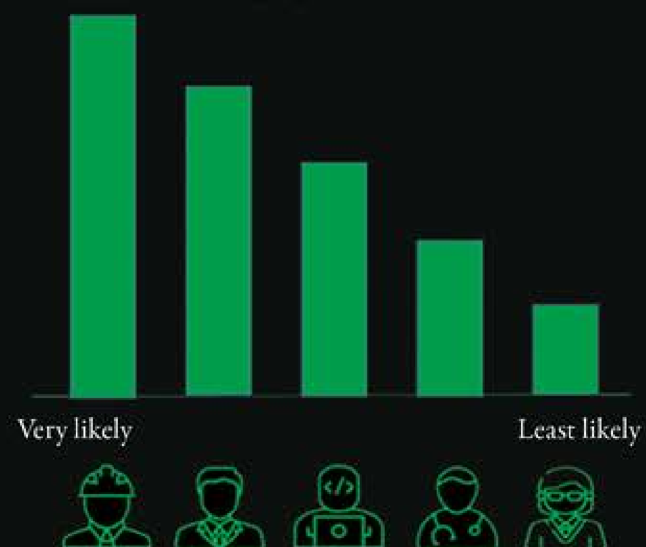
Manufacturing industries has greatly benefited from the adoption of automation as much of their roles (e.g. assembly workers handle tasks that are highly repetitive in nature).

Firstly, if we were to take a car manufacturing line as an example, the switch to automation would result in an increase in productivity as industrial automation is able to work 24 hours a day, 7 days a week and 365 days a year unlike a human who must work in shifts and requires breaks in the form of holidays and leaves. Secondly, automation reduces the occurrence of error in repeatability and boasts higher accuracy in the assembly process. In the past, installation of pistons into the engine used to be performed manually which came with an error rate of 1-1.5%. At present, after the implementation of automation, the error rate has fallen to only 0.00001%. Automation also allows for product with uniformed quality standards to be produced consistently as automation, unlike humans, are not susceptible to things such as fatigue. These all add up in helping a business to save costs as the increase reliance on automation decreases expenses related to healthcare, paid leaves, holidays and production error. In actuality, the increase in productivity and reliability by automation may stand to be beneficial to businesses as they are able to produce more goods within the same timeframe.

Finance

The finance industry too stands to gain as many jobs within the finance industry, such as traders, requires a high degree of accuracy and speed in the execution of tasks. An example of such a software automation can be seen in JPMorgan Chase & Co. who are rolling out a program, LOXM, which can execute equity trades faster and with a greater degree of accuracy than a human.

Likelihood of jobs being replaced by automation and robots



Besides benefitting companies, the public sector too stands to benefit from software automation as they are able to use these tools to detect trading anomalies which can amount to billions of dollars in trades if not detected. A way this can be done is by sifting through the trader's e-mails using a specific keyword search to check if they possessed any inside information that allowed them to execute a trade and make a profit out of it.

Food

The food industry has only limited areas to adopt automation at present. Some forms of automation can be seen in the fast-food industry which has replaced most of their cashiers with technology such as tablets or smartphone apps that allows them to self-order their meals without any interactions with employees. Cooks, however, are less susceptible to replacement due to the high initial investment and limited versatility of tasks which it can perform unlike a human chef, which would put off most eateries from making the switch.

This reduction in consumer spending has repercussions to the economy as it leads to an economic slowdown and in the long-run a downward spiral of the global economy. However, it is not all gloom and doom with automation as companies and industries that are able to cater and adapt to this revolution will be able to ride its wave and survive. According to Opimas, upwards of 27,000 new data and technology jobs will be created, in the form of new jobs like data scientists and machine-learning engineers. Demand for technology talents such as cloud architects, data analytics, and mobile developers are on the rise. Automation also has it place amongst countries that are facing an aging population problem like Japan. For Japan to maintain its productivity levels and counter the diminishing workforce effect, it has had no choice but to turn to automation to substitute and bulk up their workforce. An example of this is the Henna Hotel in Nagasaki which is run by a skeleton crew of seven employees with majority of the work being done through automation and robotics. In most other hotels of the same size and class, it would require at least a crew of thirty-five employees. This proves that automation and robotics can help maintain and in fact improve the productivity and reliability even with a diminished working population.

"Fear not. Without change there would be no butterflies."
- Heather Viets

Professionals and Education

The professional and education industries are amongst the hardest industries to adopt the usage of automation as these industries requires, the managing and developing of people, decision-making, planning, creative work or interaction with other humans, soft skills that only a human possess at this age. Examples of these are vocations such as psychiatrists and school teachers who requires deep expertise in the subject and interactions with other humans which is something beyond a machine's capability as of now.

Is automation all that bad?

The automation revolution has decimated traditional jobs in industries such as manufacturing and is poised to further expand this decimation into the middle-class jobs, leaving only jobs that requires creativity and supervision to survive. It has also sparked fears of greater inequality as the benefits of productivity gains are largely skewed towards the owners of capital, with workers receiving little to almost no benefits from the revolution. This decimation of jobs and little to no benefits affects household spending, due to their source of income being negatively affected, delaying the shift towards a consumer driven economy.

Automation will never be able to fully replace humans as there will always be a need for human qualities, like trust and empathy, which are tough to automate or program; some industries will always have a need for human consultants as customers require a human touch to their interactions. An example of this would be in a hospital where patients would rather have a human nurse instead of a robot to care for them, especially when they wake up after surgery, as human nurses are able to build an emotional connection which helps calm patients and brighten their days.

The Future

It is an undeniable fact that with automation, certain jobs and processes would be made obsolete but at the same time we must not ignore the fact that with every revolution new opportunities, jobs and processes are created. Rather than worrying about being replaced by this revolution, industries and individuals should seize the countless new opportunities made available.

In the coming decades, humans and automation would have to explore ways to co-exist as individually they would not be able to drive industries to new heights. The challenge is to then identify where automation can transform organizations, figure out where to unlock value, the cost of replacing human labour with automation and the complexity of adapting business processes to a changed workplace. Most benefits would arise from raised productivity through fewer errors, higher output, and improved quality, safety, and speed. Tomorrow's leading enterprise would be companies that are able to meld the two effectively.

FOREX

Kian Yong, a 24 year old undergraduate from the Singapore Institute of Management - University of London emerged as the FOREXperience 2017 winner despite facing strong competiton from other esteemed universities. He idolises one of the most successful investors in the world, Warren Edward Buffett, and one of his career goals is to become a business analyst in a multinational firm.

SS: What attracted you to start dabbling in Forex and join this competition?

KY: I was inspired by a friend of mine who had been trading for the past 4 years and making a living from it. What got me interested in trading was that despite him being an undergraduate, he was able to fund the purchase of a car through his earnings. As I broke into the world of trading with his assistance, I started gaining an interest in it beyond the monetary gains as I came to realise that I could apply what I learnt in classes to real-life trading. A great example would be from the Macroeconomics module that I am currently taking, as I am able to use models including economic variables to facilitate my understanding of the logical relationships relating to real life economies.

Being adventurous, I decided to participate in the National SGP Youth Forex Trading organised by AlpsSocial in a bid to score an internship opportunity with UOB Kay Hian while at the same time, test my trading skills. My limited exposure in trading left me at a huge disadvantage, resulting in huge losses in my first competition. I reflected on my mistakes and was determined not to repeat them. I was certainly dejected, but decided not to dwell on my failure and seized every opportunity that came my way. The subsequent competition I took part in was FOREXperience 2017, a trading competition organised by INC which I came to know of through a swimming mate, who was also a fellow trading enthusiast. I saw this as an opportunity to rebound from my past failures and gain more trading experience. I felt that this competition could help me learn more about Forex trading as it allows me to take calculated risks without risking real money and at the same time act as a test to see if I had made any improvements since the last competition.

SS: What do you wish to achieve through trading?

KY: First and foremost, I would like to think that I will one day be able to achieve financial freedom through the skills in trading that I have taken much time and effort to hone. Like many others who trade, the end goal is definitely to make it big. I also believe that trading would help to teach me patience and time management skills which would also be transferable to other aspects of my life, and allow me to become a well-rounded individual.

SS: What were some of the indicators, tools or apps that you used to make your trading decisions?

KY: I adopted an approach where I based my trade decisions on a 75% Technical Analysis (TA) and 25% Fundamental Analysis (FA) ratio. I relied greatly on key elements of technical expertise due to lack of experience in trading. They were Support and Resistance lines, the typical business cycle of peak and trough to gauge when to 'Buy' and 'Sell'. With assistance from my friend, I was able to comprehend the usage of indicators such as Fibonacci Curve and Relative Strength Index (RSI) and apply them to the competition. To my pleasant surprise, they were the deciding factors that contributed to my achievement. Additionally, Bloomberg and Google are great sources of current affairs as information from analysts are accessible with a single click. I made use of my knowledge in Macroeconomics module with current affairs to speculate the most likely scenarios that might happen based on the information on hand. Thereafter, I decided on the best course of action. I also downloaded an app called "Forex Hero" to help bolster my knowledge of the fundamentals.

SS: In your opinion, what was your best and worst trade to date?

KY: My best trade to date was actually during the competition where I longed the GBP/USD which netted me a tidy profit of SGD$4-5K. There were two factors which led me to longing the pair. The first was the concern in the US with regards to the delay in passing the Tax Reform Bill by the Senate which led to an eventual deprecation in the greenback. The second factor was the when UK Prime Minister Theresa May received approval from her Cabinet to increase her offer for the Brexit divorce bill and when the Bank of England announced its plan to tighten its monetary policy by increasing interest rate which caused the sterling to appreciate. After taking into consideration

perience

Words | Art Tan Sock Sean

the two factors and identifying the resistance and support level of the GBP/USD, I decided to long the pair.

My worst trade happened in the last week of competition where I wrongly predicted the downtrend of GBP/USD based on its typical business cycle and shorted the currency pair. However, the trend turned out to be an uptrend. From my research done, I found out the rise was due to the optimism on the Brexit talk hence the increase in investors' confidence on GBP.

SS: Which currency pair did you focus on?
KY: I mainly focused on GBP/USD due to its volatility. If I was making a loss, I would just hold it as it will eventually go up in a matter of time due to the fluctuation in the major currency market. I normally trade around 300,000 – 500,000 per pair since I mostly hold long term to the currency pair. Most of the time, I will use a H4 view as I did not have the time to monitor the chart fluctuations frequently as I had classes on most days. I do view on other time intervals from time to time to monitor the magnitude of the currency.

"GO BIG OR GO HOME"

SS: What were some of the challenges you faced during this competition?
KY: The main challenge I faced was the lack of knowledge and skills in analysing charts. As Forex is relatively new to me, I had to rely on the internet for varying methods of analysis. Apart from this, time management was also an important factor as I had to juggle between my studies, CCA and social life. Therefore, to maximise returns, I mainly traded on Tuesday and Wednesday nights as past data have shown larger price movements during those periods.

SS: Where do you see yourself in the next five years and how do you plan on achieving your goals?
KY: My goal for the next five years is to improve my analysis skills, be it technical or fundamental as it is my aspiration to be a data analyst. I intended to join the Singapore Police Force during my adolescence as a job in civil service is relatively stable. However, through my years of studying in Ngee Ann Polytechnic, I realized I had a knack for analysing data and information. One module I studied in NP was Financial Informatics, which helped further develop my skills and affirm my belief that I was competent in the field of analytics. In addition, I was advised that an analyst, albeit not being as stable a career as with the Police Force, could bring higher income and challenge me as an individual. Thus, I decided to embark on the journey to become an analyst.

SS: What are some tips for beginners who wish to dabble in Forex?
KY: One of the most important tips I would give is to never allow emotions to cloud one's judgements. Do not hold a loss position for too long in hopes of a change in trend. In addition, the stop loss take profit indicator is crucial as it allows you to cap the risk of making a huge loss or exit at the desired price in order to take profit. I believe you just have to take a step out from your comfort zone and give it a try. Bear in mind that everything starts with yourself and do not be afraid to fail as Rome was not built overnight.

The Rise of Passive Investments. Ride the Wave!

Words | Art Esther Ong

Wish to invest but faced with a limited investment capital, lack of time to monitor the markets, or just plain confused with all the technical jargons and different products being thrown around. Then this article is perfect for you as we will be covering two different products – Exchange Traded Funds (ETFs) and Index Funds.

With Singapore facing an average inflation rate of 2.5% over the past decade, the little interest we earn from placing our money in the banks are essentially non-existent and in actual fact being reduced in value. This makes it imperative to find better alternatives that beat leaving your money idle in the banks. Firstly, we have Exchange Traded Funds (ETFs).

Exchange Traded Funds (ETFs)

ETFs are marketable securities listed and traded on a stock exchange. These funds carry a basket of assets comprising of specific stocks, indexes, commodities and bonds which are then broken down into shares. Similar to stocks, ETFs follow the operating hours of the stock market and can be bought, sold, or transferred through a brokerage firm. However, unlike shares, ownership of these ETFs does not give one a direct claim to any of the underlying funds as ownership of these assets is indirect.

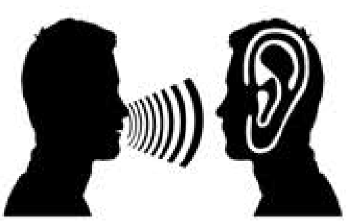
Some of the more popularly traded ETFs in the US market are the Standard & Poor's Depositary Receipt (SPDR) S&P 500 ETF Trust and iShares MSCI Emerging markets ETF. Back on home soil, we have the Straits Times Index (STI) ETF and Nikko Asset Management (AM) STI ETF, which are more commonly traded.

Why ETFs?

ETFs of indexes are known for their longevity. Dow Jones Industrial Average was first published in 1896. Till date, General Electric (founded by Thomas Edison) is the only company that is still followed by the index.

This is because stocks in ETFs are chosen by people and their aim is to produce a return that tracks or replicates a specific index. Therefore, it is unlikely for ETFs to be severely affected by bad news of a company, as the company will already been removed from the index at the first signs of going concern problems etc.

However, as with all investments, ETFs are not all sunshine and rainbows. They possess many challenges and risk inherently.



1. Ian has been hearing about ETFs from his colleagues and starts to do some research. He has been saving and decides to use $500 to invest.

2. Ian found out about the new Lion-Philip S-REIT ETF which has launched its initial public offering at $1 per share.

3. Ian decides to bid for 5000 shares of this listing. As he cannot create or redeem units directly from the fund, he contacted one of the participating dealers, XYZ Securities.

4. XYZ Securities help Ian to place his offer for the listing and charges him a price for the commission and transaction fees.

Firstly, investing in indexes valued in a different base currency exposes one to Foreign Exchange Risk (FER). Changes in the exchange rate pair directly impact investments. For example, when an investor uses Singapore Dollars (SGD) to purchase an ETF that tracks the S&P 500 Index and the index goes up by 10% while SGD appreciates by 2% in comparison to the U.S. Dollar (USD), the investor will only make an 8% profit when they close the position of the ETF at that time. However, the exchange risk may work in favour for the index, for example, if SGD depreciates in comparison to the USD. In order to circumvent or minimise this risk, one should always choose indexes that are hedged[1] against other currencies so as to reduce foreign exchange risks.

Market liquidity risk[2] is another aspect that an investor has to take into account when purchasing an ETF. A liquid ETF is heavily traded and therefore is easier for an investor who wishes to close their position quickly. If the trading volume is low, the order might take some time to be filled and will likely lose the best sell or buy price. Take note that in order for you to purchase a share, someone has to be selling the share at the price you are offering. Conversely, if you are trying to sell a share, someone has to be willing to buy the share at the price you are quoting. Thus, it is highly not recommended to trade an illiquid ETF.

	% Change in SPDR S&P500 Index from previous closing price	Profit or Loss (%) on 1 unit
Scenario 1	-3.0%	-15.0%
Scenario 2	-2.0%	-10.0%
Scenario 3	3.0%	15.0%
Scenario 4	2.0%	10.0%

Figure: Illustrative Returns on 1 unit Daily Leverage 5x Long SPDR S7P500 Index ETF Certificate bought and sold on the same trading day

Leverage is a form of financial instrument recently introduced by the Singapore government and is meant to add volatility to an investment product. Leveraged investing is risky but enables investors to seek higher investment profits by using borrowed money. However, it is recommended to use leverage only if you are a short term or intra-day trader due to the higher risk and volatility. For instance, Singapore offers investors the chance to apply a Daily Leverage Certificate (DLC) 3x and 5x for most of its ETFs. If an investor foresees that the ETF will go up, he can apply DLC 5x to this ETF and if the ETF does increase by an overall 2% in a day, his or her returns will be multiplied by 5, giving 10% returns in total. However, if the investor's foresight happens to be wrong, and the ETF dropped by 2%, his or her losses will be multiplied by 5%, making an overall loss of 10%.

[1] *To hedge, means to invest in two negatively correlated securities.*
[2] *Market liquidity risk is the risk that a loss will be incurred when an investor wants to execute a trade or to liquidate a position immediately.*

A DLC's price resets at the start of each trading day, based on the closing level of its reference index ETF the day before. If you hold the ETF for more than one day, the DLC will not reflect the performance of the underlying reference index ETF as compounding and resets may affect the value of the DLC.

No risk, no rewards! Therefore, do not let these risks deter you from investing in ETFs. Read up and understand more on what you are buying and find out the risks associated in purchasing this ETF. ETF trading can be very profitable!

What is an Index Fund?

Index Funds, also known as another form of Mutual Funds, is a list of investments consisting all stocks or bonds of an index. It does not choose its investments at random but rather, holds all the stocks or bonds stipulated in the index fund criteria.

Indexes are created due to the fact that it is a hassle to track every single security on the exchange. Thus, a sample is extracted to represent the market as a whole, and this sample is called an index.

This helps investors to track the performance and summarise the movements of a specific class or combination.

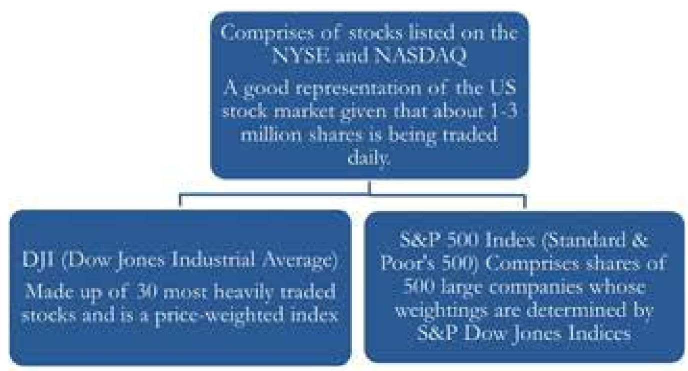


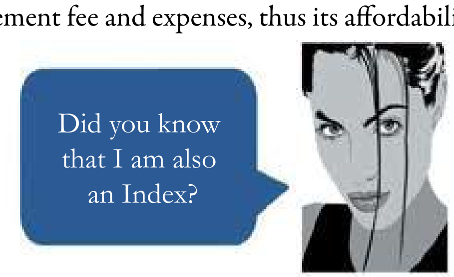
Figure: Examples of Index Funds

Why Index Funds?

Index Funds hold every stock in an index; therefore, the funds intend to be relatively constant. This avoids the risks that come with selecting individual stocks.

Fund managers of an Index Fund simply replicate the performance of an index. As such they do not need the services of research analysts etc. when picking stocks.

Lower trading activity and passive nature of Index Funds lowers management fee and expenses, thus its affordability.



So what are the drawbacks of Index Funds?

Due to Index Funds comprising of a list of investments from a fixed sector, investors are unable to diversify their portfolios and instead have to absorb the risk of investing in the particular asset class they have chosen. This risk is also known as systematic risk.

The lack of flexibility is another drawback. Index Fund managers must follow policies and strategies to replicate the performance of the index. Investment decisions on index funds must be made within the constraints of matching index returns. If an index declines significantly, index fund managers do not have many options to limit those losses.

Another disadvantage is that an Index Fund does not have the potential to outpace the market. A top performing non-Index Fund will perform better than a top-performing Index Fund in a year. But non-Index Funds performance may vary from year to year, so their under-performing years can cancel out the over-performing ones, whereas Index Funds' performance remains relatively steady throughout the years.

Index Funds, like any other investment, require one to understand what they are investing in as not all Index Fund products are similar. Investors need to look beyond the "Index Fund" label to ensure they are truly investing in a low-cost product that tracks a benchmark in line with their investment strategy.

Comparisons

With all that said, what an investor invests in is dependent on the investor's needs. The following is a quick breakdown of the key differences between the two products.

Description	Exchange Traded Funds	Index Funds
Passive Investment	Yes	Yes
Long Term Investment	Yes	Yes
Research required on individual stocks	No	No
Diversified nature	Yes	No
Transaction or Commission Fees	Yes	No
Nature of Dividends	Received at the end of each quarter	Invest dividends paid immediately
Outperforms the market	Yes	No
Changes in Price of Fund	Throughout the day	Price is based on NAV[3] of fund at market close
Intraday Trading	Possible	Impossible
TER[4]	Lower	Higher

[3] *Net Asset Value*
[4] *Total Expense Ratio = Total Fund Cost / Total Fund Assets*

Year	10% Gain	0.5%	1%	2%
0	$10,000	$10,000	$10,000	$10,000
1	$11,000	$10,950	$10,900	$10,800
2	$12,100	$11,990	$11,881	$11,668
3	$13,310	$13,129	$12,950	$12,610
4	$14,641	$14,375	$14,116	$13,632
5	$16,105	$15,739	$15,386	$14,742
6	$17,716	$17,233	$16,772	$15,947
7	$19,487	$18,867	$18,281	$17,254
8	$21,436	$20,657	$19,927	$18,675
9	$23,579	$22,614	$21,720	$20,217
10	$25,937	$24,758	$23,676	$21,894
$ Less		($1,179)	($2,261)	($4,043)

Figure: Returns on $10,000 initial investment, assuming average annualised gain of 10%, applying different expense scenarios (0.5%, 1% and 2%)

The aforementioned illustration shows the lasting effects that expenses ratio can have on investments due to its compounding effects.

A thing to note is that this illustration only examines the differences in expense ratio, ceteris paribus. If an investor had invested $10,000 in the fund with a 2% expense ratio, the value of his fund would be $21,894 whereas if he had invested his $10,000 in the fund with a lower, 0.5% expense ratio, the final figure would amount to $24,758.

Conclusion

The higher the risk, the higher the returns.
Investing is not just for the well-heeled. Although you may not possess the aptitude to pursue a career in investment, one can still indulge in passive investments, such as ETFs and Index Funds, to grow your savings for a better future.

If you have a greater appetite for risk, go for ETFs, if not, you'll do just fine with index funds.
ETFs carry higher risk as they have narrower market exposure. They offer a higher return due to their vulnerability to market fluctuations and their prices oscillate with the daily trades in the market. Index Funds, on the other hand, are more suited for the risk averse. They have a broader market exposure and experience lesser price fluctuations as they are traded base on their closing prices.

Then again, you could never invest in anything, and that might be considered risky too.
On a parting note, before jumping onto the bandwagon, always bear in mind that investments carry a certain level of risk no matter the product. Before investing in anything always do your research and not rush into it. Always stay vigilant. As the saying goes, "There is never a free meal in the world".

All the best and happy investing!

SINKING OF SINGAPORE'S MARITIME DOMINANCE

Words | Art Angga Wijaya

SINGAPORE'S TOTAL CO

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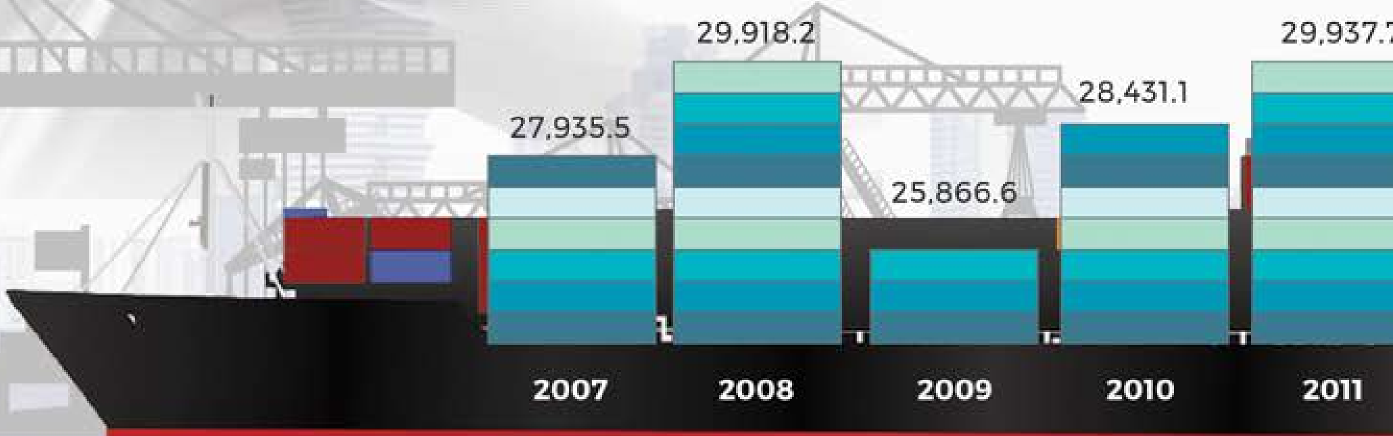

Maritime trade has played an important role throughout history facilitating the exchange of goods. It is the meat and potatoes of today's global transportation system, and acts as a driver for economic and regional expansion. Most countries are not entirely self-sufficient, relying on trade to supplement its needs. Much of what we use and consume in our everyday lives are transported by sea, in the form of raw materials, components or finished products. This is exceptionally so for Singapore who suffers from a lack of natural resources and is heavily dependent on international and interregional trade.

Despite these challenges, Singapore has managed to utilise and leverage upon its geographical location to emerge as the forerunner in the maritime trade industry, transforming itself from a once sleepy trading post to one of the busiest port in the world today.

<u>Challenges Ahead</u>

Big Port Schemes

Malaysia recently unveiled a string of infrastructure investments in an effort to realise its maritime ambitions. The plan includes a series of deep-water port investments and a new East Coast Rail Link (ECRL). The ECRL works by connecting the pre-existing Kuantan Port in the east to the slated Carey Island port in the west help to facilitate intermodal transportation across the peninsular. This project poses a threat to Singapore's maritime dominance as it stands to alter the current regional trade routes between the straits of Malacca and the South China Sea through Singapore.

In Indonesia, the government has rolled out incentives for shipping companies that operate in and move their transit containers to the newly built Jakarta International Container Terminal. Coupled with the existing cheap labour and maintenance costs, it will certainly draw shipping volumes away from the Singapore Port.

The Maritime Silk Road of the 21st Century

The concept of a "Silk Road" was popularised in the 19th century as an ancient network of trade and cultural interactions between regions of the Asian continent to the Mediterranean Sea. Today, more countries are considering the possibility of yet another Silk Road. A replica of the Chinese Silk Road, the new maritime silk road across Thailand is known as the Kra Canal.

The canal is proposed to connect the Gulf of Thailand to the Andaman Sea across southern Thailand, allowing ships to bypass Singapore and Peninsular Malaysia, cutting up to 72 hours of sailing time or 1,200km in distance.

Melting Ice Caps

Worldwide trade patterns would no doubt be altered by the harsh realities of global warming. The impact of climate change on the Arctic ice caps may open new sea routes up north between Europe and North-East Asia. This would reduce Singapore's competitiveness as a global shipping hub. Currently, there exists the Russian Northern Sea Route, which runs across the top of Siberia, and provides the most efficient route from Europe to North Asia. Currently, 6.5 million tonnes cargo are shipped every year via the Northern Route, and this amount is expected to double in the near future.

NTAINER THROUGHPUT

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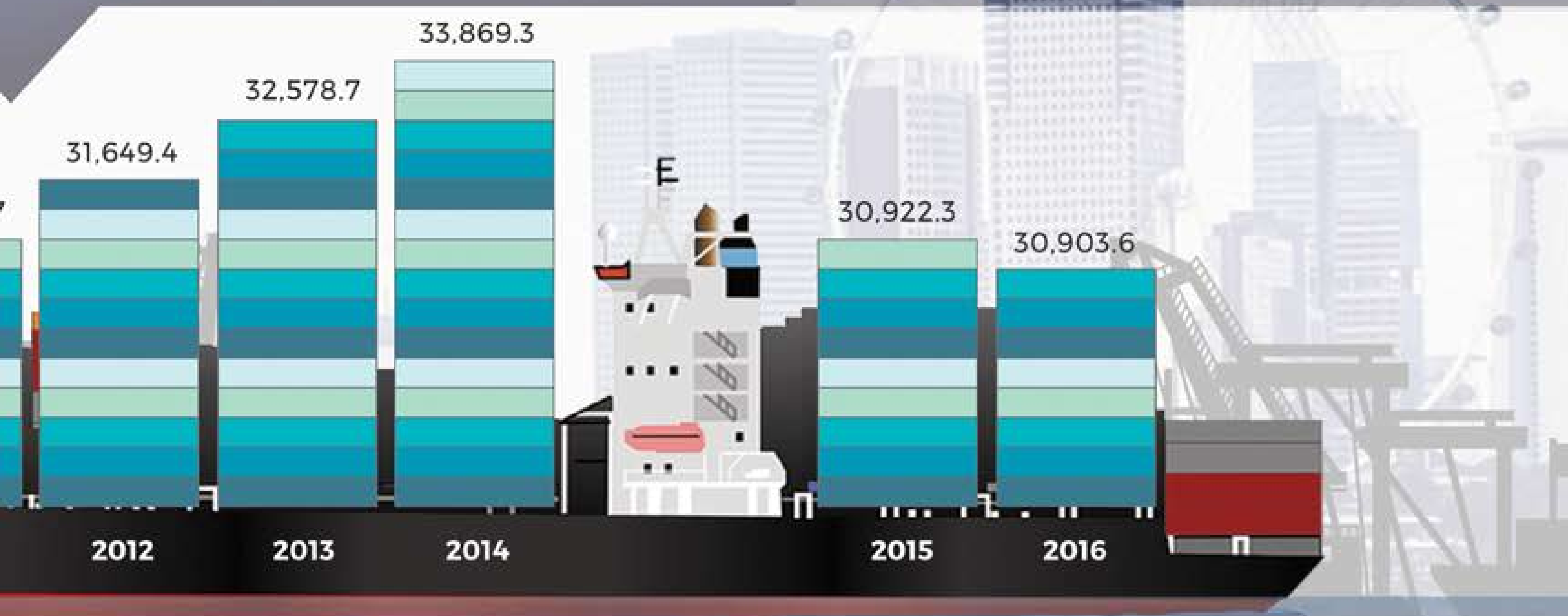

Can we "bank" on Tuas?

Rising competition and changing landscapes will have direct impact on the trades flowing though the Straits of Malacca and Singapore. In response to the challenges ahead, The International Maritime Committee (IMC) 2030 Advisory Committee was convened to chart the future direction of Singapore's maritime sector by identifying new growth areas to enhance its long-term competitiveness. The committee is set to look into emerging trends in the maritime and logistics sectors such as smart ships and ports, data analytics, digital platforms and other new technologies that are disrupting traditional business models and creating new value chains.

In addition, Singapore is currently taking steps to modernise and expand its own container port operations. Earmarked as the centrepiece of Singapore's Next Generation Port vision, the new Tuas port will consolidate all container port operations, with a capacity to handle up to 65 million standard containers of cargo a year when completed in 2040. Its features will include deep-water berths to serve the mega vessels that are increasingly being used today, as well as technologies that boost productivity.

Building a future

Despite changing landscapes and intense competition from rival ports and transnational projects, Singapore's dominance in the maritime industry has been anchored and will be for the immediate foreseeable future.

As promising as the ECRL sounds, the likelihood of the Malaysian project taking off is low due to the high costs associated with using an intermodal transport system. In order to utilise an intermodal transport system, shipping operators would need to offload the cargo from their vessel at Kuantan Port, transport said cargo by rail, 300km across the country to Carey Island Port before reloading the cargo back again. The time saved from transporting the cargo simply does not justify the additional costs associated with this method of shipping.

As for the Kra Canal, the possibility of the entire project is still in question as recent news reports indicate both the Chinese and Thai government denying any official agreement with regard to the project ever taking place. This contradicts earlier news of a Memorandum of Understanding (MOU) being signed by the China-Thailand Kra Infrastructure Investment and Development company and Asia Union Group in Guangzhou to advance the Kra Canal project.

Hardware aside, strategic location has always been Singapore's competitive advantage, and will likely remain so for the immediate foreseeable future. However, it remains crucial for Singapore to strengthen its maritime infrastructure; through advancements and implementation of technology, coupled with unparalleled service to stay ahead of the competition.

WEATHERING THE *Storm*

Words | Art Arina Rauf

Weather derivatives, a rather recent addition to the umbrella of financial tools available today, has been gaining popularity and interest amongst investors, reinsurers and speculators. In this article, we look at the two sectors that have been greatly influenced by the addition – agriculture and utility.

Index-based financial instruments are assets that have their values tied to indices such as NASDAQ, NYSE and S&P500.

Weather derivatives are index-based financial instruments that act as risk management tools. They guard against adverse weather conditions and more nuanced weather patterns – such as changes in rainfall and temperature – making them highly effective in hedging weather-related risks. Weather traders can insulate themselves from the pricing pressures of the market by analysing meteorological data and trading weather contracts based on weather forecasts, effectively decreasing their earnings volatility. Today, weather derivatives are an attractive alternative for traders who are interested in exotic financial products, with an average of around 400 contracts being traded each day on the Chicago Mercantilist Exchange (CME) alone, in 2016.

COME RAIN OR SHINE

Instead of agricultural derivatives or weather insurance, farmers use weather derivatives as an alternative hedging tool to minimise losses. Unpredictable weather events, like droughts and excessive rainfall, can negatively impact the entire agricultural process, from crop-growing period to harvesting.

Other weather conditions such as wind speeds and temperature fluctuations may also adversely affect overall production. Although the use of weather derivatives in agriculture has yet to become the norm, many commodities producers are starting to recognise and acknowledge the importance of it. Trading weather derivatives such as precipitation- and temperature-related contracts reduces farmers' loss of income no matter the weather.

TOUGH CLIMATES

Conventionally, insurance for bad weather are highly sought after by companies in the agricultural and energy sectors. These clients tend to serve products that are weather-sensitive thus dmanding that the risk attributed to adverse weather events and variations are sufficiently mitigated and managed. Given the benefits and ease of trading weather contracts, many insurers today have capitalised on the use of weather derivatives as a form of reinsurance to spread out the risks associated with weather.

"CLIMATE IS WHAT WE EXPECT, WEATHER IS WHAT WE GET."

- MARK TWAIN

POWERING PROVIDERS

Utility providers are the biggest end-users of weather derivatives, as they use such derivatives to insure themselves against the losses they would incur due to demand fluctuations. These providers trade contracts based on the Heating Degree Day (HDD) and Cooling Degree Day (CDD) index values, which are derived by averaging the given day's temperature and subtracting it from the base temperature. As HDDs and CDDs are used in the context of heating and cooling buildings, companies that operate in countries experiencing the four seasons would benefit from this derivative the most. For example, if the coming winter season is forecasted to be warmer than usual, providers would expect a lower demand for heating oil and gas. They would then hedge against a fall in demand due to changes in temperature by purchasing a contract that would pay out cash if the temperature averaged above the historical average for the duration of winter, thus receiving a form of compensation for losses incurred during the unseasonable weather.

The base temperature is the difference between the outdoor temperature at which when a building needs heating or cooling and when it does not.

THE HIGHS AND LOWS

Weather derivatives represent a departure from traditional weather insurance. Insurance policies tend to only cover high-risk, low-probability events such as floods, hurricanes and other major natural disasters but weather derivatives provide additional coverage over low-risk, high-probability events such as minor fluctuations in temperature over a period. Additionally, such derivatives do not require a loss to be demonstrated, and pays out irrespective of the actual impact of the weather. The ease and simplicity coupled with the benefits assured by weather derivatives are reasons why trading weather contracts has been gaining traction.

SUNNY OUTLOOK

Despite the advances in meteorological science and technology, accurate and precise predictions remain an arduous feat due to the highly localised and uncontrollable nature of weather risk. Hence, weather contracts are also popularly traded for speculative purposes by hedge funds and others interested in capitalising on the volatile market.

Engaging in speculation is similar to betting on the future price of an asset. When investors anticipate the price of a weather derivative to increase within a certain time frame, they can purchase a weather option and stand to gain financially through speculation. This gain is realised when the price of the derivative does rise, and investors profit from the difference in the call and put prices. Likewise, investors can also suffer huge losses when the market does not go in their favour.

WORLD WIDE WEATHER

With weather holding an ever-increasing influence over the agriculture and utility sectors, weather derivative contracts are being traded in a more widespread manner than before. Several exchanges today such as the European Energy Exchange AG (EEX), Intercontinental Exchange (ICE) and the London International Financial Futures and Options Exchange (LIFFE) list standardized weather derivative contracts - a huge leap from its humble beginnings twenty years ago in the CME. Prior to its official listing, weather contracts were transacted in an over-the-counter (OTC) fashion which exposed traders to counterparty risk arising from a lack of transparency and regulation. Today, many weather contracts are successfully transacted in several countries outside the US and UK such as Australia, France, Germany, Norway, Sweden, Mexico and Japan.

With the strengthening of the nexus between finance and technology, weather traders can also enjoy additional convenience of online trading through platforms like San Francisco's WeatherBill.com.

Counterparty risk is the risk to each party of a contract that the counterparty will not live up to its contractual obligations.

The introduction of weather derivatives in today's markets no doubt underscores the important role that weather plays in the everyday life. Prices of end products derived from agricultural and power sectors such as wheat and electricity largely depend on how successfully such companies can hedge against risks. Poor hedging strategies, or a lack thereof, could translate to higher prices of goods and services, hurting both producers and consumers. Besides prices, weather also affects the demand for goods and services. According to the British Met Office, UK's national weather service, daily beer consumption increases by as much as 10% when the temperature rises by 3°C. Such statistics show that although the beer market may seem unrelated to weather, it serves as a prime example of the far-reaching effects that weather has on other markets. Mother nature's influence should never be underestimated, and it would be foolish for anyone to relegate trading and benefiting from weather derivatives as merely a rainbow chase.


WAS
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