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CREATING THE
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FOR DIGITAL
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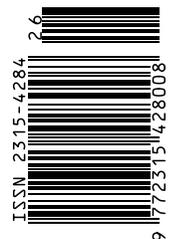
Steering Steadily in the Post-Pandemic World

An interview with
Chartsiri Sophonpanich,
President of Bangkok Bank

Social Media
Enabling touchpoints
beyond advertising

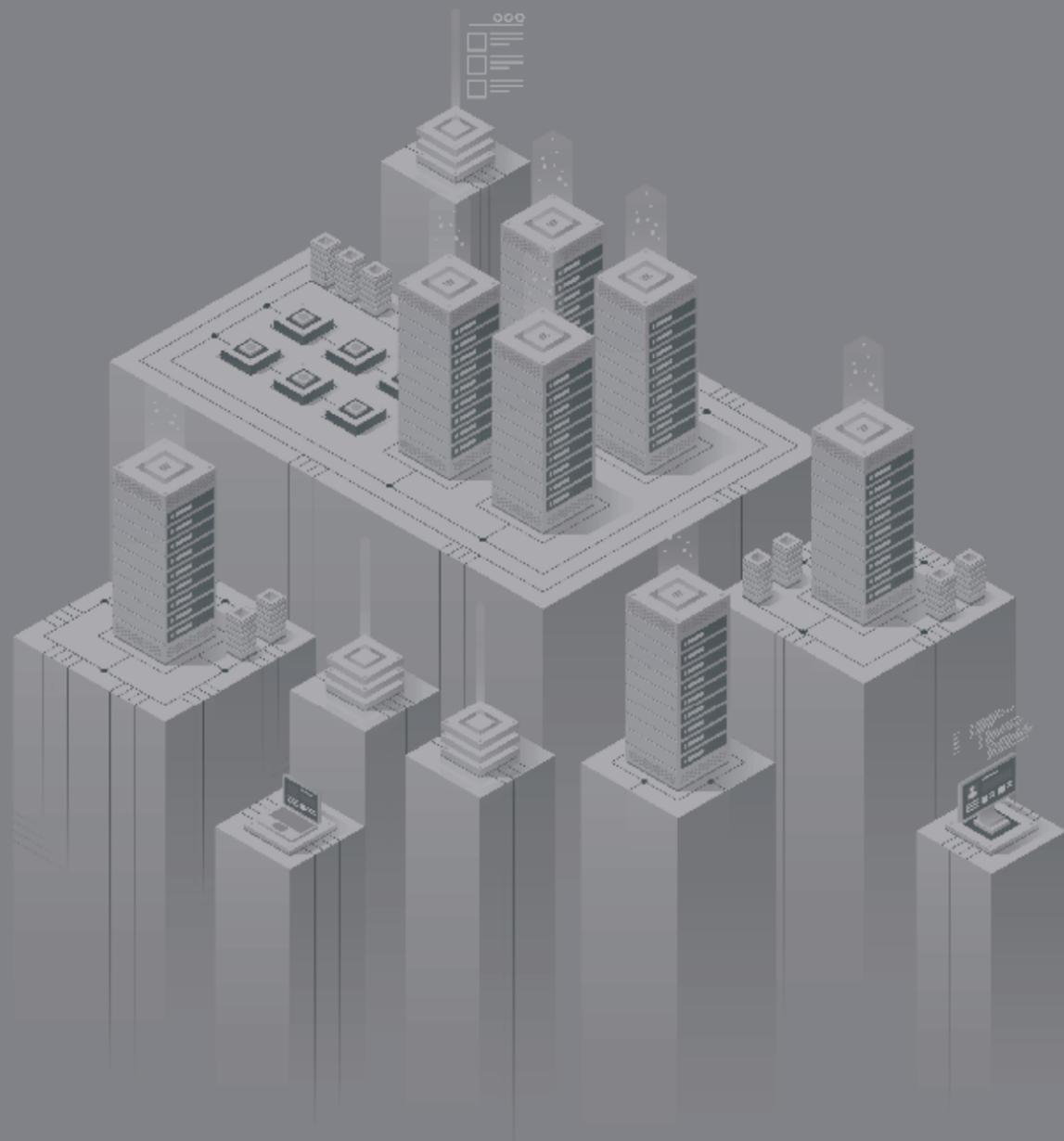
**How Boards
Can Up**
Their digital game

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FROM THE EDITOR

Digitalisation touches everything

“There is no alternative to digital transformation...[and] those that don't adapt will fail.” Compounded by the COVID-19 pandemic, the ongoing digitalisation wave has wrought changes that have unequivocally confirmed this assessment by Jeff Bezos, founder of the e-commerce giant Amazon.

Digital transformation is not only difficult but also inherently disruptive. It can fundamentally upend an organisation's business model, and compel leaders who may have cut their teeth before the Internet revolution to get up to speed on digital skill sets and capabilities. Boards must therefore understand the underlying macro changes to set the right strategic goals, while senior executives need to be prepared to lead their organisations in embracing novel ways of working.

In this issue, Chartsiri Sophonpanich, President of Bangkok Bank, tells Tan Chin Tiong how Thailand's biggest bank by assets is working with fintech start-ups to gain a competitive advantage while emphasising liquidity management in an uncertain economic environment. Khun Chartsiri is leading forays into areas such as enterprise blockchain for trade finance and low-cost cross-border QR code payments as the bank regroups in the immediate post-COVID-19 era.

Beyond businesses, governments play a significant role in setting the stage for digital transformation. Cheow Hoe Chan and Steven M. Miller detail how Singapore's Government Technology Agency (GovTech) has built a full suite of online public services that not only serves its citizens but also deepens the government's digitalisation capabilities. Key lessons include engineering a 'single source of truth' in an organisation's data architecture and policy, and thinking big, starting small, and acting fast.

By highlighting how two companies on opposite ends of the spectrum have successfully conducted digital transformation, Terence Quek argues that boards can help their top management teams direct the digitalisation path of their firms by asking the right questions and identifying the risks of disruptive change. Board members also need to be clear about the roles they play in the process, whether it is to advise, guide, or even warn the senior executives under their watch.

However, a top-down approach to digital transformation may cause some segments of society to be overlooked. Mark Findlay and Sharanya Shanmugam advocate a co-creation process that seeks to address the power imbalance between decision-makers and citizens to deliver digital transformation that benefits diverse recipient communities. Wee-Kiat Lim also argues for a 'whole-of-society' approach to help Asia's elderly citizens navigate the increasingly digital-only landscape, emphasising it is not only the government's job to make digital technology less intimidating to seniors; non-profits and private enterprises, for example, can take the lead in identifying vulnerable population segments and fund-raising respectively.

Social media accounts for a significant share of digital marketing activities, but platforms such as TikTok and the like carry out more than just one-way advertising; the richness of digital content and two-way communication channels offer a wonderful opportunity to build and maintain customer relationships. Kapil Tuli and Sheetal Mittal Bhardwaj articulate how to embrace social media as an effective customer service platform and a strategic communication channel, while Linyi Li argues that video advertising has longer-lasting effects on a consumer's consciousness, compared to display and search ads.

Digital transformation was forced upon Singapore's Meetings, Incentives, Conferences and Exhibitions (MICE) industry when safe distancing measures prompted by COVID-19-related concerns rendered physical conventions impossible. Candy Mak and Poon King Wang recount how the industry adapted and overcame the challenge, transforming its local, physical model into a global, hybrid version in an object lesson of capitalising on a crisis.

Concerns revolving around the COVID-19 pandemic also sparked the widespread adoption of online grocery shopping and home deliveries. Should logistics companies and supermarket chains build their own cold chain warehouses to cope with the ever-increasing volume of goods they handle? Koh Chaik Ming takes a close look at the cold chain sector in China and proposes a hybrid model that combines warehouse rental and ownership.

Over in Indonesia, N. Edwin Widjonarko is tapping into the country's steadily growing solar energy market. Xurya, the renewable energy start-up he co-founded, is already one of the biggest with rooftop systems on top of some 60 commercial buildings, and he has some words of wisdom for budding entrepreneurs: don't be a superman; build a team, and look for help where you can.

We finish where we started: in Thailand. This issue's Case in Point, authored by Chiraphol New Chiyachantana, David K. Ding, Pattarawan Mai Prasarnphanich, and Chan Chi Wei, looks at how Thai fintech firm Robowealth leveraged Artificial Intelligence (AI) to provide investment advice to Thais, including those in the lower rungs of society.

Finally, we would like to take this opportunity to acknowledge the tremendous contributions of our former editor, the late Grace Segran, who was part of the AMI founding team. Even after relocating to the US a few years back, she continued to work closely with us right up till two weeks before her passing in October 2022. We will always fondly remember Grace as our wonderful ex-colleague, and an outstanding writer and editor.



DR HAVOVI JOSHI
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Steering Steadily in the Post-Pandemic World

Chartsiri Sophonpanich, President of Bangkok Bank, speaks with Tan Chin Tiong about the future of banking in Thailand and the region as the world slowly emerges from the COVID-19 pandemic.

How has the COVID-19 crisis changed your views on long-term investment in Thailand and the rest of the ASEAN (Association of Southeast Asian Nations) region?

The situation has only served to reaffirm my confidence in the bright, long-term prospects for Thailand and the ASEAN region. Even before the pandemic, the US-China trade dispute spurred an increase in investment by Chinese companies across ASEAN member states as they began relocating to this region to circumvent US sanctions. As a result, Thailand, Vietnam, and several

other countries across this region benefited. Moreover, since the onset of the pandemic, more international companies have refocused their supply chains toward ASEAN member states to reduce and diversify their operational risks.

As a regional production base and market, the ASEAN region has a lot to offer. It is on track to become the world's fourth largest economy by 2030. At the same time, with about 700 million people in 10 nations, ASEAN is a significant market. Not only that, it also has a significant labour force with 61 percent of the population under 35 years old.

The ASEAN economy is expected to lead the world in terms of export growth from now until 2026, with average export volume growth of 5.6 percent for each of the five years. One of the factors that will support growth is increasing connectivity across the region. Under the Belt and Road Initiative (BRI), China will be connected to mainland Southeast Asia through the China-Indochina Peninsula Economic Corridor. Thailand aims to become the logistics hub for this part of the BRI and has many infrastructural development projects underway, including ports, rail and road, and energy development. Several of these investments are based in, or linked to, the Eastern Economic Corridor, Thailand's flagship project that aims to develop the country's eastern industrial seaboard into a hub of high-value industries, innovation and logistics, as well as a regional gateway for trade and investment.

Last year, ASEAN recorded a robust rebound in Foreign Direct Investment (FDI) inflows, which surged by 42 percent to US\$174 billion. This increase to near pre-pandemic levels was a reversal of the decline in 2020 caused by the COVID-19 outbreak and reflects the region's attractiveness to global investors.

How are Bangkok Bank and the Thai banking sector in general coping with the current uncertain and volatile political and economic climate?

Overall, we are coping well. We are growing our assets cautiously, both in terms of size and quality, while retaining strong capital adequacy and liquidity. We are prudently focusing on quality growth, closely monitoring the financial position and business of our customers, and setting aside sufficient levels of reserves to manage loan quality through challenging economic times. At the same time, we are closely monitoring global economic volatility, the prolonged geopolitical conflict between Russia and Ukraine, energy and commodities markets, as well as the local political and economic situation.

Given the uncertain times, Thai commercial banks are emphasising liquidity management and appropriately managing costs. They maintain high levels of capital reserves

and, according to stress tests by the Bank of Thailand, the sector remains resilient and able to resist future risks and uncertainties. This will allow the commercial banking system to support credit demand and manage economic volatility going forward.

One prominent change that has persisted since the pandemic is the rapid pace and degree of digitalisation in the business world. How has Bangkok Bank leveraged and deepened digitalisation since then?

We have been accelerating our digital transformation. We broke new ground in areas such as enterprise blockchain for trade finance, a new digital platform to digitise the procurement to payment process from end to end, and cross-border cash management services. We also introduced a Procure-to-Pay service using blockchain technology, which provides financing to the suppliers of one of the largest car financial services companies in Thailand. This not only simplifies but also speeds up the documentation process, ensuring that car dealers have liquidity when they need it.

For individual customers, we have been focusing on the Bangkok Bank Mobile Banking app as part of our mobile-first strategy. Now, 80 to 85 percent of transactions can be carried out online, including those for e-Savings accounts, foreign currency deposit (FCD) accounts, mutual funds, government bond accounts, and trading accounts, using an e-Know-Your-Customer (KYC) process and facial recognition technology. This year alone, we added 50 new features to our app, which now has a total of 120 features. The highlights include a virtual debit card that allows customers to own a physical and/or digital card if they choose to do so, and features that provide insurance and online account opening for deposits, including FCD accounts. We now offer a full suite of wealth products, from mutual funds and government bonds to debentures, including perpetual debentures, via our app.

With most people opting for digital-first in their banking activities, we have also become the first Thai bank to introduce an embedded insurance proposition within an app which uses data analytics to identify target customers. We are also the first bank in the country to offer products from our insurance partners (AIA, BKI [Bangkok Insurance], and BLA [Bangkok Life Assurance]) via the app, enabling people to buy insurance products with ease.

Thailand is one of the leading countries in Southeast Asia when it comes to digital payments, and we have been supporting both business and individual customers by providing

them with secure online payment systems that are convenient and facilitate e-commerce. These include offering our customers many options, such as the BeWallet app that allows customers to link their deposit account to their debit or credit card, after which they can scan a QR code to pay for goods and services while travelling abroad.

We have also been working with Thailand's central bank, in collaboration with other central banks, to pioneer real-time, low-cost cross-border payments using new technology platforms. An example is Thailand's PromptPay system that links Thailand's mobile banking services with those of partner banks in Singapore. Another innovation is a facility to make real-time cross-border QR code payments. This is now available in five countries—Vietnam, Indonesia, Singapore, Laos, and Cambodia. It can be used by our mobile banking customers, and customers from those five countries can do the same in Thailand.

We are also harnessing technologies to make our work processes more efficient and upgrade our core banking system, platforms and networks. And we are applying Artificial Intelligence (AI) and big data analytics to deliver the right products to a wider range of customers, and ensure customers purchase products that truly meet their needs.

Bangkok Bank started InnoHub, an initiative that not only tries to develop Thailand's fintech start-ups, but also introduces a 'start-up mentality' within the bank. What has the bank learned from this experience thus far?

InnoHub offers hands-on experience for our people to learn from growth-stage tech start-ups through real project execution. By working together with them, we can learn more about their approach to digital product development, agile ways of working, and experimental mindset.

I believe that with limited resources and little branding, successful start-ups are often born out of a single innovative solution or service that solves specific needs. Incumbent banks, on the other hand, usually aim to address mass market requirements with a one-size-fits-all product. So through collaboration, the bank can enjoy the best of both worlds by using start-up solutions to gain a competitive advantage and tap its existing network for a quicker time-to-market.

Moreover, we can gain customer insights from the way start-ups target segment their markets, for example, by using needs-based psychographics or AI to analyse a customer's behaviour and then use the insights to develop an end-to-end customer journey for each segment.

Through collaboration with tech start-ups, we can also encourage a paradigm shift among our employees, upskilling them through real project experience and training, while continually driving the new agile way of working and design thinking approach all in one go.

Where do you see the Thai fintech industry going in the next five years? In particular, what are your views on the promise and peril of harnessing blockchain technology for banks?

Blockchain and Distributed Ledger Technology (DLT) has been developing swiftly in recent years. Although the hype about cryptocurrency has declined during the crypto winter, the blockchain industry's development continues. In fact, blockchain has been adopted by financial institutions for use cases such as trade finance and international money transfer due to its ability to develop digital trust. The Bank of Thailand also encourages banks to adopt blockchain to improve their products, services, and business processes by leading infrastructure projects such as Inthanon, Inthanon-Lionrock, mBridge, and digital supply chain projects.

Cryptocurrencies and non-fungible tokens (NFTs), on the other hand, are considered digital assets, which have inherent risks. As a result, the Bank of Thailand does not allow banks to directly conduct business related to these assets or invest in them.

Bangkok Bank has been experimenting with blockchain from the start to understand its potential and limitations. In our opinion, enterprise-grade, stable-value, and consortium-based blockchain solutions are more likely to be adopted by banks. With blockchain-based solutions, banks can enhance key factors such as traceability, efficiency, and speed of transactions which are becoming more and more important to our customers.

However, blockchain is not a silver bullet. Some use cases can benefit from blockchain while others are better supported using other technologies. Introducing blockchain without careful consideration may instead bring about unnecessary costs and complexity to the business. Potential use cases of blockchain and DLT include trade finance, supply chain, cross-border transfers, and digital identity. For trade finance, blockchain projects such as Contour and Marco Polo allow the bank to collaborate better with all stakeholders such as trade counterparts, logistics services, and customs by improving traceability, time, and costs.

In the past decade, technology has advanced at an unprecedented speed. However, it also comes with risks from cybersecurity, and governance and regulatory issues. Banks as service providers need to be continuously proactive

about countermeasure solutions, technology governance, and emerging regulations in order to meet customers' expectations and support the Thai and ASEAN economies for years to come.

What are some specific domains that you are keeping a close watch on? How are you preparing Bangkok Bank to capitalise on emerging opportunities?

One of our major strengths is in the energy industry. It is a complex business where we have been for many years, so our people have a good understanding of the sector. We arrange and fund many major energy projects, not only in ASEAN but beyond—our clients have investments in China, Japan, Australia, and the US. We help them to invest in greenfield developments and acquisitions, and also to develop whole new industries and supply chains. Now with the keen and growing interest in green and sustainable development, we are funding major investments in renewable energy, smart grids, mass transit, and evolving industries such as electric vehicles.

Bangkok Bank plays a significant role in supporting fund-raising efforts to achieve the sustainability goals of leading private companies in Thailand, both as a lender and as an underwriter for environmental, sustainability and governance (ESG) debentures. We are the leader in the underwriting of green and sustainable bonds with around a 70-percent share of the market in Thailand.

We're also financing many renewable energy projects internationally. We have been supporting development projects in Vietnam, Indonesia, Laos, China, and elsewhere. The proportion of renewable energy loans compared to our total energy loans is currently 27 percent, and we expect this to grow.

Despite the many challenges, Bangkok Bank has successfully expanded to become the sixth largest bank in ASEAN and the largest bank in Thailand by assets. What would you say are the key factors for this success?

We have been Thailand's pioneering international bank since 1954 when we became the first Southeast Asian bank to open a foreign branch. We opened our first foreign branch in Hong Kong just 10 years after our founding in 1944. Since then, we have continued to expand and strengthen our international banking business to support our customers as they grow their businesses. Today, we have the largest network of any Thai bank with a strategic focus on the ASEAN region, operating 28 branches in 13 economies including Cambodia, China, Hong Kong, Japan, Laos, Malaysia, Myanmar, the Philippines, Singapore, Taiwan, the UK, the US, and Vietnam. In addition,

we have around 270 branches through PermataBank, our subsidiary in Indonesia. We also have wholly-owned subsidiaries in China and Malaysia.

Our branch network is the key to our success. It provides us with a strong competitive edge. Our overseas branches work very closely with one another, as well as with our head office in Thailand. This gives us the ability to serve our clients across the network; we support them in their local operations and when they expand across the region. By leveraging these strengths, we are able to retain our clients for the long term. Our customers really appreciate the full support we can give them, such as being able to apply for local loans and use cash management services in the countries where they operate. We understand our clients' business and grow alongside them.

We are really committed to our purpose to be a trusted partner and reliable close friend, *'puan koo kit mit koo baan'* in Thai, which means we stay close to our clients to understand them better, build trust, and help them with their business and finances in good times and in bad.

What has influenced you the most in your leadership style?

I come from a banking family—my grandfather founded the bank, and my father was president and chairman of the bank, so I have lived and breathed the business from a very early age. Within the bank and also in our industry, I have had many mentors who have impressed on me the importance of integrity and building trust, and being customer-focused.

I have also had the benefit of my education—I studied chemical engineering at Worcester Polytechnic Institute and the Massachusetts Institute of Technology (MIT), as well as management at MIT. This has helped me develop a systematic approach to management. I should also add that I have learned a great deal from our customers. I am keenly aware of what is happening in the economy and have a realistic perspective of where things are. [ANI](#)

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Tan Chin Tiong
is Professor Emeritus of Marketing at Singapore Management University

Creating the Capacity for Digital Government



It's more than tech.

by Cheow Hoe Chan and Steven M. Miller

Digital transformation is a fundamental reality for businesses, given customer expectations of on-demand service and digital access, cloud-enabled cost efficiencies, and imperatives for data security, among others. Governments are not immune to these forces. Citizens and other legal residents are a government's 'customers', interacting with it on critical matters such as housing, education, and healthcare.

With digital technology increasingly woven into the fabric of everyday life, citizen interactions with their government have shifted to digital platforms accessible via mobile phones, computers, and assorted digital devices. Citizens also expect their government to function as effectively and efficiently as leading tech firms like Amazon and Apple.

A well-thought-out data policy, supported by a tech stack and cloud infrastructure, an agile way of working, and coordinated whole-of-government leadership, are therefore fundamental to successful government digital transformation efforts, as exemplified by the Singapore government's digital journey.

ORIGINS OF GOVTECH

In October 2016, the Singapore government set up the Government Technology Agency of Singapore (GovTech) to drive the development of technology and digital solutions needed for Smart Nation and related digital transformation efforts across the Public Service.¹ Initially, GovTech was under the Ministry of Communications and Information, but it came under the purview of the Prime Minister's Office (PMO) in May 2017. While GovTech is focused on technology capabilities, as well as the planning, design, execution, and operations of digital solutions, the Smart Nation and Digital Government Office (SNDGO)—its sister organisational unit and close partner which was formed in 2014—is responsible for the policy planning and coordination aspects related to Smart Nation and digital government efforts. Together, SNDGO and GovTech form the Smart Nation and Digital Government Group located within PMO.²

Although GovTech was created in 2016, it has a long lineage. Back in 1981, Singapore established the then National Computer Board (NCB) "to implement the computerisation of the Civil Service, coordinate computer education and training, and develop and promote the computer services industry".³ In the early days of NCB's public sector computerisation efforts in the 1980s, the government had to build its own

internal information technology (IT) capabilities and manpower as the work was new to Singapore, and there was not much of a local IT vendor ecosystem, aside from a few multinationals like IBM which had local offices and their own IT services engineering staff. Over the course of the 1990s and the first decade of the 2000s, the pendulum for executing public sector IT efforts swung almost fully in the other direction towards vendor outsourcing. As a result, much of the internal technology and engineering competencies within the civilian sectors of government for hands-on designing and delivering IT applications dissipated.

It was not until 2010, given the impetus of developments related to the Internet, e-commerce, smartphones, and the launch of commercial cloud service providers, that the rebuilding of internal capabilities for government digital services commenced. At that time, about 90 percent of the government's spend on IT operations was outsourced to external vendors, and this lack of internal IT engineering and digital technology capability was a major bottleneck impeding the government's digital transformation. In response, an experimental government digital services team was formed in 2010 with about seven people. By the end of 2015, this new team comprised over 100 people, who were split into a product development unit and a data science unit. By early 2023, about a third of GovTech's total staff of approximately 3,600 people had been employed to handle product development, product management, and core digital technology competencies.

Given that GovTech serves over 60 ministries and agencies, the prospect of building core capabilities to drive digital transformation and provide new types of digital services was daunting.

THINK BIG, START SMALL, ACT FAST

Given that GovTech serves over 60 ministries and agencies, the prospect of building core capabilities to drive digital transformation and provide new types of digital services was daunting. In the initial years of this capability build-up (2010-2016), technological developments such as cloud computing, Software-as-a-Service, Internet-of-Things (IoT), data analytics, and the machine learning subarea of Artificial Intelligence had already come to the fore and were fundamentally changing the IT services landscape. The term 'digital transformation' had emerged as an industry buzzword during this period to connote going beyond just using more advanced IT solutions to creating new types of 'digital-first' services and rethinking what was possible from the confluence of new sources of data, new ways of processing it, and new ways of engaging with users. How was GovTech to deal with the seemingly vertical learning curve while creating new products as part of digitally transforming an organisation as complex as a government?

The answer: start small and move fast. By doing so, through successive rounds of developing just-viable-enough usable product deliverables starting with a minimum viable product (MVP), improved iterations could eventually lead to realising the vision for a large-scale end-product. This type of learning-by-doing iterative approach is key to successful digital government efforts.

To facilitate thinking about new possibilities for MVPs, GovTech offers a mechanism called 'Whitespace', where anybody within the organisation can approach senior management with a promising idea beyond ongoing or planned digital product initiatives. The staff involved in approved Whitespace initiatives are typically given three months and up to S\$50,000 to produce a working prototype. If the prototype is deemed feasible, both in terms of meeting a real user need and being realised technically, the development team gets another six months and S\$100,000 to build a next-step prototype and work towards creating an MVP. Even if these projects are discontinued as a result of ongoing evaluation, they are not deemed a waste of time or money, as it is a small sum spent (compared to say the traditional vendor procurement system) to get hard evidence of whether a new concept has business and technical viability. More importantly, the experience gained in these types of early-stage exploratory efforts almost always generates capabilities that turn out to be useful for future projects and follow-on product building.

THE HORIZONTAL APPROACH

GovTech also identified the need to build horizontal platforms that provide common infrastructure and software services, as well as software application products that can be used—and re-used—by different organisational functions and business verticals. Within the government, this means common usage across the various ministries and agencies that are responsible for the multitude of internal and resident-facing government activities in areas such as education, environment, finance/taxes/retirement funds, housing, law, manpower, trade and industry, and transportation. For private sector companies, this would correspond to common usage by different functional departments such as marketing, finance, human resources, procurement, operations, and customer support. Many organisations trying to 'go digital' pursue and often struggle with building these types of common platforms and products.

The Government on Commercial Cloud (GCC) and the Singapore Government Tech Stack (SGTS) are examples of horizontal platforms at the foundation level and the middle level of architectural capability respectively needed to support a complex organisation like a government (refer to Figure 1).

DIFFERENT LAYERS IN SINGAPORE GOVERNMENT TECH STACK

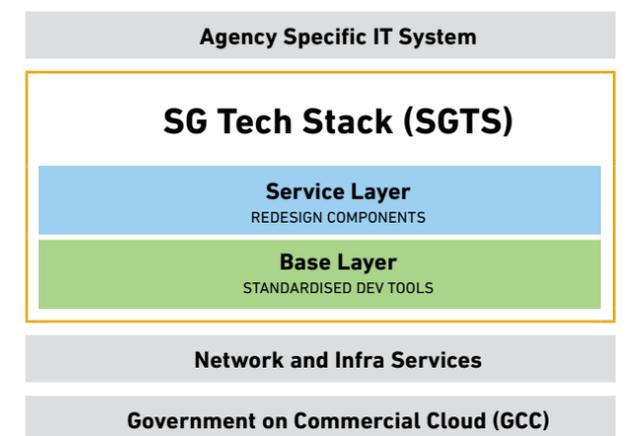


FIGURE 1

Source: GovTech



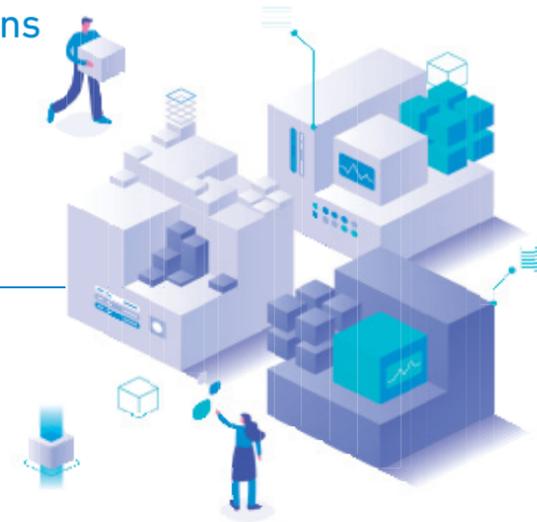
Aspects of government cloud usage policies were ‘wrapped into’ specially crafted environments within the cloud services of several major commercial cloud providers to create a GovTech-specific platform within the more generic commercial cloud provider platform. The GCC environment also provided enhanced cybersecurity, simplified onboarding, automation of workflows, and the observability, auditing, and monitoring of service execution required to ensure continuous compliance with Singapore government policies for commercial cloud usage.⁴ This made it possible for an individual ministry or agency to use GovTech’s pre-specified GCC platform that has already been deployed for a particular cloud vendor (Amazon, Microsoft, or Google) to package requirements for compliance, security, data residency, and other complicated issues into one integrated solution.

It also provided the framework and support infrastructure for working with more than one commercial cloud vendor, which made it substantially easier for each ministry or agency, including GovTech’s own divisions, to deploy allowable applications on the commercial cloud in a consistent, safe, and reliable way, and to do so more quickly and securely at reduced costs. As of December 2022, there were over 600 government digital services deployed across the various GCC platforms.

SGTS, a suite of tools and services hosted on a common infrastructure, was built in parallel with GCC. The various platform tools within SGTS can either be deployed on an external GCC infrastructure or an internal government one. SGTS provides many types of software building blocks and services that can be used to create a wide range of IT applications and digital services. GovTech has been steadily expanding the libraries of these building block tools and services, using these common components to create a larger proportion of new government IT applications.⁵ As a result, the Singapore government has been making less use of ‘monolithic’ function-specific legacy systems, which are typically self-contained IT systems with their own servers and features built by external system integrators.

The base layer of SGTS mostly consists of tools and software applications to enable and deploy a DevOps environment, within which software developers (devs) and operations (ops) teams are able to accelerate delivery through automation, collaboration, fast feedback, and iterative improvement.⁶ It also contains APEX (Application Programming Interface Exchange), a centralised Singapore government application programming interface (API) directory and gateway that provides a means of facilitating data sharing and exchange across the many Singapore public sector databases

By continuing to create new types of Lego-like blocks (software tools, services and common applications), a wider and more sophisticated range of IT applications and digital services can be ‘built up’ without having to start from scratch.



and software applications. APEX acts as a bridge that vastly simplifies information exchange between two different software applications, or between a software application and a data repository. It also contains coded rules that manage who within the government has the authorisation to access specific types of data and how that data gets transferred internally to support the needs of an approved digital service or IT application.⁷

Technology developers within the government can use APEX to discover the types of data available, identify where it is located, view the permissions and controls required to access and use it, and invoke the appropriate API to utilise the data as needed in the application being created. Using APEX, a government IT application or analytics model can access the required data from ‘a single source of truth’, which has the responsibility and accountability for the accuracy and management of that specific data item. Establishing this ‘single source of truth’ framework was a major policy initiative that SNDGO and GovTech orchestrated across the government.

Because of APEX, government staff creating or enhancing IT systems and digital services can more rapidly locate and securely access government data, and subsequently incorporate it into a software application. The pre-built APIs in APEX eliminate the need to build direct connections to every system in order to access the data. This promotes secure and permissions-protected data sharing within the government, and greatly reduces digital silos and duplication of efforts.

The SGTS service layer, where higher-level reusable components and services are built, sits on top of the base layer. Singpass, the key enabler of Singapore’s National Digital Identity framework, is perhaps the best-known example of a service layer application. Instead of every government software application across different agencies having its own customised authentication service to verify users’ identities, they now all use Singpass. GovWallet, a common payment service for managing and executing government pay-outs to beneficiaries (e.g., a baby bonus payment or a Workfare Income Supplement), is another service built into this layer.⁸ These and many others available in the service layer are easy for developers to use, and are designed to be compliant with government requirements for security, privacy, stability, and operational sustainability.

One could think of the lower layers in Figure 1–GCC, the network and infrastructure services layer, and the base layer of SGTS—as the ‘plumbing’ and other supporting ‘utilities’ for the entire system. When building a physical house, proper design and building of plumbing and electrical wiring lets one make alterations to the house without having to redo the pipes and wires. Similarly, a solid base in a tech stack enables government technology staff to focus on understanding, defining, creating, and testing actual use cases without having to wrestle with simultaneously building all the necessary lower-level infrastructure.

Another way to understand Singapore’s tech stack approach is to think of them as Lego blocks. The pre-existing, well-designed building blocks of the tech stack—some for standard functions and others for highly specialised functions—are cleverly combined to create a much larger and more complex entity. By continuing to create new types of Lego-like blocks (software tools, services and common applications), a wider and more sophisticated range of IT applications and digital services can be ‘built up’ without having to start from scratch.

The combination of GCC and SGTS thus represents a particularly important shift in Singapore’s thinking about digital government.

DATA ARCHITECTURE AND POLICY

When GovTech was formed in 2016, government data policies still forbade the use of the commercial cloud for nearly all internal work except for some smaller scale pilots. GovTech had to quickly initiate work with SNDGO to craft policies for the usage of commercial cloud services. For the longest time, technology infrastructure meant having supporting data centres located nearby with tangible servers and firewalls that the organisation owned and maintained. With much of the need for physical infrastructure for data centres having disappeared with the steady growth and increased reliability and security of commercial cloud services (although restrictions for the cloud servers to be resident in the country are often applied), the new policies had to address specific issues like: what kind of government processes can (and cannot) go onto the commercial cloud? Where does the data reside? When must it reside in Singapore? Can it ever be outside the country? When must the government have physical control over some or all of this infrastructure?

It would be impossible for each ministry to address and solve these issues independently. Before GovTech could build and implement the technology, it had to work closely with SNDGO to identify, define, and answer policy questions pertaining to data architecture, usage, and protection. Being under PMO, SNDGO and GovTech are positioned at the ‘centre of government’, making it possible to combine efforts to effect the necessary changes to data policies for proceeding with Smart Nation and digital government efforts.

The concept of a ‘single source of truth’ illustrates the importance of good data architecture and coherent data policy. For example, until recently, when citizens and residents interacted with the government, their address was collected multiple times because every agency would do it separately. It was not uncommon, and very annoying for residents, to have as many as 20 instances of their address stored across various government databases.

The concept of a ‘single source of truth’ illustrates the importance of good data architecture and coherent data policy.

Clarifying responsibility within the government for which agency owns which particular type of data such as an address, birth date, or national identification document (ID) number is a foundational pre-requisite for realising a single source of truth. GovTech supported SNDGO in its effort to designate where the single source of truth for key data fields should reside and which unit in the government should manage it. For example, the Immigration and Checkpoints Authority (ICA) under the Ministry of Home Affairs was designated the 'owner' of a citizen or permanent resident's official address. So when a person changes residence, it needs to be only updated with a single agency. Once done, ICA's systems automatically disseminate the updated information to the many other government information systems that make use of that person's address. Similarly, foreign workers in Singapore who hold various types of work visas report updates to their address and other visa-related information to the Ministry of Manpower as this agency has been designated as the single source of truth for people in Singapore on any type of work visa.

Deciding which specific part of the government should be responsible for certain key types of data and even specific data fields might seem like a low-level execution detail, something that is very operational and even trivial. *That is not at all the case.* Singapore considers designating responsibility and accountability for the single source of truth for data items to be so important that there is a high-level committee which

meticulously goes through and makes the final approvals on the designations for data responsibility.

If the government can clarify ownership of the data, it can move forward with how to clean the data as part of

maintaining and improving data quality, and how to best manage data updates flowing from the designated single source of truth to all other applications across the government which make use of that data.

Another important government-level data policy decision was whether the storage of most civilian-related data should be centralised or handled in a more distributed fashion by each of the relevant agencies. The decision was made against centralisation because it then becomes a very high cybersecurity risk. Hence, different agencies were tasked to own the storage and protection of certain types of data, while closely coordinating with cybersecurity experts in GovTech and the Cyber Security Agency of Singapore.

The substantial progress made with defining data policies and determining data ownership has amplified the effectiveness of APEX. Singapore has pre-vetted a large number of commonly occurring use-cases for cross-government data access, and it has either greatly simplified the approval process or pre-approved certain types of 'lower-risk' requests, though always with proper protections and controls. The review and decision process when special permissions for data access are required has also been shortened significantly. Now, even if data access is required from multiple ministries for an upgraded or new digital service, developers can simply make the request for access, and in most situations, that access is quickly reviewed and promptly granted in a matter of a few days.

The contrast to the old way of working could not be starker. Prior to the 2017/2018 period, it was not uncommon for a data access request for an IT or digital services project *within the government* to take up to a year for review and approval. It would even be longer if multiple ministries were involved. This substantially impeded the rate of progress on Smart Nation and digital government initiatives.

SHIFT LEFT WITH INTERNAL TECHNOLOGY CREATION CAPABILITIES AND TOP-LEVEL LEADERSHIP COMMITMENT

Platform and product development teams within GovTech have embraced and expanded upon agile development approaches based on rapid, continuous iterations, where software under development is updated and tested regularly. Even though problems will occur with the development of new software and digital solutions, the use of the agile approach results in them getting detected and addressed much earlier in the project cycle before the effects of the problem are magnified. In parallel, the increasing use of pre-built and pre-tested infrastructure services, software services, and common product modules has improved software and systems quality by substantially reducing the number of errors that arise when infrastructure and software are built from scratch. This is a concept in software and digital solution development referred to as 'shift left'. When this is adopted, bugs are detected and fixed earlier in the lifecycle of the project. Cybersecurity compliance is addressed at the very beginning, not as an afterthought. Because of these cumulative efforts with the tech stack, data architecture and policies, and agile practices, several recent GovTech software application projects have gone live with only a small number of errors found during the final User Acceptance Testing (UAT) and other final pre-production tests.

This way of building software substantially reduces the troubleshooting nightmare of traditional IT methods at the pre-release stage of UAT and cybersecurity penetration testing. It is not uncommon for an organisation deploying a large new system using more traditional development practices to uncover a huge number—for example 1,000 items—where the system does not pass the final UAT or penetration test. When these bugs are not discovered until the supposed end of the development effort, it results in an immensely stressful 'death march' for the development team to fix the typical 10 percent critical findings (100 bugs) and another 20 percent high priority problem findings (200 bugs) as quickly as possible, often resulting in blown budgets, delayed delivery, and a demoralised project team.

ABILITY TO RESPOND TO URGENT NATIONAL NEEDS

Agility during development and deployment in response to meeting an urgent national need was demonstrated by GovTech's release of the TraceTogether app and hardware token in the early weeks of the COVID-19 pandemic in 2020. While the TraceTogether concept was simple—using Bluetooth

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on mobile phones to track interactions between COVID-19-positive individuals and others in public spaces—the implementation details and associated privacy protection issues were very complex. A team of engineers within GovTech was able to build and release the first working version of the TraceTogether mobile phone app in just four weeks. A traditionally executed software development project of equivalent scope could have taken months or even a year.

The TraceTogether app worked fine for the many mobile phone users who knew how to install it on their phones and switch on Bluetooth. But there were other segments of Singapore's population who were not capable, or regular mobile phone users, such as the elderly and young children. To meet the needs of these non-mobile phone users, GovTech also built a TraceTogether hardware token that could be conveniently carried or worn. The GovTech Sensors & IoT team designed the hardware token in less than four weeks, and it was launched within two months.

Additionally, during the early days of the COVID-19 pandemic, another small team at GovTech developed and released the SafeEntry application used for check-ins when people entered locations with high footfall such as supermarkets, food outlets, and shopping centres. This application was developed in a remarkably short time, such that a working initial prototype was created within a couple of weeks.⁹ Although TraceTogether and SafeEntry served different purposes and each application had distinct functionalities, the two were combined into a common interface and application. This was also carried out quickly.



If the government can clarify ownership of the data, it can move forward with how to clean the data as part of maintaining and improving data quality, and how to best manage data updates flowing from the designated single source of truth to all other applications across the government which make use of that data.

Using best-practice or 'hot' emerging technology capabilities will not lead to success if you do not have clarity on what you are trying to do for your users and stakeholders.



All this was possible because GovTech had substantially built up its in-house technical and operational expertise for creating and deploying digital solutions. When organisations outsource nearly all their IT development work and supporting operations, over time, staff will become full-time administratively-oriented contract managers for the outsourced projects, losing the capability to function as hands-on technology developers and decision-makers. In contrast, when organisations build or rebuild core internal IT and digital solution capabilities, employees and teams have the competencies to assess whether a certain design approach or choice of technology makes sense given current and emerging practices, as well as how to design it, and determine how to get going on initial iterations to validate and improve the approach. When such an organisation conducts procurement from external vendors or fully outsources certain initiatives, it also benefits because the in-house professionals can better assess the solution proposed by the vendor, its cost-effectiveness, and whether delivery within the specified time frame is feasible.

KEY LEARNINGS

A few important reasons underpin GovTech's progress and success:

- Building up strong teams of highly competent people across the realms of software project and product development, platform and infrastructure development, cybersecurity, service delivery and operations, related aspects of governance, and supporting organisational functions.

- Providing technology and solution development teams with steadily improving technology building blocks, such as the expanding set of components within GCC, SGTS, and the APEX API Exchange. Also providing employees across all types of job roles with easier and more productive ways of doing their everyday work, by enabling support applications such as the Singapore Government Developer Portal, Digital Workplace for seamless hybrid (physical, virtual) collaboration, and FormSG for simplifying the process of creating digital forms.
- Receiving strong and well-coordinated support from senior management within GovTech, SNDGO, and across PMO and all other ministries.
- Staying focused on real user needs and real problems (current, emerging and future), and never forgetting that the reason for building up capabilities in key technology areas is to address these needs and problems.

Significant credit must go to Singapore's senior government leaders, right up to the Prime Minister. As demonstrated during the COVID-19 pandemic, everyone across the government was able to quickly come together to meet the unprecedented challenge and provide high level support for making well-considered exceptions for some of the standard bureaucratic processes that ordinarily take up more time. Many special policies to facilitate the new digital solutions for Singapore's COVID-19 response had to be quickly crafted, and other existing ones were tweaked. However, the government's commitment to digital transformation had helped put in place

comprehensive data and security policies, which enabled unanticipated deployments of new technology solutions to be carried out quickly and effectively. The pandemic also provided GovTech with important lessons and experiences for improving approaches to supporting ongoing digital transformation efforts under more normal circumstances.

In closing, two fundamental points bear repeating. The first is that you need to know what problem you are solving. As obvious and elementary as this sounds, we cannot overstate how often this basic point is ignored or not sufficiently considered by teams across industry, as well as within the public sector when new digital technology initiatives are enthusiastically proposed. Using best-practice or 'hot' emerging technology capabilities will not lead to success if you do not have clarity on what you are trying to do for your users and stakeholders, what problems need to be addressed along the way, and how success can be evaluated. Even if you are doing an experimental project only to build internal skills and capabilities in a new technology area like machine learning or augmented/virtual reality, you still need to know how to target, specify, and evaluate your progress and your performance gaps.

The second is that you must learn how to learn when you embark on new initiatives, especially in uncertain and ever-changing settings, by focusing on a subset of your targeted problem area, starting small, moving fast through iterations and evaluations along the way, and refining the solution based on results, and the most recent updates to the problem statement and context. You cannot overreach and attempt to 'boil the ocean'. As your organisation accumulates more capability and experience with this way of working towards digital transformation, iteration cycles gradually become faster, and the amount of work that can be accomplished within an iteration grows and becomes more ambitious.

Of course, digital government is enabled by technology, as well as the organisational capabilities and individual-level skills to use technology in effective ways. But digital government is not primarily about technology. Rather, it is more about solving clearly defined and relevant problems in an innovative way. ¹⁰

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Endnotes

- ¹ Several other large units within the Singapore government, in particular the Ministry of Defence, the Ministry of Home Affairs, and the Ministry of Health, have their own large internal 'GovTech-like' special technology units to support their ministry-specific IT and digital needs. GovTech focuses on civilian sector (non-military, non-national security) IT and digital services efforts, and works closely with all civilian sector Singapore ministries and their affiliated agencies, and also closely coordinates as appropriate with these other government technology units.
- ² Smart Nation Singapore, "SNDGO Ministerial Committee".
- ³ Singapore Infopedia, "National Computer Board", November 15, 2021.
- ⁴ Singapore Government Developer Portal, "Government on Commercial Cloud (GCC) – A 'Wrapper' Platform for Onboarding of Government Services into the Cloud".
- ⁵ Singapore Government Developer Portal, "Singapore Government Tech Stack".
- ⁶ GitLab, "What is DevOps?".
- ⁷ Singapore Government Developer Portal, "API Exchange (APEX) – A Centralised Data Sharing Platform for the Public Sector".
- ⁸ Singapore Government Developer Portal, "GovWallet – Reimagining Government Disbursements".
- ⁹ GovTech Singapore, "SafeEntry's Development Story", September 1, 2020.



An effective customer service platform and a strategic communication channel.

by Kapil Tuli and Sheetal Mittal Bhardwaj

One of the most successful global social media campaigns is by the cosmetic brand e.l.f. #eyeslipsface on TikTok in 2019. It generated seven billion views and five million user-generated videos, spreading organically through Instagram, YouTube, and Twitter, with many celebrities like Lizzo, Ellen DeGeneres, and Reese Witherspoon joining in too.¹ This is just one example of how social media in the last decade has fundamentally and irrevocably altered advertising.

With more and more people spending time on social media platforms, business managers are excited about its pervasiveness and dynamism, as well as its ability to create an incessant buzz. This has led to the incredible success of many promotional campaigns. A case in point is Nike's 'Play for the World' commercial, a communal display of athletic feats that people were accomplishing indoors. Within an hour of its release on Twitter, it was shared by high-profile Nike-sponsored athletes like Cristiano Ronaldo, Tiger Woods, Michael Jordan, and Carli Lloyd on their social media channels, making it go viral in no time.² Similarly, another Nike commercial titled 'You Can't Stop Us', which tells the powerful story of athletes undeterred by any kind of adversity, clocked 23 million views on Twitter and 16 million views on YouTube within just 48 hours of being posted on social media.³ Or take the example of the athletic apparel retailer lululemon, whose marketing strategy includes putting considerable social media content on many platforms, attracting three million monthly unique viewers on its website, 3.8 million followers on Instagram, 2.7 million on Meta, and 990,000 followers on Twitter.⁴ Or consider Sephora's launch of its green eyeshadow on Instagram, and the huge response it garnered in a short time.

Clearly, with the advertising journey evolving from print, radio, and billboards to television, cable TV, and Internet display advertisements, social media is not only the next logical step but also the most rewarding for brands today. It is able to hyper-target its audiences, deliver personalised content based on demographics and user behaviour, and drive customer engagement through live conversations around the content. No wonder, the revenue streams of some of the leading social media companies such as Meta and TikTok are predominantly from advertising.

A CUSTOMER SERVICE PLATFORM

Social media's prowess is not limited to advertising alone. A fundamental difference between social media and traditional broadcast media is that the former is not only about broadcasting but also interactions. Social media platforms have evolved over time on two key parameters: richness of content, and degree of interaction with consumers. The richness of content refers to the amount of information that is provided to consumers through the medium in a given time frame. Degree of interaction refers to the scope of a two-way communication process with consumers, whereby they can react, as well as generate and disseminate content.

Until the advent of social media, while there had been a progressive improvement in the ability of traditional channels to provide richer content in terms of both information and visuals, it was only a linear improvement with negligible scope for any interaction with consumers. The communication had been essentially one-way, where the companies talk, and consumers listen. However, with social media comes the ability to interact and have a dialogue with consumers, enabling companies to use it as a dynamic customer service platform.

If you scratch beneath the surface, you will find many organisations are leveraging social media not only for advertising and promotions, but also for understanding and interactions, as well as providing customers with a platform to establish and maintain customer relationships. One such entity is Jun, the Spanish town that reportedly runs on Twitter, with more than half of its 3,500 residents having Twitter accounts.⁵ The mayor and his team trained them on how to use Twitter for verifying identification documents (IDs), reporting matters to the police, or making complaints about utilities. To foster greater accountability and transparency, town workers such as street sweepers also post messages about their daily activities on Twitter.

Another example is KLM Royal Dutch Airlines, which ventured into social media in 2009 with a basic Facebook

page and a blog. Over the years, it has sharpened its strategy by analysing and understanding consumer expectations and behaviour across social media platforms. KLM believes that it is important to provide different formats of customer service through a wide range of social media channels. Thus, besides enabling bookings to be made on platforms such as Twitter and Meta, it offers 24/7 customer service on messaging applications like WhatsApp, Facebook, Messenger, WeChat, and Kakao Talk in 14 languages. The airline asserts, "At KLM we are where our customers are".⁶ As of end-2022, KLM had more than 25 million fans and followers on social media channels. It receives over 200,000 mentions every week, including 35,000 queries or feedback.⁷

Recent market surveys by social media management companies Hootsuite and Sprout Social point out that most customers expect a real-time response from businesses on social media platforms. Of the more than 150 million people who message companies on Instagram Direct every month, 76 percent do so to request for customer service or support, 83 percent of them expect a response within a day, while 50 percent expect one within an hour.⁸ However, 49 percent said they never get a response to their social media complaint. Most companies are far behind in understanding the importance of responding to a customer's direct message, tweet, or query posted on the company's Facebook page in a timely manner. Responsiveness to customer queries on social media is critical not only because customers expect it, but it also makes good business sense. For example, a study showed that when a tweet to an airline is answered within five minutes, the customer is willing to pay almost US\$20 more for a ticket in the future.⁹ KLM targets a customer response time of less than 30 minutes to any query, and promises to resolve the issue within 24 hours.¹⁰

A decade earlier, most companies handled customer service primarily over the phone. That naturally meant that an employee could only serve one customer at a given point of time. But on social media, an employee can receive and send

Most companies are far behind in understanding the importance of responding to a customer's direct message, tweet, or query posted on the company's Facebook page in a timely manner.



Bots are used to answer, regulate, and filter social media queries. If a query is not standard, it is handed over to the human interface, saving precious manhours in the process while engaging customers without any delay.

messages to multiple customers at the same time. Moreover, it is an asynchronous channel; this is unlike phone calls where an employee does not have to respond immediately and can take some time to find an appropriate solution for the query before replying to the customer. This enables a high level of efficiency and provides greater customer satisfaction. Going back to Jun's example, the Spanish town accrues more than US\$380,000 in savings, as estimates suggest that it costs only US\$1 to answer a customer query on Twitter, versus US\$6 per service call.^{11,12} This is in addition to building greater empathy between the government and citizens.

The use of Artificial Intelligence (AI) has further enhanced the efficiencies enabled by social media. AI-based algorithms can be trained as per a company's customer service protocol to produce preliminary responses to a customer. Digital bots, the next advancement in the domain, have improved the productivity of customer service personnel manifold. In fact, this silent transition in customer service has been unfolding over the last eight to 10 years—from 'one customer per employee at a time' service rendered on phone at a call centre, to an employee responding to multiple messages at the same time on social media, to a shorter response time using AI and machine learning (ML) tools, to using bots that can answer, regulate, and filter social media queries. If a query is not standard, it is handed over to the human interface, saving precious manhours in the process while engaging customers without any delay. Consider the example of KLM once again. Having consistently adopted the newest social media technologies, the airline has mastered how different levels of customer service efficiencies can be achieved on chat windows, be it a quick flight status update on WhatsApp/Messenger, or the use of AI to reply, or having its bot BB to provide solutions to passengers' problems.

A STRATEGIC COMMUNICATION CHANNEL

Some brands and organisations like KLM and Jun have figured out that the real advantage of social media is its value as a strategic communication channel, not simply because of the

tremendous efficiency it brings to delivering customer service, but also in how it enables public relations (PR) management, market research, and most importantly, social listening. Social media platforms are incredible in that they enable brands to actually listen to what their customers think, feel, and talk about in real-time. This is something that would have been unthinkable merely a few years ago, and a marketer would have paid an arm and a leg to access such data. Consider McDonald's, the fast food giant, which has more than 260 million followers. How can it afford to ignore them and not listen to what they are talking about, especially if a customer posts some concerns?

The real-time insights that social media provides enable fast turnarounds that are not possible through traditional consumer surveys. KLM and South Western Railway conduct sentiment analysis of online chatter to keep track of their customers' perspective and develop their communication strategy in line with the consumer insights drawn from it. A company can also drive effective PR through social media by showcasing its work environment, culture and ethical values, or corporate social responsibility (CSR) initiatives. Its employees or partners may also post about their positive experiences with the organisation online.

Additionally, social media can be leveraged to support functions such as operations. South Western Railway has located its social media team next to where its rail operations and emergency services are tracked and coordinated. Moreover, a monitor for social media is right next to the monitors that display comprehensive data on rail status, as well as train movements and conditions. The social media team runs keyword searches on various platforms to find any matters related to South Western Railway operations, and they often discover customer problems before the staff on the ground. This enables the operations team to quickly rectify the issue even before it is officially notified. Another example is National Australian Bank (NAB), one of the largest banks in Australia. To deal with the COVID-triggered rush of a 200-fold increase in social connections, the bank rolled out Apple Business

chat (iMessage) along with WhatsApp, allowing its customers to connect with its bankers by calling them via their iPhones or directly clicking to call when automatically prompted.¹³

The key reason behind the success of these companies in leveraging social media is that they have embraced it organisation-wide, thus investing in it as a strategic cross-functional resource. It is not done perfunctorily as a mere subset of their advertising budget, an operational style that was prevalent in the days of traditional media.

HOW TO BUILD AN EFFECTIVE SOCIAL MEDIA STRATEGY

Social media is an imperative in today's world for companies to be able to reach out to their customers, have a meaningful dialogue, and achieve higher levels of efficiency in customer service and operationally. But a business must adopt a social media strategy that is coherent, consistent, well-thought-out, and in alignment with its corporate vision. This will not happen without purposive effort and planning. Here are some key steps that a firm can adopt to build an effective social media strategy.

Audit the current strategy

As a first step, a company should perform an audit to evaluate its current social media strategy and identify the gaps in resource allocation by asking the following three critical questions:

1. How much time do your current and potential customers, employees, and other stakeholders spend on social media?
2. What percentage of your communications budget, i.e., advertising, market research, customer service, and PR, is allocated to social media?
3. Is the answer to (2) in sync with (1)? If not, why?

Say, a company finds that 75 percent of its customers spend two hours a day on WhatsApp, while its own presence on the platform is limited. This is a big red flag. Why would you not be where your customers are? In Asia and Europe,

most small and medium enterprises (SMEs) are setting up their WhatsApp business accounts because they know most of their customers are on it, and it would become seamless and effortless for them to communicate with the company and vice versa. Hence, if a business is not active on the social media platform frequented most by its customers, it needs to ask itself—why not?

Budget this strategic resource right

The biggest challenge in the implementation of social media is not that the domain is a quagmire that is too complex to navigate, or the technology is too difficult to understand—it is in breaking down the organisational silos and liberating the budget allocations. Because under typical budget planning, there is a tendency to subsume social media under the marketing budget and forget about it. But companies have to go beyond these silos. It is important to view social media as not only a marketing, advertising, PR, customer service, market research, or human resource expense. It has to be treated as the organisational strategic resource that it can be and then budgeted for accordingly.

Put in place people and protocol

At the same time, a piecemeal approach to opening a social media account and assigning a few people to it won't cut the ice. It is important to understand the size of the customer base on the identified social media platform. What would be the protocol if a customer sends a message to the business on the platform? Who will decide the response, and who will execute it? What would be their authority levels? This would help the company determine the resources that it must allocate to social media to begin with. The budget would expand later with the natural progression of social media from advertising to customer service and social listening as well. Moreover, the larger a brand with a significant social media following, the higher would be the scale of investments required. With 350 service agents who personally address

each customer concern, KLM has one of the largest social media teams among airlines worldwide.

Train, train, and train

A business manager must guard against the company treating social media as a plug-and-play platform by designating people to manage it without training them. It is paramount to develop and invest in a dedicated social media team. For example, KLM's social media team has expertise in communications, e-commerce, customer care, ticketing, marketing, operations, and cabin crew. It also includes press managers, social media and campaign managers, online reputation managers, and an editorial board comprising technology and metrics specialists. The airline has a comprehensive training programme which staff must complete before being allowed to manage its social media.

Inadequate manpower and poor training can cause massive bad publicity like what British Airways faced in 2013. A passenger's tweet about his lost baggage was not responded to for more than seven hours, as the airline's social media team worked only from 9 am to 5 pm.¹⁴ Disgruntled, the passenger paid US\$1,000 to promote the tweet "Don't fly @BritishAirways. Their customer service is horrendous" that went viral.¹⁵ A social media opinion against a company can adversely impact its brand equity in the long term besides the immediate sales.

Mind the language

Along the same vein, a company needs to understand that social media management is not only about learning how to use the technology and chat windows, but also understanding the nuances of representation and linguistics. First and foremost, it is important for social media personnel to understand that they represent the company and hence cannot post their personal points of view. Anything they write would be seen as a formal statement of the company, which becomes a matter of record and can be reproduced endlessly.

Second, the language or visuals have to be carefully chosen, as they can be perceived differently from the intended message by customers. For example, the tweet by Burger King on International Women's Day 2021, "Women belong in the kitchen", which was meant to promote scholarships for culinary education, was widely misinterpreted and the company had to issue a public apology.¹⁶ Similarly, in 2020, when Netflix tweeted a poster designed by its team depicting young girls in revealing dance outfits to promote the French language film *Cuties*, an examination of the sexualisation of young girls, it triggered a huge backlash with #CancelNetflix trending.¹⁷

CONCLUSION

Social media needs to be embraced by the whole organisation as a strategic resource. It is vital to have an organisation-wide unified approach with different functions aligned to sending consistent messaging, and also tapping into the efficiencies that social media has the potential to unlock. Business managers need to understand that learning to manage social media is a journey of evolution that comprises one step at a time, trial and error, figuring out what works and what does not, fine-tuning it, and then scaling it up. 

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The key reason behind the success of companies in leveraging social media is that they have embraced it organisation-wide, thus investing in it as a strategic cross-functional resource.

How Boards Can Up Their Digital Game

Board leaders need to keep up with the accelerating rate of change.

by Terence Quek

When Mark Tan joined the geomancy consultancy business founded by his father, *feng shui*¹ Grand Master Tan Khoon Yong, in Singapore some 30 years ago, he wanted to address one pertinent challenge: the knowledge and expertise of the *feng shui* consultancy (and hence the entire business fortune) rested on his father and a select few *feng shui* masters in the company. Additionally, the services provided by the firm, such as generating reports for clients, were traditionally high-touch and personality-dependent in nature. This made scaling the business difficult. “It was a keyman problem,” said Tan, the second-generation director and CEO of Way Fengshui Group, who graduated from the US, and was serious about sustaining and growing the family business legacy.

In Vietnam some 1,100 km away, Bennett Neo faced a different set of challenges when he took over the helm of Saigon Beer Alcohol Beverage Corporation (SABECO) in 2018. The Vietnam stock exchange-listed company, which by the end of 2022 boasted an annual turnover of over US\$1.5 billion and a profit of more than US\$236 million, was at that time highly bureaucratic and relied largely on manual processes. From transportation to warehousing, there were insufficient systems in place to collect data to enable business intelligence across SABECO’s portfolio of subsidiary and associate companies. “We wanted to optimise our sales, marketing, production, supply chain, people and assets,” recounted Neo, who is concurrently board chair, and director of several subsidiary firms and companies in Vietnam and Singapore. “All processes had to be standardised, centralised and made simpler.”

ENTER DIGITAL

Both leaders went about transforming their respective organisations by leveraging technology and digitalisation. For the family-owned and -run Way Fengshui Group, this meant a few things: the use of e-commerce and digital marketing to connect with existing clientele and reach out to a younger audience to diversify its customer base, the building of a system to generate

personalised client reports with greater speed and efficiency, and the tapping on of staff beyond Singapore through remote working platforms to help digitalise its intellectual property and content, and develop technology to deliver its services and products. For the Vietnamese beverage giant, it was the launch of SABECO 4.0, a strategic initiative to transform its business and organisation processes and systems. This entailed the utilisation of data for more informed decision-making, the facilitation of effective information flows, the enhancement of transparency and governance, and the use of digital technology to automate practical operations. After a few years, both Tan and Neo observed good returns from their digital transformation efforts.

Way Fengshui Group saw its top line double, and its income streams diversify with no compromise on the margins. In the past, 80 percent of its service delivery was dependent on a handful of experts, the *feng shui* masters, which was not only a bottleneck, but also a critical risk for the business. Today, with systems in place, 80 percent of the service delivery could be processed by non-experts without compromising the quality of its reports. By digitalising and putting knowledge closely held by a select few into the system, the resources of the experts were freed up, allowing for greater scale and efficiency. Encouraged by the success of the Group’s early efforts, Tan wanted to continue the digital transformation momentum, so a tech department was set up within the company in 2018 with the team in Singapore coordinating the work of remote teams in India and Vietnam to continue supporting the Group’s digital and tech needs.

Meanwhile, as part of the first phase of its digital transformation journey, SABECO focused its main efforts on increasing operational effectiveness, enhancing customer service, and increasing product quality, all of which contributed to raising the awareness of the company’s brand and its profile in the market. As a result, SABECO is now reaping the rewards of doing so across several parts of its value chain. For instance, it can now track and trace the movement of its delivery trucks,

which was close to impossible in the past. This allows for better route and inventory planning, translating into huge savings from deploying their trucks along more efficient routes.

Greater efficiency and cost savings were also observed through its digital warehouse management systems. By equipping its salespeople with a tablet to access and input customer information and insights when they visited their customers, the staff in SABECO's sales network are now able to improve their customer service quality, capture important distribution insights, and manage stock levels and inventory. All the data is fed back to the headquarters for analysis, as well as resource planning and allocation, which is a huge win for the company to stay ahead of any competition.

THE PROMISE OF DIGITAL TRANSFORMATION

Encouraging results from digital transformation efforts like the ones reported by Way Fengshui Group and SABECO are becoming more commonplace with many organisations claiming success for their own digital efforts.

For instance, the world's largest furniture retailer IKEA tripled its online sales after ramping up its e-commerce capabilities and getting its physical stores to double up as fulfilment centres.² Even a technology native company like Microsoft was compelled to embark on its own digital transformation journey by making cloud solution services a strategic focus, among other strategic shifts, after its new CEO Satya Nadella updated its digital strategy.³

According to professional services company Accenture, organisations that were leading in tech adoption and innovation were growing revenues at twice the speed of those of their laggards between 2015 and 2018.⁴ With so many success stories in the market, it is no wonder most leaders are sold on the idea of using digital transformation to solve business challenges. In fact, the COVID-19 pandemic has hastened the pace of companies going digital. Figures from Statista indicate that spending on digital transformation was projected to reach US\$3.5 trillion in 2026 from US\$1.6 trillion in 2022.⁵

With so many success stories in the market, it is no wonder most leaders are sold on the idea of using digital transformation to solve business challenges.

Mind the digital gap: Leaders needed!

In 2020, McKinsey reported that 93 percent of executives believe that digital is critical to achieving their strategic goals.⁶ With so much interest in digital transformation and considering companies have been digitalising for more than a decade, one would imagine that boards and corporate leaders should be very familiar with digital and technology as they are motivated to digitally transform their organisations. Surprisingly though, only 45 percent of Chief Technology Officers and Chief Information Officers were deemed as digitally-savvy, as reported in a MIT Center for Information Systems research study on boards and digital.⁷ When it came to boards, of all listed companies in the US with revenues over a billion dollars, only 24 percent of their boards were digitally-savvy—which researchers define as having “built an understanding, developed through experience and education, of the impact that emerging technologies will have on businesses' success over the next decade”. What is more interesting is that the study found a positive correlation between digital-savviness and company performance, particularly for large companies.

Therefore, being motivated to conduct digital transformation and having interest in it are insufficient. Boards and corporate leaders keen on a slice of the digital transformation success pie need to be digitally intelligent, literate, and savvy as well. But what does this actually mean?

KNOWING DIGITAL

In a presentation to directors at the Singapore Institute of Directors' (SID) Corporate Governance Roundup in November 2022, Howie Lau, Managing Partner of NCS, highlighted “three truths about tech”. He said, “Whatever is fast now will get faster; whatever is offline now will get online, and that tech will become invisible as it becomes even more pervasive.” Just last year, within the domain of Artificial Intelligence (AI) alone, numerous innovations made headlines. Global tech company Meta released an app built on AI that can translate the Chinese Hokkien⁸ dialect into English (and vice versa).⁹ An art piece generated by AI won an art competition in the US state of Colorado. And ChatGPT took the world by storm. Meanwhile, the Maritime and Port Authority of Singapore accelerated the adoption of smart solutions to manage its fleets of automated guided vehicles (AGV). AI is but one emerging trend in the plethora of developments in digital and tech. Other emerging trends include blockchain and cybersecurity, and these have made remarkable advancements as well.

Given this constantly evolving backdrop, directors know they need to figure a way to keep abreast of new developments

or find themselves facing greater challenges when performing their role on the board. If you do not know enough about digital, you may not ask the management the right kind of questions to ascertain and mitigate risks the firm may inadvertently be exposed to. Nor can you challenge the management to be more ambitious to tap into opportunities created in the wake of the digital movement.

Yet, it may not be as straightforward when it comes to knowing digital. As Jeffrey Tan, a former member of SID's Advocacy and Research Committee, commented, “The current speed of digital change is outstripping any single person's store of knowledge, experience or capability.”¹⁰ According to Lau, directors cannot rely on only themselves or one expert source. They need to collaborate with others to see the big picture. There are also complexities involved in figuring out digital, with several opinions from various experts, and many shades of grey to decipher and discern. Identifying and projecting trends can also be challenging because of the non-linear nature of trends with frequent false dawns. For instance, AI

was a buzzword in the late 1950s, but it faded away for a couple of decades before its revival in the 2010s.

Perhaps one way is for board directors to look at frameworks, which can help them map out in a systematic way the areas that they may need to be aware of or watch closely. In parallel with the rapid development of digital and tech in the last decade, there has been a growing interest globally in the impact of digital transformation, and what individuals, organisations, and governments need to do to future-proof themselves. Prompted by concerns such as technology taking away jobs and making human workers redundant, a widening chasm in know-how among various societal demographics like the young and the old, and a greater need for governance and regulation in how tech is used and its impact on everyday lives, researchers and consultants have started scoping out and defining new digital-related knowledge, skills, and attitudes needed for the future of work and everyday living (refer to box story below for two examples of digital frameworks).

DIGITAL INTELLIGENCE QUOTIENT AND TECH QUOTIENT

In addition to digital-savviness, other related concepts like Digital Intelligence Quotient (DQ) have also begun to surface. First coined by Dr Park Yuhyun in 2016, DQ is defined as “a comprehensive set of technical, cognitive, meta-cognitive, and socio-emotional competencies that are grounded in universal moral values and enable individuals to face the challenges and harness the opportunities of digital life”.¹¹ Commercial entities like Singtel and Turkcell and national agencies like SkillsFuture Singapore and the Incheon Technopark have joined hands with many others, including the Coalition for Digital Intelligence (CDI) formed in 2018, to incorporate the DQ Framework into the world's first global standards and common framework for digital literacy, skills, and readiness (IEEE 3527.1), which was endorsed by the IEEE Standards Association, the Organisation for Economic Cooperation and Development (OECD), and the World Economic Forum (WEF) in 2018.

Such frameworks can be useful in laying out a common language, structure, and taxonomy around digital literacy, skills, and readiness that can be benchmarked, referenced, and adopted across nations and sectors worldwide. To highlight, DQ details 24 digital competencies focusing on eight critical areas of digital life (identity, use, safety, security, emotional

intelligence, literacy, communication, and rights). At a national level, the framework provides a backdrop for agencies like SkillsFuture Singapore to uplift an entire nation of workers through digital skills development that is mapped to global standards, with the goal of advancing Singapore's digital literacy level to maintain its global competitiveness and resilience. At an individual level, spelling out specific areas of digital skills such as ‘balanced use of technology’ and ‘personal cybersecurity management’ can help organisations close the gaps for individuals to help them achieve a comprehensive set of competencies that are needed to thrive in the digital age. With more nations, industries, organisations, and agencies leveraging frameworks like DQ to set policies, industry standards, and guidance, companies need to not only contend with the opportunities that tech brings, but also manage risks and expectations, especially those of end-users and customers, to ensure the business entities continue to have the licence to exist.

A board-centric framework would be the one proposed by Accenture's Greg Douglass. He proposed that boards need to increase their tech quotient (TQ), which he defined as an “individual's ability to understand and explain technology”.¹²

While the body of literature on digital literacy at the board level continues to grow, what is clear and urgent is for board directors to increase their awareness of tech and digital, the risks and opportunities involved, as well as their ability to harness this knowledge to perform their role effectively.

Beyond being aware of the evolving digital landscape and knowing more about digital, board directors may need to think about additional roles to play. Joe Poon, who chairs the professional development committee at SID, suggests that companies would do well to have board directors who can be mentors (to guide the management), community leaders (to connect the business to government and society), and agile players (to guide companies to adapt to the evolving environment and seek opportunities through balanced risks).

As companies transform to leverage digital and tech to solve business challenges and progress into the future, board directors, too, must keep up and transform themselves by gaining greater knowledge of digital and tech; increasing their own digital-savviness, quotient, and literacy; and considering the additional roles they may need to play, depending on how far their organisations have progressed on their digital journey.

DOING DIGITAL

As board directors up their own digital game, what more can a board, as a collective of directors, do to add value to its organisation when it comes to digitalisation?

First of all, it is important to recognise the role of the board vis-à-vis that of the management. According to SID, one of the chief roles of the board is to provide entrepreneurial leadership, and set strategic objectives, which should include an appropriate focus on value creation, innovation, and sustainability. It should also establish and maintain a sound risk management framework to effectively monitor and manage risks, and achieve an appropriate balance between risks and company performance.

Based on the above, in terms of digitalisation, the board should set the strategic direction and goals, and manage risks while pushing the envelope in terms of performance. This is different from the role of the management, which focuses on executing the digital transformation.

In setting out its strategic objectives and goals for digitalisation, the board can consider the five principles set out by the Global Network of Director Institutes (GNDI) and ask themselves the questions as listed in the box story (on the right).

GNDI PRINCIPLES ON GOVERNING DIGITAL TRANSFORMATION¹³

Principle 1: Approach emerging technology as a strategic imperative, not just an operational issue.

- Is our approach to digital transformation piecemeal and fragmented?
- Are we viewing technology through the lens of our customers?
- Are we working with a coherent vision?
- Are we discussing strategy enough? Have we (and our management team, together) defined what “going digital” means?
- Are we confusing digital governance with risk governance? Are we being too risk-averse, too defensive, or overly concerned about cyber threats to the point we are willing to forego business growth opportunities that rely on digital connectivity and accessibility?
- Did we make the mistake of thinking that digital transformation is just the adoption of technology?
- Did we reconcile innovation with the protection of current products and services, and customer retention?

Principle 2: Develop collective, continuous technology-specific learning and development goals

- How are we enhancing individual and collective learning to enhance board oversight capabilities?
- Do we know where the technology gaps lie so that we can frame learning objectives and meet recruitment needs?
- Are we learning, individually and collectively, and distributing the knowledge among the entire board? Do we have a learning plan as individuals and collectively as a board?
- Have we considered what might be the best ways for us to learn?

Principle 3: (Re-)align board structure and composition to reflect the growing significance of technology as a driver of both growth and risk

- Is our board composition and structure fit for purpose?
- Can we bring in directors with digital background and expertise?
- Are we making the mistake of limiting our recruitment of digital directors solely to technology experts?
- Are we tapping on external sources to recruit new directors for our board?
- Are we headed for the pitfall of fragmenting our board oversight of technology-related matters, such as having a dedicated committee to look into digital but not ultimately involving the board in decision-making?

Principle 4: Demand frequent and forward-looking reporting on technology-related initiatives

- Are we having frequent, focused board-management dialogue? Do we have enhanced reporting of emerging technologies and their impact on business?
- Are we improving forward-looking visibility while checking the rear-view mirror to garner insights?
- Are we having too much information, and too little insights?
- Are we too fixated on short-term return on investment (ROI) metrics?

Principle 5: Periodically assess the organisation's leadership, talent, and cultural readiness for technological change

- Are we assessing the type of workforce that will be needed to stay competitive? Do we have the right CEO and executive team in place?
- Are we falling into a pit because of not embedding digital fluency and track record into the recruitment, succession planning, and evaluation of the CEO and the executive team?
- Are we underestimating the importance of a change-ready culture that is open to innovation?
- Are we having forward-looking assessments of talent requirements, in line with the broader organisational strategy?

CONCLUSION

We return now to the two protagonists. When asked to reflect on the role of the board, Neo, having experienced early success with SABECO 4.0, shared that boards should be strategic: “Let management handle day-to-day matters but work with them by being their sounding board and help clear obstacles in areas such as resourcing and government relations.”

As for Tan, whose board members focused mainly on strategy, he felt they could be more familiar with digital transformation implementation and be more understanding towards the team executing the strategy. He also thought it was important for the management to be on board with the strategy charted out by the board. He said, “Co-creation is key between board and management. It's not just about challenging the fundamentals of the business. It is about challenging themselves (the board) too. Ultimately, transformation is not about outcomes only, but also how many heads and hearts are turned towards the direction we want to go.”¹¹

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Endnotes

- ¹ *Feng shui* or Chinese geomancy is an ancient Chinese belief that emphasises the harmonious relationship between humans and nature. For example, the way a house is built and how the objects are arranged within that space influence a person's success, health, and happiness.
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ROBOWEALTH

BOOSTING FINANCIAL INCLUSION IN THAILAND

Advanced fintech lowers barriers to investing.

by Chiraphol New Chiyachantana,
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Prasarnphanich, and Chan Chi Wei

In 2017, Chonladet Khemarattana saw the potential to disrupt the investment advisory industry in Thailand and promote greater financial inclusion. Thailand's robust economic growth over the past three decades had reduced its poverty rate dramatically. Its standard of living and life expectancy had also improved. However, most residents did not have strong social safety nets to rely on. Thailand's population was also gradually ageing, and many citizens lacked sufficient emergency savings. Lower-income workers found it difficult to save for retirement due to the lack of time, money, and expertise.

Chonladet was a dreamer who wanted to use his interests in finance and programming to help change society for the better. He was aware that the government was trying to revamp its pension programme to support a growing number of retirees in Thailand. However, he felt the problem had to be resolved first by changing the local savings culture. Education was the key to providing the basic financial literacy required for people to manage their retirement budgets. There was also an urgent need to create better social safety nets and improve access to education for children, especially those from lower-income families.

Chonladet believed there was an opportunity for people to manage their retirement planning by investing in a broad portfolio of financial securities for diversification. He decided to capitalise on innovations in financial technology (fintech) that enabled wealth management firms to lower their operating costs. With this vision, he founded Robowealth in 2017 to provide investment opportunities for every Thai citizen, including the low-income ones. Robowealth was developed by employing technology to build user-friendly digital platforms that applied algorithms to drive investment decisions. It sought to capitalise on the digitisation trend to reach consumers through an easy-to-use app, enabling even low-income

workers to make small investments and benefit from diversification. Robowealth also developed a business-to-business (B2B) channel that allowed collaborations with other industry players in order to build a more efficient financial ecosystem for locals. In due time, the start-up was hopeful that it could partner with the government to build a Thai provident fund.

THAILAND'S ECONOMY AND SOCIETY: GROWING CONCERNS

Thailand's export-led economic model achieved an average of 7.5 percent in economic growth annually from 1960 till the onset of the 1997 Asian Financial Crisis, allowing the country to attain upper middle-income status. Its large agriculture sector counted rubber and rice among its key exports while its manufacturing sector focused on steel, electronics, and automobiles. The services sector, especially tourism, also contributed significantly to the national GDP.

In recent years though, the country's economic progress had slowed. The rate of workers moving from agriculture to industry dropped and the manufacturing sector has had to deal with heightened regional competition.¹ The tourism sector was another sector of concern. Given that it contributed as much as 11 percent to Thai GDP during pre-COVID times,² it required close attention and management, particularly when it tended to crowd out investments in education and bring about environmental issues, just as other tourism-dependent developing countries like Vietnam had similarly experienced.³

In 2016, Thailand's population was about 69 million people, with a labour force of about 39 million people.⁴ From that same year, incomes for the bottom 40 percent of the population started to fall.⁵ The government responded by approving social welfare programmes worth 13 billion baht (US\$438 million) to assist the low-income sector. It also launched a long-term plan to develop a digital-based 4.0 economy.⁶

There were also a few societal developments that Chonladet had been watching closely. With an Internet penetration rate of 75 percent, the Thais spent the second-highest amount of time globally on their mobile phones.⁷ Demographically, the life expectancy in the country was rising but the population was ageing; in 2006, eight percent of people were over 65 years of age and this rose to 11 percent in 2016.⁸ It had been forecast in 2020 that this segment could make up more than 20 percent of the total population by as early as 2035.⁹

With an Internet penetration rate of 75 percent, the Thais spent the second-highest amount of time globally on their mobile phones.

Hence Chonladet believed there was scope and opportunity for the Thais to manage their retirement planning. He explained, "Saving and investing are necessities for all of us, especially those who aim to grow their wealth for retirement. With medical advancement, people live longer and have more needs to spend their money on post-retirement. Financial planning needs to start early. A good start would be to divide our income into three parts. The first portion is for use in our daily lives. The second portion is for use in case of emergencies. And the rest should be used to invest in any asset that generates a return that is at least higher than the inflation rate. By doing all these, people will eventually achieve financial freedom."

FINANCIAL INVESTING

Playground of the rich

In 2016, the stock exchange of Thailand had a market capitalisation of US\$437 billion¹⁰ while the bond market was worth US\$366 billion¹¹. Investors would often purchase a combination of stocks, bonds, and other assets through mutual funds. The Thai mutual fund market comprised around 20 Asset Management Companies or AMCs that would issue and market mutual funds.

However, it was difficult for most people to participate in the capital markets. Traditionally, the investment advisory industry advised individuals on constructing portfolios that include a combination of stocks, bonds, currencies, commodities, cash, and real estate. Relationship managers worked with clients to assess their investment goals, risk tolerance, and time horizon before implementing an investment strategy. Based on the resulting investment policy statement, the portfolio manager would embark on the asset allocation process. In order to optimise performance, portfolio managers would use a portfolio optimisation model such as modern portfolio theory.

Investors could invest a lump sum from the start or embark on a dollar cost averaging (DCA) strategy. Utilising a DCA strategy allowed investors to split the total investment across periodic purchases of target assets to reduce the volatility of returns. To maintain the target allocation, portfolio managers would usually readjust the portfolio at monthly intervals to restore the selected asset allocation. However, as could be expected, providing this level of service was only viable when serving high-net-worth individuals (HNWIs).

Chonladet felt that a lack of access to investment advisory services was a key reason for the small investor base. He elaborated, "The investor base in Thailand is very low compared to our population. Three million investors out of 70 million people are less than five percent. I think in developed countries, the ratio of investors to population should be approaching 50 percent. And in typical emerging markets, it should be about roughly 10 percent."

Robo-advisors level the ground

Over time, the wealth management industry became more automated. The progress of Artificial Intelligence meant that machines could process massive amounts of data in order to make recommendations based on programmed investment models. Robo-advisory was a fast-growing area of fintech solutions in wealth management, driven by advanced technology that allowed firms to develop user-friendly digital platforms that applied algorithms to drive investment decisions.

Robo-advisors were robots on digital platforms that provided investment advice based on pre-programmed instructions. They would collect relevant information from consumers via online surveys to determine their return goals, risk tolerance levels, and investment horizons, and then allocate funds to suitable asset classes. The use of robo-advisors widened the consumer base, as wealth management firms could charge lower fees commensurate with their lower costs.¹²



FOUNDING ROBOWEALTH

Chonladet had begun talks with the Thai Security Exchange Commission in 2016 to get their opinion on the viability of the business and advice on the necessary licences to operate Robowealth. After getting regulatory clearance, he hired a team of developers to build the digital platform. In 2017, Chonladet founded Robowealth with an experienced group of financial professionals, turning it into the first Thai company to provide robo-advisory and mutual fund investment services.

Chonladet explained how he first tried to understand the challenges his potential consumers faced, “We figured out the pain points that prevented people from investing. Firstly, Thais perceive investing to be risky. Secondly, they think it is too difficult to start gaining knowledge on this topic. Thirdly, they think that it is time-consuming; in order to invest profitably, they will need to devote time to sitting in front of the computer and looking at the stock charts. Lastly, they think they need to have a lot of money, as investing is only for rich people. Portfolio managers would pay no attention to them because they have too little money to start with.”

His team started to work on providing solutions to address those pain points. Robowealth would democratise the investing process by requiring a low minimum investment amount and reduce risk through diversification. Its automated services would also crunch the numbers to provide quick and easy options for investors.

The plan was for Robowealth to build a stable and inclusive financial ecosystem to suit the needs of different consumer segments by offering tailored digital solutions to consumers.

The Robowealth ecosystem

Chonladet hoped to provide universal coverage to every individual in Thailand. Consumers only had to download the Robowealth app on their smartphones to gain access to its services. While Robowealth served HNWI through its Indego brand, which functioned like a traditional investment advisory firm, it also partnered with Thai conglomerates to provide curated funds through its FinVest brand. Its Codefin software house developed and sold wealth tech software to other financial institutions. It was the odini brand though that served the low-income segment (see box story for elaboration on some of Robowealth’s services).

A robo-advisor called odini was offered by the Robowealth app. Chonladet elaborated on the role of the robo-advisor, “We use robo-advisors to do the quantitative modelling,

using mean-variance optimisation and the Black-Litterman model. It calculates the return expectation of each asset class and minimises volatility based on a given target return before computing the weight of each asset class. Once we approve the weight and fund selection, we will let the robo-advisor rebalance, as well as manage deposits and withdrawals. With odini’s purely automated asset allocation, fund selection, and rebalancing, users would not have to do anything. We also offer the lowest minimum starting amount in the industry. And the good thing is that

our users can start carrying out DCA right away. And from the very first time that you make a deposit of at least 1,000 baht (US\$34), you can choose from five portfolios, ranging from the most conservative one to the most aggressive one. After that, you make a choice. Let’s say you picked the module targeting about eight percent return per year. That would be the asset allocation giving weight to each asset class, which are Thai equities, US equities, Euro equities, Japan equities, China equities, emerging market equities, Thai Fixed Income and REIT and gold.”

odini also helped to educate investors through a talk show featuring local celebrities and social media influencers. The interviewees discussed their own financial planning tips while emphasising the need to start investing early.

It was important for Robowealth to maintain strong customer relationships to increase the network value of its platform. While the company did not provide the personal assistance offered by traditional investment advisory firms, its automated services were convenient to access and user-friendly.



SELECTED ROBOWEALTH SERVICES

odini

odini was a robo-advisor offered by Robowealth to serve the low-income segment. Customers could open an account with a minimum sum of 1,000 baht (US\$34). They could choose a suitable risk profile, ranging from 1 (safest) to 5 (riskiest), and allow odini to select asset allocation targets and rebalance their portfolio automatically. The robo-advisor would automatically modify the portfolio according to market conditions and the risk appetite of the customers. odini black was a premium offering for mass affluent clients with at least 500,000 baht (US\$16,800).

FinVest

FinVest was Thailand’s first curated investment app that searched for suitable funds that met the needs of investors. Robowealth developed the app in partnership with Kasikorn Bank (Kbank) and Lu International, the overseas fintech arm of China’s Ping An Insurance Group. The product screening committee

met twice a month to update the list of available mutual funds. Users could invest directly through the Advance Magic Card e-wallet system or the Ascend Wealth app in True Money Wallet, a third-party e-wallet under the Charoen Pokphand (CP) Group.

Robowealth’s share of management fees vary according to the size of the investor’s Assets under Management (AUM), as shown below:

FinVest Monthly AUM (in baht)	Robowealth Share
Below 50 billion	20 percent
Between 50 & 100 million	25 percent
Above 100 billion	30 percent

Ascend Wealth Revenue (in baht)	Robowealth Share
Less than 5 million	25 percent
Between 5 & 10 million	20 percent
Between 10 & 50 million	15 percent
Between 50 & 100 million	10 percent
More than 100 million	5 percent

Indego

Indego aimed to be the leader in providing quality and impartial investment advice to high-net-worth clients. It provided accredited investors who started with 10 million baht (US\$336,000) with a wide range of global investment opportunities. Having the Indego brand on board helped Robowealth cover the wealth spectrum of local investors. Consumers in this segment would be able to consult experienced fund managers and analysts for their expert views.

Codefin

Codefin was the software house used to facilitate product development activities for Robowealth’s partners such as Stock Exchange of Thailand, Kasikorn Asset Management, Krungsri Asset Management, SCB Securities, and LH Bank. It assembled a dedicated full-stack software development team to work on process design, developed wealth tech software, and improved third-party collaboration.

GROWTH PLANS

Robowealth had grown steadily after its inception, with regulators and other industry participants recognising it as a leader in the robo-advisory and mutual fund investment fields. The industry was growing, and AUM for the Thai robo-advisory industry were projected to grow from US\$5.4 billion in 2021 to US\$13.4 billion by 2025 at a compound average growth rate of 25.6 percent.¹³

Elaborating on Robowealth's development of multiple revenue streams, Chondalet said, "We are going down both the business-to-consumers (B2C) and B2B routes, as we know that both avenues are important to our success. The B2B offering provides our technology to other financial institutions, and we have already secured many deals with other banks, securities firms, asset management companies, and fintech start-ups."

Chondalet felt that collaboration was important to Robowealth's continuing growth. Traditional banks and asset management companies that were larger and better capitalised could respond to the competition by launching their own robo-products after conducting their internal research and development. For instance, the strong relationship Robowealth had built with Kbank, which was responsible for acquiring 70 percent of clients for Robowealth's FinVest joint venture, helped them reduce customer acquisition costs. Chonladet added, "It is easier to cooperate than compete with the big banks. Kbank is quite innovative and open to new technologies."

Chonladet also saw the benefits of collaborating to provide widespread coverage. He remained committed to building a financial ecosystem that would help Thais from all walks of life achieve their retirement goals, and added that profits were not its only consideration, "Together, we need to provide every Thai with convenient, user-friendly, and reliable investment channels. The service provider could be my company, my partner, or even any other company. We do not want to compete just for market share. We want to increase the size of the pie so that Thai people can access efficient investment channels."

Chonladet felt he could develop similar partnerships with regulators and government planners to create a Thai provident fund using Robowealth's services. If Thai employees were automatically enrolled in the scheme, they could take advantage of the convenient financial planning tools to start saving for retirement. In time, he hoped that all Thais would be able to modify their investment portfolios anytime, anywhere. 

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How digital transformation can be made good for all.

by Mark Findlay and Sharanya Shanmugam

Digital transformation through the widespread use of Artificial Intelligence (AI)-assisted technology and big data usage is assumed to usher in socio-economic benefits.¹ Notions of ‘digital readiness’ speak to the inevitability of a universalised digital transformation. But the common approach of exporting digital capacities across societies and markets—*digital transformation is good for you all*—is top-down and paternalist. It also conjures the image of some common/average citizen or worker being able and willing to transform into a digitally competent economic unit. Moreover, such a top-down approach to digital transformation can ignore, and even underplay, important demographic differences across communities when it comes to related issues such as digital literacy, digital familiarity, digital readiness, access to technology, and consent for creating digital dependencies. These differences sometimes grow from structural vulnerabilities such as advanced age, subservient positions in organisations/markets, low levels of education, and socio-economic vulnerabilities like poverty, restricted access to technical opportunities, and the inability to access knowledge. Above all, certain segments of a community, already disadvantaged or less able to manage change, could be further measurably disadvantaged by a universal digital push.

In this article, through vignettes from the UK and Singapore’s experience, we highlight how digital transformation can be made more participatory for users affected by digital initiatives. In the process, we introduce the idea of Living Digital Transformation (LDT) and how a more bottom-up and user-centric alternative, including those from vulnerable communities, could improve the benefits from digital transformation, as well as the design and implementation process.

TOP-DOWN RISKS AND VULNERABLE COMMUNITIES: THE UK EXPERIENCE

The implementation of the Universal Credit Scheme, a digital welfare service in the UK, illustrates the problems with a universalist top-down approach to transformation.² The welfare scheme was created to address the larger problem of a perceived lack of incentive among welfare claimants to find work and improve their financial well-being.

Although there was a digital portal for claimants to report their employment status to receive payments, and relieve job-centre advisors from these administrative regulatory tasks, the individual situation of claimants other than their earnings was not taken into consideration. It adopted a gender- and class-neutral perspective that purportedly neutralises, rather than identifies and compensates for differences between users and their vulnerabilities.

The consequences are anything but anti-discriminatory. Because the portal assessed claimants based on a monthly pay requirement, those who were paid weekly or experienced inconsistent pay periods had difficulties matching their meagre earnings with the availability of benefits to meet their pressing daily financial needs. As a case in point, women are more likely to engage in part-time work and thus inadvertently suffer a disadvantage under this scheme. The scheme's single payment model that consolidated six benefits into one for convenience also received backlash for devastating female claimants' financial autonomy, as it combines payments (such as for housing and childcare) that used to be separated, thereby giving authority to the primary account holder who often tends to be the male in the household. This grants power to the man in abusive domestic relationships to determine how welfare funds are spent.

The scheme also unwittingly established a general male-dominated understanding of labour, not recognising unpaid domestic work and care duties that society benefits from, which are mainly carried out by women. The failure to locate structural vulnerabilities within the design and implementation of the automated welfare scheme exacerbates the social costs of patriarchy and female dependency, and diminishes the potential of women contributing to the workforce and eventually getting out of the welfare trap.

Co-designing approaches that include civil society members can provide the perspectives, values, and situated knowledge of the most vulnerable communities, challenging existing social hierarchies and avoiding exploitative practices against them.

A lesson from the above example shows that public sector definitions of user-centred design draw inspiration from the private sector with its original usage for commercial products, which does not have to consider the human factor beyond the desires of a consumer market.³ In customer consciousness (where customers are assumed to be willing participants in a uniform market trade), the private sector does not have to deal with a diversity of perspectives, whereas in the public sector, policymakers should consider if they want digital transformation to take root in sustainable community experiences. In this example of digital welfare services attempting to provide a universal design and common implementation platform, decision-makers tend to visualise the 'user' in neutral terms to allow for inclusivity, and do not sufficiently consider the diversity of welfare recipients or the vulnerabilities of lower-class and female beneficiaries, who are often more financially disadvantaged than their male counterparts in commercial arrangements.⁴

WELFARE BONUS DIGITAL DISTRIBUTION AND INCLUSION OF LESS DIGITALLY-SAVVY: THE SINGAPORE EXAMPLE

Whereas the UK's Universal Credit Scheme example failed to recognise the impact of digital transformation on pre-existing vulnerable populations and thereby further discriminated against these groups, the Singapore government adopted a more considerate approach by identifying structural vulnerabilities and engaging vulnerable recipients, in this case the elderly, as active agents in the design and implementation of its digital welfare schemes.



The Community Development Council (CDC) vouchers scheme, first launched in June 2020, was intended to help 400,000 lower-income Singaporean households with their daily expenses.⁵ Beneficiaries had to collect physical vouchers from designated community centres (CCs). The scheme had the dual goals of helping households cope with the rising cost of living as a result of inflation, while boosting the earnings of heartland merchants. However, the subsequent decision to shift to digital vouchers to increase user convenience and relieve merchants of the hassle of collating and tracking paper vouchers generated concerns that the elderly and other less digitally literate groups would be excluded from the welfare scheme.

Senior citizens have expressed their unpreparedness for the rapid shift towards the mass adoption of digital technologies, predominantly due to their lack of skills to effectively make use of technology.⁶ Having to solely rely on others, be it family members or more tech-savvy peers, to navigate this unfamiliar environment driven by the proliferation of smart devices can also be disempowering for them. Some elderly have indicated they would rather spend time queueing at banks to conduct simple transactions than learn to use Internet banking, often due to a fear of getting scammed or making accidental purchases as a result of being unfamiliar with these apps.⁷

Before the switch to digital vouchers, the government engaged Government Technology Agency (GovTech)⁸ to understand how it could build a system that both heartland merchants and the digitally less-ready could use confidently. GovTech studied previous government voucher campaigns, such as RedeemSG which is used to redeem National Day Parade tickets every year, to uncover problems cited by previous users.⁹ It then prototyped different options for an inclusive voucher system, carried out multiple trials with merchants and residents across age groups and levels of digital savviness,¹⁰ and spoke with grassroots advisors to seek their views on the final prototype. Only then did it decide to use the RedeemSG app for distributing the CDC digital vouchers, thereby demonstrating its efforts to take into account citizens, particularly the most vulnerable, in the design of government digital products.

Furthermore, to ensure that seniors without smartphones or family members to help them claim the vouchers could also benefit from the welfare scheme, the government offered them the option to request for CDC vouchers to be printed at their nearest CC, accommodating seniors' wishes for a non-technical alternative.¹¹ For seniors

keen to adopt the digital option, Silver Generation Ambassadors were situated at the CCs, as well as in selected Residents' Committee centres in areas with a higher concentration of elderly citizens, to help seniors redeem their vouchers. These initiatives were publicised not only on social media, but also via newspaper print ads and digital display panels at lift landings of Housing and Development Board flats, which make up Singapore's public housing, to raise awareness of such support.

PROGRESSING FROM CO-DESIGN TO CO-CREATION

What the Singapore government did is an example of co-design, which involves some extent of collaboration between those who develop a product or process, and those who use or experience it. Simply incorporating morals or principles, such as 'fairness' or 'explainability', top-down into the design process from the outset does not guarantee that the values and perspectives of citizens will be incorporated into the system.¹² Co-designing approaches that include civil society members can provide the perspectives, values, and situated knowledge of the most vulnerable communities, challenging existing social hierarchies and avoiding exploitative practices against them.

Co-creation is the next stage of the participation process. This is where recipient communities have some say about the purpose of technology and data use, thus prioritising different purposes and monitoring the outcomes. It differs from co-design in two specific ways. Firstly, more than collaboration, co-creation starts at the earliest stage of the project's conceptualisation. For AI-assisted technologies, this is when someone posits that digital transformation from pre-existing technologies and processes is beneficial for stakeholders. Secondly, admirable as the integrative intentions of co-design are, it may not build in the requirement that the perspectives from the vulnerable are actioned and accounted for. Co-creation means that the initiation of an AI-assisted technology will not proceed without the validation of vulnerable stakeholders.

Co-creation initiatives are likely to thrive only when there is *citizen trust* in public governance, as trust is the foundation upon which legitimacy rests. Trust in public institutions has plunged to its lowest levels worldwide due to the pandemic and the poor, oftentimes discriminatory, management of the COVID-19 pandemic by various governments. The crisis of citizen trust affects the efficacy of pandemic control measures, and in the long term can diminish citizen participation, compliance with regulations, and support for public policies. Distrust in authorities is likely to be higher in disenfranchised communities, making it especially crucial to engage these groups in co-creation initiatives.

The final important dimension of successful co-creation is the impact of citizen participation. How can citizens be involved in such a way that deliberations among stakeholders actually influence decision-making? Civilian leadership in co-creation initiatives can empower vulnerable communities to exercise authority over public decisions and keep authorities accountable to the partnership's goals. The Chicago Community Policing Program is an example of a successful co-creation initiative that prioritised the active involvement of disadvantaged communities in high-crime neighbourhoods, and promoted a shared responsibility between residents and local police officers for determining local policing priorities and being accountable to them.¹³ It was found that deliberative meetings co-facilitated by both the officers and residents led to more innovative and effective problem-solving strategies that built upon the knowledge and experience of these groups, as compared to when residents only attended these meetings as participants. Co-creation initiatives seek to equilibrate the power imbalance between decision-makers and citizens by increasing citizen participation, but the dispersal of power can only be productive if the more powerful stakeholders at the 'centre' remain committed to reducing power asymmetries and being accountable to the less powerful, coordinating and supervising such participatory programmes, and taking responsibility for how these programmes are run.¹⁴ The notion of power dispersal down organisational hierarchies is also crucial when embracing a more inclusive, bottom-up approach to digital transformation. It is with this recognition in mind that we move to explore LDT as a disruptive alternative to more paternalist transformation exercises.

LIVING DIGITAL TRANSFORMATION AS CO-CREATION

LDT emphasises that digital transformation must be human-centric to ensure its sustainability and progressive impact. As data increases exponentially in a digital world, more individuals will demand digital self-determination.¹⁵ Citizen inclusion is imperative if citizens are to trust in the transition to a more digitised life experience. Therefore, when carrying out any digital transformation initiative, there should not be a fixation on digital technology, but rather a focus on the transformation that supports human well-being from the recipient's perspective. *Living* underscores that digital transformation must improve life experience, raise the quality and comfort of work-life, and ensure safe digital life-spaces. In this light, humans lead the transformation, and this transformation is strongly local and grounded in the community.¹⁶

Citizen inclusion is imperative if citizens are to trust in the transition to a more digitised life experience.



As for its downside, digital transformation has consequent ethical implications arising out of depersonalisation, distrust, and disenfranchisement. Where transformation is imposed on recipient communities that feel socially excluded from policy formulation and implementation, distrust accompanies a dissatisfaction with the absence of accountability and transparency.

LDT implementation in a university setting

In the context of a university community, LDT goes beyond mass technological substitution, and instead focuses on the following actions:¹⁷

- Extension where existing university community practice is enriched with new modes of digital learning, such that the learning experience can be enhanced through more flexible digital tooling driven by student preference, and/or
- Breakthrough, where such practices undergo a radical change.

Distinguishing styles of transformation in this way helps to clarify that such digital tools are not used to create (and completely replace) a physical community or all the organic interactions that arise from lived community spaces (digital or otherwise). Rather, digital spaces offer new terrain that is complementary to human interaction, as well as the space for the development of digital culture. Hence, when we discuss the need for 'digital culture' in higher education, we are not referring to shiny new toys, proctored exams, or a life lived on Zoom. Instead, it is about embedding a culture of collaboration, inclusivity, agility, and openness both in and among educational institutions, so that innovation can flourish in all its forms.¹⁸



In the university context, co-creation under LDT should include the following considerations:

- LDT should be driven by its digital natives. In other words, it should be driven from the ground up by the entire university ecosystem, fostering a culture and community of responsible innovators.
- LDT is the technological component for creating safe digital spaces to learn and grow. It provides room for learning and knowledge maturity, as well as engagement and openness, thus ensuring no one is excluded.
- LDT is about taming technology within the community. It puts humans at the forefront and in control, implementing responsible AI ethical norms and remedies.
- LDT enhances responsible data access through digital self-determination. It prioritises the protection of data subjects thereby ensuring their agency and autonomy.
- LDT can complement the university mission to prepare students for transiting work futures. It equips learners with digital know-how and skillsets, providing sensitive and suitable pathways for change.
- LDT promotes technology uptake and digitising for aligning university service provision and the communities served. It facilitates ethical digital transformation.

For any transformation process to be meaningful and sustainable, it must receive widespread endorsement from the community that is undertaking, and impacted by, such changes. There is great potential for the executive leadership to align the *living* digital transformation process with the aspirations of the wider university community.

CONCLUDING REFLECTIONS

Whether it is through the onslaught of digitised finance, the automation of customer service using chatbots, or the codification of knowledge through keyword search engines, daily life is increasingly moving to the digital realm, and residents in these digital communities require the skills and predispositions to survive, let alone flourish, in an online world. In this article, we have put forth a few vignettes which demonstrate that the risks posed by ignoring the uniqueness of vulnerable communities in digital transformation have produced discriminatory outcomes, rather than universal benefits.



In turn, we suggest that an emphasis on co-creation and attentiveness to opportunities for extension and breakthrough measures could provide viable alternatives that enliven LDT. We also highlight how such a more bottom-up approach can achieve the inclusive and all-encompassing benefits of digital transformation in diverse recipient communities.¹⁹

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Harnessing the Power of Video Ads

In digital advertising, video ads as a top-of-funnel function have a longer-lasting effect than display and search ads on a consumer's consciousness.

by Linyi Li

According to consumer data firm Statista, digital advertising in Asia, valued at US\$207 billion, will account for nearly 68 percent of total advertising, which is estimated to be worth US\$305 billion, in 2022.¹ Of this, 30.6 percent (US\$63 billion) will be spent on video ads, while search ads worth US\$74 billion will account for the highest proportion of digital advertising spending (35.9 percent). However, video ad spend is predicted to grow at a rate of 16.4 percent in 2022, compared to 12.5 percent for digital advertising as a whole.²

The numbers are consistent with those in the US, the world's largest advertising market, where online advertising accounts for over 50 percent of total ad spend. While video advertising represents just 18.7 percent of total online ad spend, its 20.6 percent annual growth rate in 2021 exceeds the 12.2 percent expansion posted by digital advertising as a whole.³

Despite the clear trend towards online video advertising, marketing executives are sometimes ambivalent about allocating funds for it. Search advertising has been shown to harvest the demand that drives consumers to search for a specific product or service, such as noise-cancelling headphones or ski vacations. Even the much-maligned display ads have been shown to positively affect purchases, both online⁴ and offline.⁵ However, unlike search or display ads, video ad spend has a longer link to sales, which results in clicks leading customers to (most probably) the official website right away. Managers often use cost per click versus revenue/profit per click as justification for which ad format option to choose. For video ads, more often than not, no clicks will be produced, thus managers are hard put when they seek justification for them.

In this article, I highlight the merits and promise of online video advertising based on a study that I conducted with two other researchers, which compared the cost effectiveness of online video, search, and display ads. By looking at the complete advertising and sales dataset from an American personal care brand spread over three years, our research examines the accumulation and decay of advertising AdStock, which is the cumulative value of a brand's advertising at a given point in time. Additionally, our study also examines the resulting impact of AdStock on sales through the brand's website, as well as the e-commerce platform Amazon.

STUDY ON VIDEO AD EFFECTIVENESS

Our study tracked the metrics of video ads delivered in the YouTube/Google TrueView skippable ad format, which can be skipped after a minimum of five seconds. Advertisers pay for an 'interaction' when the viewer either clicks on the ad, or the ad reaches a 'view' at 30 seconds or its entirety if the video ad is shorter than 30 seconds. The skippable video ad is the most common online video ad format. It is the default and most popular option for YouTube and Facebook (including Instagram) ads, with the two Silicon Valley giants accounting for more than half of the online video ads market.

The personal care brand we studied provided us with weekly data for all its advertising activity covering 180 weeks—a three-and-a-half-year period. On top of sales data from both the brand's website and its Amazon channel, we also have data on the number of impressions delivered through each advertising channel, which allows a fine-grained understanding of the impact of impressions, views, and clicks.

Video ads are cost-effective and stay in the mind longer

Our modelling examined the decay of video AdStock as compared to search and display AdStock. More advertising exposure adds more AdStock, but it also decays over time due to consumer forgetting. Our modelling shows that video AdStock decayed at a much slower rate than both search and display AdStock. This suggests that video ads stay in the minds of consumers longer, helping brand recall that would contribute to sales over a much longer period of time.

But is video advertising worth it? The answer to this literally billion-dollar question is 'yes'. Our model shows video ads do have a positive return on investment (ROI). Video ad clicks and video ad views, the two actions by consumers that platforms charge for, generate more AdStock than video impressions. Managers can rest assured that they are not wasting their money on video views, even though these are not taking consumers to their websites. Additionally, it must be noted that video impressions under 30 seconds add to AdStock *for free*. Given the vast number of people who choose to skip a video ad after five seconds, advertisers should bear in mind how much exposure they might be getting at no charge, instead of fretting about the lack of a direct link between video ads and the bottom line.

Perhaps more importantly, skippable ads can help 'capture' the right profile for further action. For instance, from the skippable format, you can now tell who are more likely your 'true' fans who sat through more than 30 seconds of your ad. While some may have let these videos run without paying any attention to the ad, marketers can still trace and attribute future searches or visits to their product sites via digital 'crumbs' such as cookies.

TAKEAWAYS FOR MARKETING EXECUTIVES

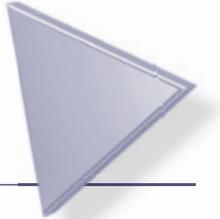
Our study provides several insights into the performance of paid video ads using the TrueView format. We note that such ads drive AdStock at a higher level than the standard display ad despite being skippable after five seconds. They are also much more impactful when viewed for up to 30 seconds or more, and have an effect that lasts longer than search or display ads. Additionally, these video ads improve the performance of search advertising by increasing the number of search impressions generated. They also have strong cross-sales-channels effects.

Marketing executives should thus bear in mind the video ads' ability to generate extended exposure in the form of views and the slow rate of decay in video advertising effects despite the short duration of most video impressions. The TrueView format also generates a large number of free impressions for each paid view or click, and these free impressions that accompany each paid view contribute more to AdStock than the view itself. Executives should therefore evaluate the performance of video advertising as a brand-building tool, and it appears that its performance has not been correctly gauged when click-conversion data is used as the measuring yardstick. The power of video advertising is clearly aided by video views, which produce much stronger effects than video impressions, and comes close to search impressions as a contributor to AdStock.

Unlike search queries and clicks, video views are passive, especially if a customer does not perform an action, i.e., click on 'skip'. This lack of involvement makes it hard for executives to anticipate the effect of a view, even though typically only those people who are interested in the ad or product would spend 30 seconds or more on the video, instead of skipping it after five seconds. However, it is impossible to ascertain whether the viewer is paying any attention or just



Executives should evaluate the performance of video advertising as a brand-building tool, and it appears that its performance has not been correctly gauged when click-conversion data is used as the measuring yardstick.



letting the video run for more than 30 seconds. If this occurs, the effect of a view might be even worse than a (non-view) impression since the customer must pay at least some level of attention in order to decide to skip it. This study provides evidence to show that the ROI on a TrueView view can be positive and substantial.

Sophisticated video advertisers could take advantage of the TrueView model, providing a 'hook' to keep viewers from skipping an ad immediately after five seconds and then 'qualifying' viewers at the 25-to-30-second mark to encourage them to opt out prior to recording a paid view at 30 seconds. Returns on video advertising are maximised if impressions last as long as possible, but only prospects who are likely to make immediate or long-term purchases would view the video past 30 seconds. Of course, viewers may click through at any point of the ad, which is also desirable.

Video advertising can also be seen as a way to improve the performance of advertising as a whole. Our results suggest that as a brand-building tool, video advertising is superior to its display counterpart mainly due to room for creativity. Video ads have moving pictures and sounds, making them much more memorable than search or display ads. Video is also very effective at improving search ad performance by increasing brand-related search queries and search ad click-through rates.

Generally speaking, executives should also spend more money on video ads at the beginning of the product's life cycle, as its effect is long-lasting and will boost the performance of subsequent search ads. At a more general level, executives should also take note to appropriately model the effects of online advertising within frameworks that allow for the persistence of advertising effects.

On a related note, advertisers need to cast away their experience from traditional TV/programmatic advertising (e.g., 30-second spot advertising) and embrace online advertising, including skippable ad formats and other future innovations. The inability to see past previous paradigms restricts marketers' ability to harness the power of digital technology. Platform owners such as YouTube are all still learning the best way to exploit the technology, as should consumers and advertisers.

RUNNING VIDEO ADS IN ASIA

The company we studied also used video, search, and display advertising in a few international locations such as Japan, Hong Kong, Macau, the UK, Canada, and Australia. When we applied our model to its Asian data for the same 180 weeks, the results highly resemble the findings for the US market, except that the ROI for video ads is much higher in this region. We do not have enough data to draw conclusions but we suspect the ROI is higher, because first, the Asian market comes up earlier in the product life cycle for the company, and second, the average cost for video ads for the international market (US\$0.029 per transaction) is about half that for the US (US\$0.067 per interaction).

Another interesting aspect of Asia is the remarkable growth it has enjoyed in broadband coverage. For this region, mobile 4G and 5G broadband coverage is a hygiene factor—that is, people don't even think about it unless it breaks down. Almost everyone can watch videos seamlessly on their mobile devices, particularly in urban settings. According to the telecommunications industry organisation GSMA, 96 percent of the Asia Pacific population has mobile broadband coverage, with over 400 million 5G connections expected by 2025.⁶

While skippable ads offer companies multiple options to manage their advertising budget, many Asian websites, particularly those in China, do not have skippable ads. For example, except for isolated instances, Alibaba's Youku (优酷) does not offer them, and neither does Baidu's iQiyi (爱奇艺), nor Tencent's QQ Video (腾讯视频). While the three companies are often referred to as "The Big Three" video streaming providers by most Chinese Internet users, some might have a different opinion.

For those observing the Chinese market, it is video-sharing and video streaming website Bilibili (哔哩哔哩) that is catching their attention. The Shanghai-based company is a favourite amongst the ACG (Anime, Comics, Gaming) crowd. In Q3 2022, it boasted monthly active users (MAU) of 332 million, a 25-percent increase from the same period last year, with net revenue jumping 11 percent year-on-year to US\$814.5 million.⁷ How could a video website that is targeting



Is video advertising worth it?
The answer to this literally billion-dollar question is 'yes'.



only a segment of the market have an MAU of 332 million? The answer is simple: Bilibili does not have video ads at all. This superior experience makes it popular among all segments of the market, and it appears Bilibili could be taking over the market soon.

While it may not be possible for “The Big Three” to adopt a no-ad-at-all strategy, skippable ads might be an option. Media platforms can balance the conflicting demands of viewers who do not like to watch ads and advertisers who do not like to pay for skipped ads. One obstacle to this might be that advertisers are not sure about the effect of the skippable ad format. We hope our research can shed light on this and make advertisers more comfortable with using the skippable format, especially when paying for views.

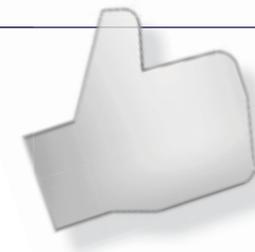
Finally, for online advertising, creativity is the name of the game. The advent of TikTok and its short-video format has changed the way video ads are made, making advertisers rethink the suitability of specific types of advertising for a certain point in the media/branding campaign, be it awareness-building, demand harvesting, etc. It is not feasible for advertisers or platforms to place traditional non-skippable 30-second or even 60-second video ads among a sea of 10-second to 15-second videos.

CONCLUSION

Our research shows that video ads stay in the consumers' minds longer than search ads and display ads, which can subsequently lead to sales. Skippable ads that are skipped before they reach 30 seconds are free of charge, yet they can contribute to sales. Viewed video ads indeed have a greater impression on consumers and make them more likely to purchase the product over a longer period of time. The same can be said for video clicks. With a comprehensive and lengthy data set, we find evidence that online skippable video ads have a positive ROI, and the ROI is higher in the international market outside the US, including Asia.

Executives should evaluate the performance of video advertising as a brand-building tool instead of gauging an ad campaign based on click-conversion data. As shown in the analysis, video ads have a positive ROI, and including them in the marketing campaign would improve the outcome. 

Viewed video ads indeed have a greater impression on consumers and make them more likely to purchase the product over a longer period of time. The same can be said for video clicks.



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SCAN ME





It's about when, not whether.

by Koh Chaik Ming

The COVID-19 pandemic and subsequent lockdowns imposed by nations sparked a surge in online shopping for fresh food items, which necessitated cold chain solutions that were then laden with vaccine storage requirements. This had a considerable impact on the Asia Pacific cold chain logistics and cold storage warehousing market, which was valued at US\$68.3 billion in 2019 and is expected to nearly double to US\$133.97 billion by 2027.¹ Perishable foods have limited shelf-life and their quality deteriorates steadily due to temperature, humidity, possible interactions with other foods, as well as shock during transportation.² In China, about 15 percent of all perishable products are transported in refrigerated vehicles, resulting in losses amounting to US\$8.9 billion annually for those involved in fruit and vegetable distribution.³ Cold storage warehousing is therefore a crucial element of cold chain solutions.

There are many similarities between the development of cold chain real estate in China and the country's ambient logistics (non-temperature control storage) real estate sector. In 2021, Asia's largest economy generated a record 108 billion parcels, accounting for two-thirds of the global parcel volume of 159 billion.⁴ China's e-commerce companies have invested heavily in their supply chain and last-mile delivery capabilities to meet this unrelenting demand. The two biggest Chinese players in the sector, Alibaba and JD.com, have taken different routes to that end: the former has taken stakes in four of the largest courier companies in China, while the latter set up JD Logistics, its own in-house logistics company. JD Property, the infrastructure arm of JD.com, has also been busy developing its own warehouses. While the two market leaders have adopted different approaches to address the logistics issue, on another more fundamental level, they are doing the same thing—strengthening ownership or control over logistics assets to create a strategic advantage from their supply chain and last-mile delivery capabilities.

The asset-heavy approach of building facilities facilitates superior control, but it can be inflexible and, perhaps more importantly, it ties up financial resources. Conversely, an asset-light approach involving more renting than ownership delivers greater flexibility and lower profit volatility, but operations could prove hard to manage. Is there a way to combine the best of both worlds? My study on China's cold chain logistics suggests a hybrid facility build and sale-and-leaseback approach might be the answer.

The general optimisation strategy is to store products that will be in the warehouse for longer durations in warehouses charging lower rents, even if it is further away from the port.

THE COLD (CHAIN) HARD TRUTH

The debate about whether a company should employ an asset-heavy or asset-light strategy has been a persistent one. While companies would prefer to pursue their strategies with the lowest possible level of asset ownership, determining the optimal asset level is often challenging due to the trade-offs.

The cold chain logistics sector in China (refer to box story) provides an excellent example to illustrate choices around asset-heavy and asset-light strategies, specifically the pivot from the former to the latter. The insights are drawn from my doctoral dissertation, for which I built an optimisation simulation model to assess the results of a large Chinese cold chain operator that had leased and used multiple cold chain warehouses to store its imported frozen products.

Constructing optimisation model for hybrid asset strategy

The optimisation model for a hybrid strategy basically combines two models—a real estate model and an operations research model. The real estate (asset-heavy) model accounts for the investment and returns, while the operations research (asset-light) model represents the transportation and storage costs. The two models are integrated using the asset capitalisation method, allowing for the establishment of asset value through the rental income received by the asset.

The operations research model addresses a classic facility location problem, where the economic benefit is maximised by seeking the lowest logistics cost. In the context of this study, the company imports hundreds of refrigerated containers into a key port in northern China, unloads these containers, and stores the products for a number of days in the cold chain warehouse of choice in the port city until the products are reloaded back into the container for delivery to the wholesale markets.

The logistics cost, therefore, is the sum of the total storage cost (the number of pallets stored multiplied by the number of days of storage and the daily storage cost per pallet) and the transportation cost (cost of transporting each container to the chosen warehouse in the port city). The daily rental rate for each warehouse is different (e.g., older warehouses charge cheaper rents) and the transportation cost to each warehouse also differs (e.g., the farther the facility is from the port, the higher the transportation cost). The general optimisation strategy is to store products that will be in the warehouse for longer durations in warehouses charging lower rents, even if it is further away from the port.

The real estate model determines the economic benefits of a new warehouse based on the size or capacity of the warehouse and its quality. In general, the larger the capacity, the higher the economic benefit derived from the development profit when the asset is sold to a financial partner due to the higher rental income that a bigger asset can command. However, the larger capacity warehouse comes with a larger leaseback commitment, which obliges the developer to factor in confidence to sufficiently utilise the warehouse over the committed period of the leaseback. In addition, the quality of the warehouse also affects the development profit since a higher quality warehouse generally commands a higher rent, which translates into a high sale price when sold to a financial partner. However, a higher quality warehouse also means higher construction costs that may reduce the development profit if the quality-cost ratio is not as efficient.

In my study, I built a composite model that combines the above two models to quantify the total economic benefits that can be optimised by simulating a multiple-period plant location problem.

FINDINGS FROM THE STUDY

The operator was considering developing and building its own cold chain warehouse at a size comparable to the combined use area of the facilities it currently rents. It is believed that once the asset is built and stabilised (i.e., the utilisation rate is high), it can be sold to a capital partner and leased back. In choosing between asset-heavy and asset-light strategies, the

company needs to be clear about whether the asset is strategic or scarce. If a particular asset is integral to the company's competitive position, as is the case of a cold chain warehouse, then ownership is usually a good option. It is also wise for companies to own assets that are in short supply so that they can act more decisively than their rivals.⁷

The study uncovered several findings about the impact of various parameters and its effect on the economic value of a build-and-lease-back strategy. For example, when the rent spread increase for a higher quality warehouse is larger than the unit construction cost increase, the optimal decision would be to build the warehouse to the highest quality. In my model, the industry rent spread quantum for a higher quality warehouse is 75 percent higher than that for an average quality warehouse even though the construction cost of a higher quality warehouse is 50 percent more than that of an average quality warehouse.

The research also found that the economic benefits of a build-and-lease-back arrangement decrease linearly as construction costs increase. When the construction cost becomes so high that it exceeds the asset sale value, my simulation model recommends not building the warehouse at all. Instead, it recommends the full use of third-party warehouses via rental because the real estate development will not yield a sufficiently high asset development profit. Additionally, different cities have varying degrees of attractiveness in real estate development (e.g., top-tier cities such as Beijing and Shanghai have extremely high development profit potential) despite slight construction cost differences across China.

COLD CHAIN LOGISTICS: FROZEN POTENTIAL? LET IT GROW

Over the last few years, more sophisticated and experienced cold chain logistics developers are designing an increasing number of generic cold chain logistics warehouses that can satisfy most temperature-controlled storage requirements for a broad range of users. According to global commercial real estate services company JLL, Chinese cold chain users can choose from built-to-suit (BTS) facilities or standardised cold storage facilities, which offer differing propositions for different users.⁵ BTS storage facilities are typically favoured by businesses that have unique supply chain functions, such as supermarket distribution centres and fresh produce e-commerce platform businesses, and are better designed for last-mile

distribution needs. Standardised cold chain facilities are generally favoured by traders or importers where the facility caters mainly to the storage of palletised products with containerised inbound and outbound shipments.

Cold chain warehouses are now moving to embrace standardisation, like what their ambient counterparts (which store goods at room temperature⁶) have experienced over the last two decades. This will substantially lower the risk of rent volatility of cold chain assets, driving future growth like what their ambient counterparts have experienced.

My research also found that for a given city, the location of the self-developed warehouse has only a marginal negative effect on the economic benefits. In fact, the optimal decision to achieve the optimal economic benefits is to ensure the self-developed warehouse is being used as much as possible, especially when it is coupled with a competitive transportation rate.

Last but not least, the asset capitalisation rate, defined as the ratio of the net operating income generated by the asset divided by its current market value, is the most sensitive parameter in economic benefits optimisation. A low capitalisation rate leads to a significant non-linear increase in economic benefits. Asset capitalisation rates differ across cities and low capitalisation rates are associated with cities where either the demand for these assets is high or the supply is limited.

The final transition to an asset-light strategy involves transferring capabilities to 'better owners of the assets' to enable companies to focus on their strengths and business models. Financial institutions or asset managers that are focused on managing completed assets and maximising yields are considered better owners of these completed assets after the assets are fully leased out. The users of these assets should eventually transition from a fixed-cost to a variable-cost structure. This enhances agility and facilitates a shift of resources to focus on core capabilities. Partnership models that can transition from an asset-heavy strategy to an asset-light model include joint ventures, spin-offs, partnerships, and sale-and-leaseback.⁸

HYBRID STRATEGY VALUE GOES BEYOND THE LOGISTICS SECTOR

Although this study was conducted in the cold chain logistics sector in China, and was inspired by the experience of Chinese e-commerce players with ambient logistics assets, this hybrid strategy can be applied to other asset classes, including commercial properties used for retail or food and beverage (F&B), and industrial properties such as factories and assembly plants.

However, the utility of this strategy comes with a critical requirement: the existence of a well-developed capital market, such as China, Hong Kong, and Singapore, where asset capital recycling can be done. Asset capital recycling refers to the practice of using the revenue gained from selling or leasing current assets like existing warehouses to finance the purchase or building of new assets, such as another storage facility. The financial market needs to have ready capital partners or asset management firms like real estate investment trusts (REITs) and real estate development platforms that are seeking real

e-Commerce companies have begun to partner with financial players (for instance, by using private equity development funds) to develop logistics properties, and also recycle them once they are stabilised through the sale-and-leaseback mechanism.

estate assets to purchase for rental yield returns. With this in place, a similar model can be constructed to maximise real estate development gains while considering the potential sale-and-leaseback obligation.

Conceptually, if the real estate cannot be sold at a value higher than the construction cost, there will be no incentive to self-develop the real estate. In some countries, the asset sale value does not command a good premium above the cost of construction due to the high asset capitalisation rate (for example, in cities where this asset class is in oversupply or the achieved unit rent is highly suppressed). In China, for many real estate asset classes, especially in top-tier cities like Shanghai, the asset sale value far exceeds the cost of construction. Coupled with high demand and the availability of affordable debt, the real estate development gain can easily cover the sale-and-leaseback obligations.

Moreover, if the owner of the business needs to use real estate and would end up paying the rent anyway, the sale-and-leaseback obligation of a properly-designed capacity asset would be similar to the operating cost that the firm would have to pay for the rental expenses. In addition to the financial benefits derived from the net real estate gains, the self-developed facility would likely be purpose-designed and can lead to positive strategic benefits for the firm. Finally, the proper design of the sale-and-leaseback obligation also ensures sufficient certainty about the future use of the real estate without the burden of an asset-heavy strategy.

CONCLUSION

Cold chain facilities, particularly in China, continue to be in short supply despite their strong growth. In 2016, cold chain warehouse space in China stood at 0.14 square metres per capita, which was about half of Korea's and one-third that of the US, and well below the global average of 0.2 square metres per capita.⁹ China's cold chain logistics market is expected to reach 470 billion yuan (US\$66.5 billion) by 2020, with a compound annual growth rate of more than 20 percent.¹⁰ Being specialised assets, cold chain facilities require substantially higher construction investment. An asset-heavy strategy offers superior control but ties up financial resources and is inflexible, while an asset-light strategy is more nimble but hard to manage.

With regard to the related e-commerce sector, e-commerce companies have begun to partner with financial players (for instance, by using private equity development funds) to develop logistics properties, and also recycle them once they are stabilised through the sale-and-leaseback mechanism. In fact, logistics is now seen as a core business for many tech and e-commerce firms. For example, Cainiao Network, the logistics arm of e-commerce giant Alibaba Group, has established a 8.5-billion yuan (US\$1.24-billion) fund with China's largest insurer, China Life Insurance, to finance the expansion of its storage facilities across China. It is also expected to transfer ownership of its existing logistics centres to the fund in exchange for cash.

The prospects look so promising that Singapore's sovereign wealth fund GIC and JD have established funds that focus on China's logistics properties with capital commitments of US\$725 million and US\$756 million respectively.¹¹ The cold chain logistics property sector is expected to undergo a similar development path, thus helping to speed up the much-needed boost in the cold chain warehouse space in China and Asia Pacific.

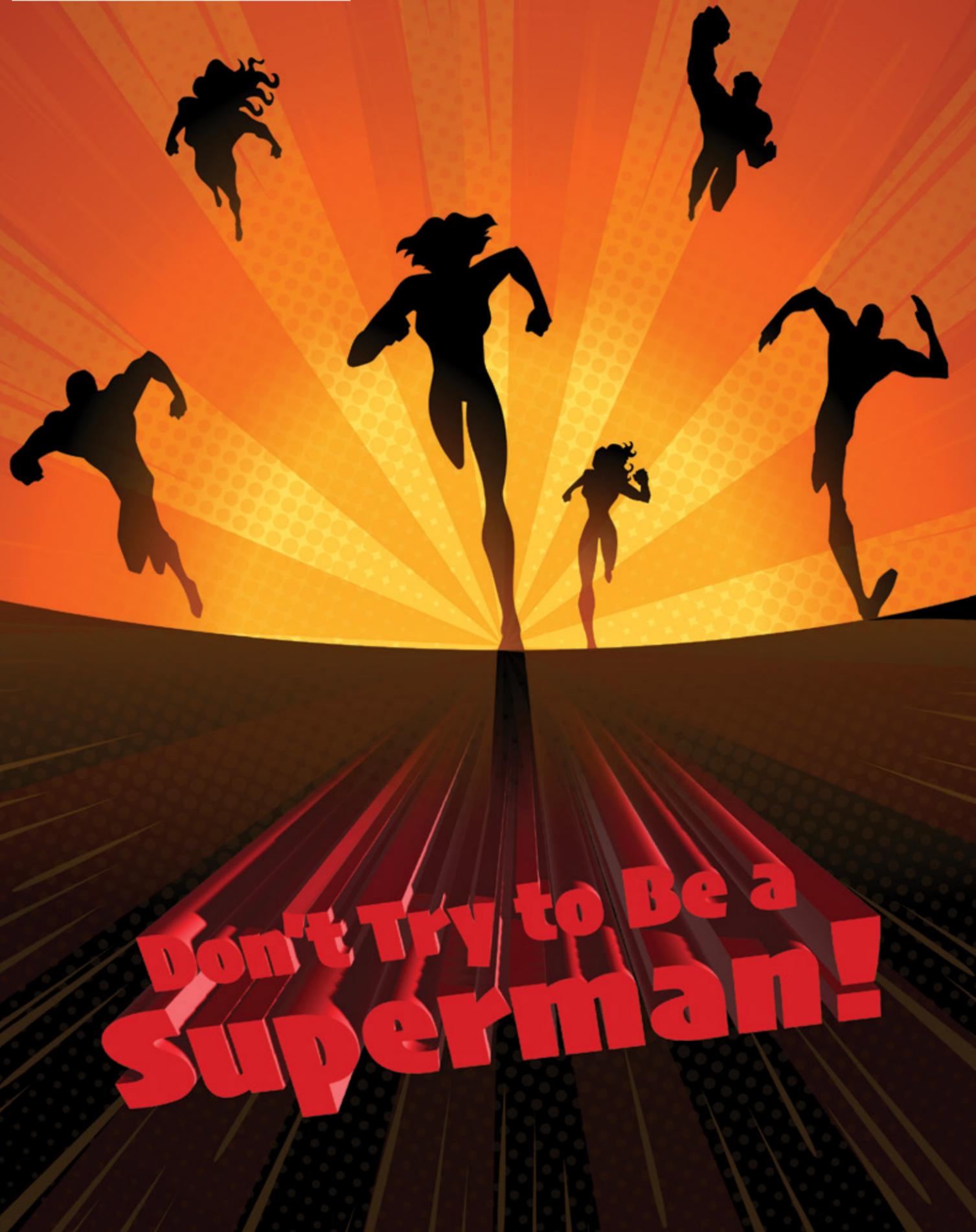
To conclude, the hybrid asset strategy has its merits. By combining a facility location model and a real estate development model, optimised through the analysis of historical asset usage data, firms can easily achieve significant corporate value by first adopting an asset-heavy strategy (developing the real estate), recycling the asset (real estate asset sale with a sale-and-leaseback commitment), and then pivoting to an asset-light model (paying rent as an operating cost as part of the leaseback commitment). I also argue it has broader applicability beyond the e-commerce or logistics sectors, and other sectors, such as F&B and retail, may also benefit from employing such a hybrid strategy. 

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N. Edwin Widjonarko, co-founder and Director of Technology of Xurya, speaks about his entrepreneurial journey in Indonesia's solar power generation space.

From being trained as a physicist to becoming a scientist in a US national research laboratory, then cutting his teeth at corporate Intel, Xurya co-founder and Director of Technology N. Edwin Widjonarko has worn many hats in the course of his career. Edwin speaks about his journey to boost the adoption of solar energy in Indonesia's commercial and industrial sector, and why he believes now is the best time to do so.

WHAT LED YOU AND PAK EKA HIMAWAN, CO-FOUNDER AND MANAGING DIRECTOR OF XURYA, INTO THE SOLAR POWER GENERATION BUSINESS?

The idea goes a long way back. Eka and I have known each other since our secondary school days in Singapore. We met again in the early 2010s when we were in the US. I was doing my PhD in physics with a specialisation in solar materials, and Eka had just landed his first job as a hedge fund manager. This was when solar was booming in the US, and Eka had been tasked with seeking investments in renewable energy. We met and discussed how to start a similar business in Indonesia—but decided that solar was still too expensive back then. Eka went back to Indonesia and built his first start-up, while I joined the private sector and began my career at Intel.

We met again in 2016 and revisited the idea. We started analysing the market outlook in Indonesia, and found that prices for photovoltaic (PV) systems were beginning to go down. We believed it could reach grid parity pretty soon, which meant that the cost of PV energy would be about the same as that of power generated off the grid. It seemed like a good time to draw up something a little more concrete.

We continued to monitor the market and timed our entrance into the Indonesian market in late 2018, right before it hit grid parity.

HOW CHALLENGING WAS IT AT THE BEGINNING?

From 2016 to 2018, we were just bouncing ideas back and forth. We ruled out manufacturing because it was too capital-intensive and there were several practical difficulties involved. Besides, it might have been hard to find staff for PV manufacturing in Indonesia. We did a lot of brainstorming until late 2017, and the company was eventually founded in mid-2018. Early that year, we got a few angel investors to put in some money, and that was when I went back to Indonesia.

The early days were really rough. The level of public awareness of PV was very low then. People didn't understand our product, and that was the biggest challenge. When we presented our product, we were posed questions like: "If there is no sunlight, such as when a passing cloud blocks the sun, does the building's electricity stop working?", or "If we install this, for how long can it provide electricity in the event of a blackout?". Even if they had heard of PV, they did not understand how it worked or how it would benefit their daily life. In fact, PV was often compared to HVAC (Heating, Ventilation, and Air Conditioning), which is totally different, except that they are both placed on rooftops. We had to educate people on how they are different.

It took us about a year and a half, with help from local partners and the media, to raise awareness of what PV is and how it would benefit users, how to pay for it, and what kind of maintenance it needed.

CAN YOU GIVE US A THUMBNAIL SKETCH OF YOUR BUSINESS MODEL AND CUSTOMERS?

Back in 2018 when I returned to Indonesia, there were two major problems that prevented solar energy from growing in the country. From the technical point of view, there was a problem with design and O&M (operations and maintenance).

Project developers might not be using good products, or they might not be using good design practices. They were also not conducting good product installations, and did not take care of the O&M.

Secondly, there was the matter of finance. Electricity is heavily subsidised in Indonesia. But there have been fewer efforts to subsidise renewable energy as compared to the heavy subsidies allocated to fossil fuels. Therefore, reaching grid parity was important. Although we could have matched the grid in terms of costs, someone else would have to bear the initial capital expenditure, and typically it is the customer. For many customers, it would be expensive—so that was the second problem. They had to foot the bill themselves.

We help customers tackle these two problems by providing a feasibility study and design service. We also provide financing support by renting out solar energy, thereby making it more affordable. We further help with construction management, quality control, and commissioning, and we take care of the O&M over a 25-year period. It really is a birth to end-of-life system, and therefore a one-stop solution for solar energy.

Initially, our focus was on the C&I (commercial and industrial) sector, and we differentiated ourselves by providing a one-stop solution for C&I solar. Now, we distinguish ourselves in different ways. I believe we are the first to offer solar energy on a rental basis, so a customer does not need to bear any capital expenditure. Moreover, as far as we know, we are the biggest to focus on the C&I segment in Indonesia.

HOW DID XURYA GET ITS BIG BREAK AND GARNER TRACTION?

Looking back, one of the things that really helped us was a small system we installed on the rooftop of the Grand Hyatt hotel in Jakarta, Indonesia at the end of 2019. Although it was a small system, it was a marketing masterpiece because heads of state stayed there when they visited. Despite our limited funds then, we spent a lot of money hiring a drone to take a picture of that system, and we included that picture in every presentation we made. That was one of the turning points.

Also, happy customers bring in more new customers. Our customers have been very pleased with the service we give them. It's hassle-free, so they are more than happy to refer us to their network. We have grown steadily, even exponentially, during the pandemic and up till now.



I believe we are the first to offer solar energy on a rental basis, so a customer does not need to bear any capital expenditure.

WHY DO YOU FOCUS ON C&I, AND NOT RETAIL? WHAT ARE YOUR CONSIDERATIONS?

Many investors like to go big. They want large- or utility-scale mega projects, but that involves a lot of capital expenditure. As a start-up and a relatively small company, we do not have that kind of money, so we have to operate on a smaller scale, and the usual option that goes with this is rooftop solar.

But if we go into the really small segments such as retail or residential, we will face three problems. First, it is very hard to promote solar to them. We are penetrating the market now, but back then, almost nobody was installing solar. It was incredibly challenging to break into the residential market without any incentive. Second, profit margins were really low because there were no economies of scale. Third, operations would become very expensive because there would be so many relatively small systems distributed across Indonesia, which is also a no-no.

We found C&I to be less capital-intensive compared to utility-scale projects. While it shares some of the problems of residential and retail, it is not that bad, and it is sizeable enough to be manageable, so it is a sweet spot between utility-scale and residential.

PREVIOUSLY, YOU SAID THAT THE PANDEMIC HAS ENABLED THE COMPANY TO GROW AT A TREMENDOUS RATE. HAS IT ALSO MODIFIED YOUR BUSINESS MODEL?

The pandemic has forced people to move away from their daily routines, allowing them to think more about sustainability, and also to learn and save more. That is how interest in solar and renewable energy, as well as carbon capture, increased significantly in Indonesia. And this has had an enormous impact on our sales. People are more receptive now as they look for savings for their operations.

At the same time, the series of lockdowns have changed the way we operate; working from home was one of the biggest changes. Right now, we work in hybrid mode. While we have a new office in Jakarta, we find that our staff are more efficient when they are working remotely because traffic is bad in Indonesia. We do not want our employees to spend up to three hours daily commuting.

We designed our new office to be a collaboration space. On the days when people do come into the office, they sit in an open office setting. Whiteboards are everywhere, and there is not a single cubicle. The most junior staff can talk to any of the senior executives to exchange ideas.

Even the work schedules are arranged in such a way that every team member will have a chance to interact with other team members. We focus more on inter-departmental exchanges rather than intra-departmental collaborations. This is one of the biggest positive changes.

If it hadn't been for the pandemic, we would not be as ready as we are now to manage remote, distributed operations. For example, along with our corporate headquarters, we also have four operation bases in Jakarta, Medan, Semarang, and Surabaya. I do not think people would have been ready to work far away from the headquarters without the lockdowns. That is probably the biggest operational impact the pandemic has had on us.

The pandemic has forced people to move away from their daily routines, allowing them to think more about sustainability, and also to learn and save more.

LOOKING AHEAD, WHAT GROWTH AREAS ARE YOU KEEPING A CLOSE WATCH ON? HOW ARE YOU STEERING THE TEAM TOWARDS THOSE GROWTH AREAS?

The solar boom has just begun in Indonesia post-COVID. From state-owned companies to local conglomerates to foreign companies entering Indonesia, it's amazing. It feels like the game has just begun. We are currently number one or two in Indonesia for C&I, and I think the sector is about to boom.

We have also increased our workforce exponentially. We started with about 17 people in 2019. By 2020, we had about 40, and now we have 80. The hiring is in response to demand. We spend a lot on automation, and we have a group of dedicated software developers to help us improve our efficiency to become one of the best at remote deployment in the solar energy sector. We definitely want to spend on technology as well as staff development. I believe the quality of the workforce is just as important as the quantity.

With the increasing demand for renewable energy, more players are coming on board, which can affect the talent and recruitment side of the business. We know that the pie is big, and even though we are the largest right now, compared to the market size we still account for a very small percentage, so there's a lot of room to grow. As for the workforce, it is a different landscape. The solar industry, while booming, is still in its infancy, so getting the right people can be difficult.

Our solution is to develop in-house training. Our engineers and field engineers are trained internally, as are our O&M crew. Do we worry about our staff hopping to other companies? Not really. We have seen a couple of our staff do that, but we haven't seen critical staff moves. I believe our company culture and the opportunities we give them to grow make a difference. I know for a fact that some of my engineers were approached by other companies, but they rejected the offer flat-out. They said that they were not interested because they have the opportunity to grow here at Xurya and they enjoy working with their teams.

WHAT AND WHO HAVE BEEN SOME OF THE GREATEST INFLUENCES IN YOUR PERSONAL LIFE, SHAPING YOU AS AN ENTREPRENEUR?

If you ask most Indonesians, they'll say entrepreneurship is what they've been pushed to do since they were children. Ask any Indonesian, "Do you want to work for someone else? Or do you want to start your own business?", and almost everyone will say they want to start their own business. I went to school in Singapore and the US, and somehow almost every

Indonesian I met wanted to start their own business. I guess it's the culture here that you have to go out and try your luck.

I had wanted to start my own business from a very young age because I saw my father do it. Both my parents are entrepreneurs. My dad is an architect by training, and he runs a building and construction business in Bandung. My mum is a pharmacist and also has a small pharmacy there. I have learnt many lessons from them, and the most important one, I think, is frugality. We are quite frugal in our spending.

My dad was very hands-on. He took me to visit the construction projects he handled, so I got to interact with his workers. And through my dealings with business owners in Bandung, I was exposed to people from the upper rungs of society too. That helped me a lot in the early days of Xurya, and even now, it has been useful to be cognisant of differences in background, to respect others, and make sure everybody feels at home in the company.

And I learnt a lot about how corporates operate during my Intel days, such as why things like standard operating procedures are important. But too many procedures can also be a hindrance for a new, small company like Xurya. I have to balance the need for stability and certainty on one hand, and flexibility and nimbleness in responding to opportunity and change on the other.

WHAT ADVICE WOULD YOU GIVE TO BUDDING ENTREPRENEURS, ESPECIALLY THOSE WHO ARE TECHNICALLY TRAINED AND DESIRE TO START A BUSINESS JUST LIKE YOU?

Whatever your background is, don't try to be a superman. Many people idolise someone who can build a business empire singlehandedly. I think such days are over. Right now, it is more important to collaborate with other people to realise your dream. Technology and society have become very complex, so what the market needs has become complex as well.

I would say that it is best to collaborate with people and firms who are very different from yourself. Xurya received funding recently from notable companies such as Schneider Electric and SEACEF (Southeast Asia Clean Energy Facility). We are incredibly lucky to have active and helpful shareholders who contribute in their own ways. It goes both ways; often, they ask us for our insights on local developments. We use a lot of Schneider Electric products, especially those for electrical safety. They also brainstormed with us on off-grid or microgrid solutions—something different from what we would typically do and could just be a future business model for us. Similarly, SEACEF shared insights from a big project in Indonesia, while some other shareholders opened doors to future project leads or helped close a deal. It happens on a daily basis. They give us lots of input and add a lot of value too.

I believe there are three important things companies need to be good at. It needs to have a good product, which means that the company's offering provides value. So the company should have knowledge of what it offers, be it a technological product or something more service-oriented. Second, it needs to have good financial systems and processes, which means it can manage its money well, including payments. Third, the business must be well-run. With good operations, the company can offer more to help as many people as possible.

But I would like to emphasise that while the company needs to have all these right from the beginning, you don't need to—and probably can't—do everything yourself. So get a co-founder. In fact, perhaps it's best to have three co-founders so that there is holistic knowledge about the product, financing, and operations.

Remember, you can't do everything by yourself. The days of being a superman are over. 

Whatever your background is, don't try to be a superman. Right now, it is more important to collaborate with other people to realise your dream.



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Helping Asia's Elderly to Become Digital Citizens

This needs an urgent 'whole-of-society' approach.

By Wee-Kiat Lim



Pechara Voracharusungsri, a 70-year-old Bangkok native, uses social media and an instant messaging app to shop online twice a month.¹ This is a considerable jump in commitment from when she shopped online only a few times a year before the pandemic. Meanwhile, other elderly may find the blazing pace of digital technology enhancements disruptive and disconcerting. The experience of 65-year-old Chinese national Guo Zhichao reflects this sentiment. Recounting how he and his wife had to seek help with using their smartphone to order food during their first vacation since the COVID-19 crisis, he lamented, "I used to travel when I was young, but after that trip, I felt intimidated by travel for the first time in my life."²

Indeed, the promise and perils brought on by the wave of digital transformation in recent years present a mixed bag for Asia, with the effects becoming increasingly salient since 2020. There is cause for optimism and concern about how ready Asians, especially the elderly, are to meet the digital challenges head on. While many Asians aged 65 or older are becoming more tech-savvy, compared to say five years ago, the sheer number of Asians entering the silver age might spell trouble for many societies. To highlight, by 2060, there will be more than 1.2 billion Asian elderly, comprising 10 percent of the global population.³ This staggering figure means that over the next four decades, the number of Asians entering this age band is expected to triple. Of these, the majority will come from East and South Asia, where the world's two most populous nations, China and India, are located respectively.

The issue of gender could also further compound the digital divide challenge that is already cleaved along age. For example, in India, particularly in rural areas, only heads of households—who are predominantly male—own a digital device. As a result, women, especially older ones, have to depend on male family members for Internet access.⁴ In Southeast Asia alone, due to factors such as disability, lack of access to capital,

and illiteracy, in addition to old age, as much as 31 percent of the population or 150 million individuals are already being disadvantaged in the digital age.⁵ There is clearly an urgency to improve digital literacy.

But first, what is digital literacy?

ENABLING DIGITAL LITERACY

In a nutshell, digital literacy refers to the ability to understand and use digital technologies, such as the Internet, social media, and smart devices. It enables one not just to survive but also thrive in a world that is not only increasingly digital, but also preferring digital. For instance, the newspapers that you buy off the shelf at the convenience store today are likely 'frozen' from what was filed yesterday, compared to their 'live' and updated version online. Likewise, consumers are getting used to pre-ordering the latest smartphones online even before they are stocked up in brick-and-mortar stores.

Such a 'digital-first' environment compels the elderly to be digitally competent in order to access timely and accurate information online. They must navigate performing day-to-day digital tasks smoothly, such as transacting online for products and services; making appointments; communicating through online messaging, sending files, and participating in virtual meetings. In the event of technology failure, they should also be able to perform basic troubleshooting on their devices before seeking help from friends and family.

Preparing elderly Asians to be digitally literate may foster their confidence and, more importantly, their willingness to adopt digital behaviour. This could significantly reduce the demand for offline services in sectors such as healthcare and retail—which is particularly salient as the largest group of users excluded from the digital realm across societies is the elderly. Furthermore, digital literacy can also help the elderly stay connected with their families and communities. By being able to use digital technologies, such as the messaging app that

Pechara uses to shop online, the elderly can stay in touch with loved ones, especially younger family members who are digital natives, and remain part of the latter's social lives even when they cannot share the same physical space.

NOT JUST 'THE GOVERNMENT'S JOB'

Governments have a prominent role in raising the digital literacy of the elderly. In addition to setting policies, the public sector could also take the lead in implementing initiatives. In Singapore, the Infocomm Media Development Authority (IMDA) launched Seniors Go Digital, and its learning programmes are organised into three tiers. The first is using basic communication tools including messaging, the second is making video calls, and the third is accessing government digital services and becoming comfortable using e-payment tools at locations they frequent, such as markets and hawker centres.⁶

However, the IMDAs of the world and the public sector can only do so much. In order to address a challenge of this magnitude, we need to take a 'whole-of-society' approach to mobilise people's civic-mindedness and public spirit, as well as the business-savviness and entrepreneurial drive of the market, to harness resources for improving digital literacy and inclusion. For example, in India, tech start-ups such as Bengaluru-based Easy Hai and non-profit organisations such as HelpAge India conduct digital literacy workshops for the elderly.⁷ China's major tech firms, estimated to be worth RMB 3.79 trillion (US\$544 billion) in 2020,⁸ have long recognised the huge potential of the elderly market. In fact, as early as 2018, e-commerce giant Alibaba's Taobao had already launched 'family accounts' where young users can help their parents make payments. In another initiative, Alibaba introduced dedicated customer services including live streaming courses to teach the elderly how to shop online. In other instances, Xiaomi, Oppo, and China's other smartphone brands have

introduced 'senior mode' on their devices, which enables elderly-friendly features like larger icons and text, as well as screen-reading tools.⁹

Given the urgency to act, governments, non-profit organisations, and businesses should learn to collaborate in various modes, such as allowing different parties to lead across various domains, despite having their own specific roles to play. For example, the government may assume leadership on policymaking and governance issues, such as cybersecurity. Non-profits, being closer to the ground, may be more effective at identifying critical segments of the vulnerable communities that should be prioritised for access and assistance. For the private sector, it could take the lead in fund-raising, as well as training and partnering with micro, small and medium enterprises to be more competitive in the digital economy.

While we try our best to encourage and provide the most conducive conditions for Asia's elderly to become 'naturalised' digital citizens, we must also remember that the choice ultimately rests with them. We should not let a digital-first world be reduced to a digital-only world. At least not yet. This is where we can take a leaf from the Singapore government's digitalisation efforts—many public agencies offer in-person and contact centre services for citizens who need help with their online services. We must remember there will always be individuals, not necessarily only the elderly, who are not able or simply not interested in joining the digital world. This is where we need to exercise compassion and be truly inclusive. 

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Don't Fear the Reaper

Digital transformation in Singapore's MICE industry.

by Candy Mak and Poon King Wang

When business ground to a pandemic-induced halt in February 2020, the Singapore Association of Convention & Exhibition Organisers & Suppliers (SACEOS) immediately got to work to keep the country's Meetings, Incentives, Conferences and Exhibitions (MICE) industry afloat. In the first month, it worked with the authorities to triage the situation. Within eight months, they produced a roadmap for a new hybrid business model which the rest of the industry could adopt. Less than two months later, they witnessed the new model being deployed on the global stage at the 2020 Singapore Fintech Festival (SFF) in December, which was broadcast live to 60,000 attendees and around the clock for over five days.

Is there a secret to the successful turnaround, one that is exclusive to the personalities that make up this industry? Perhaps a propensity for change, or a hardened resilience from living day-to-day under Murphy's Law? While that could be true for many MICE professionals, we also pay heed to the tireless efforts of many, as well as the unfortunate casualties, including event businesses that were shuttered when they could neither partake in the digital transformation nor outlast the pandemic.

In this article, we discuss the lessons learned from the MICE industry in the context of managing change, mobilising talent, and building resilience.

WHEN MICE MET THE REAPER: FROM TRIAGE TO TRIUMPH

Empty spaces, what are we living for?¹

On February 7, 2020, the Singapore government's Multi-Ministry Taskforce raised its COVID-19 risk assessment, sounding the ostensible death knell for the MICE industry. One by one, organisers saw events being postponed or cancelled. Event halls became uncharacteristically still, and small and medium-sized enterprises (SMEs) started to bleed out.

Even organisers that had pivoted to the digital space were finding their new basis for generating revenue dissipating quickly.



The hit taken by the MICE industry was particularly severe. Businesses had made heavy investments for a robust line-up in what was possibly their most stellar year yet. When the need for these facilities, trusses, and furniture evaporated, they were left only with hefty bank loans and dwindling cash flow that they could not replenish in time. International visitors were not coming in. Domestically, they were restricted by safe management measures rolled out by the Singapore government to mitigate the risk of COVID-19 transmission among its residents and visitors.

With the help of the government and some quick reflexes, MICE players bought themselves some time. They mounted intensive discussions and engagements with the authorities for monetary support, resulting in measures such as the Jobs Support Scheme,² moratoriums on loans, and tax reliefs. To facilitate a return to business, they worked to translate regulations into operating protocols like safe distancing and sanitation practices that companies could follow when reintroducing physical events, albeit on a much smaller scale. However, given the long gestation period of six, nine, or even up to 12 months to prepare for each event, companies continued to struggle.

Even organisers that had pivoted to the digital space were finding their new basis for generating revenue dissipating quickly. Initially, their research showed that companies were keen to carry on engaging their customers during lockdown and there was a willingness to pay for digital participation. However, just as quickly, participants started questioning why they should pay the same amount as they did for physical events when they were interacting on platforms that cost close to nothing.

Digital was their lifeline, but now it simply highlighted their inability to deliver value in this domain. The MICE industry earnestly re-examined its case, reframing its fundamental questions from “How do we survive this?” to “How do we intensify engagement?” and “How can we mimic

and replicate digitally what we find in face-to-face meetings—the serendipitous moments?”. These questions propelled the industry players on a reflective journey that culminated in the development of the Event Industry Resilience Roadmap (IRR) together with the relevant government agencies, the Singapore Tourism Board (STB) and Enterprise Singapore (ESG).³

I'll soon be turning, round the corner now⁴

Launched on October 8, 2020, the IRR formalised the MICE whole-of-industry approach⁵ to recovery and beyond. Drawing from the collaborations between government and industry stakeholders, it delivered new guidelines and made a case for hybridisation for the rest of the industry. The hundred-page document was comprehensive. It included sections such as “How to Get Started”; comprehensive checklists such as those for programming, cybersecurity, networking, and metrics; re-engineered educational pathways for new areas such as broadcasting and analytics; and a new Events Community Network to bring stakeholders together for growth opportunities.

Because the IRR was not a theoretical exercise but a collection of learnings⁶ from actual pilot projects⁷ by key players, the document also contained precise and just-in-time recommendations that businesses could implement immediately, such as programming “four to six hours of content per day... with short breaks and each session not exceeding an hour”.

Several of these pilots were run by SingEx Holdings (SingEx)⁸, whose then-chief executive officer Aloysius Arlando was also the incumbent president of SACEOS at that time. In a phased approach built on the technology industry practice of design sprints, SingEx pulled off increasingly complex hybrid events, with the high-profile 2020 SFF marking a clear breakthrough for its own transformation and a key milestone for the industry (refer to box story for how SingEx’s journey contributed to the MICE industry’s transformation efforts).

THE SINGEX EXPERIENCE

Starting Small

CAREhab GO

(July 2020)

SingEx started a small pilot with the Society of Rehabilitation Medicine (Singapore) to test-run user journeys during the virtual run of a healthcare conference, CAREhab GO, for a group of 100 to 200 medical professionals. In terms of manpower needed to organise the event, it was not a one-size-fits-all approach. The company partnered with global consultancy firm Accenture to analyse what to do with different groups of staff: those who can change, those who cannot change, and those who needed more time. Those who could move on to new roles received training while others were redeployed to care roles at the Singapore Expo COVID-19 Community Care Facility that was set up in April 2020. It subsequently adopted the learnings from the first pilot for the second run, which was already being planned during this period.

Stacking Skills

Industrial Transformation Asia-Pacific

(October 2020)

SingEx went on to host the first hybrid version of the Industrial Transformation Asia-Pacific (ITAP) conference for up to 5,000 participants while concurrently activating its plan for the third event, which was its largest experiment. The opening ceremony for ITAP was held before a live studio audience while simultaneously being broadcast in real time on ITAP Connected⁹, the digital platform designed by SingEx. It prepared a special helpdesk and trained more people to help with troubleshooting. For physical attendees, it ensured a sterile environment and adhered to safe event protocols.

The process was bumpy. It was SingEx’s first attempt at executing 3D Learning Journeys and global payments. To ensure the digital platform was usable and up to standard, it was constantly in communication with the developers. It found it had to debug payment forms for extra zeroes when currencies like the Indonesian rupiah were used, and fight off hackers who were having a field day with its apps and websites. To manage this, it sought help from Singapore’s Government Technology Agency (GovTech)¹⁰, which worked with a pool of SingEx employees with the requisite skills and keen interest in this area. Meanwhile, Microsoft provided expertise and support on 3D and Teams, its proprietary business communication platform.

Going Global Singapore FinTech Festival

(December 2020)

By the end of 2020, a hybrid, round-the-clock edition of the highly anticipated SFF was launched in various cities around the world, connecting physical attendees in Brunei (the only nation which was not locked down at that time) and over 60,000 virtual attendees in a week-long 'online city' experience. For its on-site operations, including those at the broadcast studios and the call centre manned by 15 staff, it had close to 400 people working on shifts.

With its experience from ITAP, SingEx was able to fortify its payment systems in time to neutralise close to 2,000 hacks. It built on its earlier experience in broadcasting, buffering half an hour for each presenter to be synced up with technical support. New skillsets in lighting, make-up, transition between different elements, and tech operations were again put to the test, but now it had become easier for teams on the ground to find that extra 20-second buffer for contingencies. Community managers—what Arlando called “court jesters”—were given the leeway to be creative and handle this big event on their own. They even came up with a ‘hit list’ of people to engage, including renowned personalities like Bill Gates. For additional manpower for SFF and several other events running in parallel at that time, they reached out to the Institute of Technical Education (ITE) colleges in Singapore, which are responsible for post-secondary vocational training, and the country’s five polytechnics. As many parents were reluctant to allow their children to work at the events for fear of contracting the COVID-19 virus, they deployed gig workers instead. By that point, SingEx was more confident of itself. Because it had been studying consumption patterns and other trends while running regional and international hybrid events, it could even start monetising these insights as new income streams.

The staging of three concurrent tracks with increasing intensity and new elements at each stage had proven successful. You could even say SingEx was too successful: many of its employees were subsequently talent-scouted by top companies for their unique portfolio of skills, such as sales combined with digital skills. That said, it remains noteworthy that SingEx did not have to lay off any employee; people saw that they could sustain themselves and their livelihoods, and even see new possibilities ahead.

SEASONS DON'T FEAR THE REAPER¹¹: LESSONS FROM THE MICE INDUSTRY

There are three lessons from the Singapore MICE industry’s transformation that we find worth highlighting for other industries to consider.

Lesson 1: Show the rest what ‘amazing’ looks like

In the face of crippling fear, small successes demonstrated by role models can inspire change and snowball into big wins. From the MICE industry’s experience, we saw change had taken hold globally—within the industry and across national borders—when local role models upended assumptions about what could or could not be done, inspiring further success and growing a critical mass of change agents. By showing what ‘amazing’ looks like, the exemplars can help industry players become more confident about adopting new models, and more stakeholders can join the ecosystem as demand for new products, services, and partnerships grows.

Being one of the first movers, SingEx was able to enthruse its stakeholders to be part of a sophisticated and intense change process. The process was challenging, but this was precisely what kept the company going because, as Arlando shared, all they had was a sense that they were “all at the same starting line, because it’s never been [done] before”. We observed that the camaraderie and tight feedback loops among employees, customers, and partners helped SingEx to adapt more quickly.

Lesson 2: Having a strategy to beat competitors is only half the battle won

To win the other half, be prepared to collaborate with your competitors.

In the MICE industry example, businesses that wanted to stay and ride out the crisis had put aside their differences and banded together. Event organisers of every stripe—from sports to entertainment and other experiential, live events—met together with the authorities to discuss workable and commercially viable ways to carry out events safely. Their calibrations and collective insights were eventually captured under the SG SafeEvent Standard and rolled out through the IRR, along with learnings from companies that had been piloting various digital and hybrid concepts. These moves encouraged the rest of the industry to try new things and forge new partnerships for an evolving landscape.

The MICE industry is likely to live by this spirit of cooperation even as it recovers from the pandemic, seeing how it still needs to rely on industry players to tackle ongoing issues like manpower challenges and high operating costs.

Lesson 3: As you change, keep your people in sight and safe Safe spaces to learn as you grow into your new identity

It seems counter-intuitive to think that the deeper into the virtual world we go, the more attention we need to pay to the non-digital, material, and corporeal aspects of the learning experience. In fact, we crave for these elements when we are learning and adapting to change in today’s world of work.¹² By introducing solutions like phasing plans and pilots, we create safe spaces that allow newly-configured networks of employees, partners, customers, and machines to, in Arlando’s words, “go through the shocks” together, and then keep iterating towards more efficient and effective versions. As



By showing what ‘amazing’ looks like, the exemplars can help industry players become more confident about adopting new models, and more stakeholders can join the ecosystem as demand for new products, services, and partnerships grows.

individuals try new roles and technologies, the process of articulating what they do and who they are now also helps them rehearse and embody who they are becoming.¹³

Consider Uncle David, an elderly sales representative who responded to a call for staff to man the helpline for an international hybrid conference. To help callers troubleshoot their issues, he had to pick up skills in navigating digital platforms and technologies. While he was on the line with one young, frustrated attendee, Uncle David was gentle and encouraging: “Let me walk you through... By the way, I am 67 years old. If I can manage to do it, I’m sure you can too!” In this exchange, both customer and employee were articulating and growing into their new identities (such as from the unfamiliar to familiar, and from physical event provider/attendee to hybrid event provider/attendee), with positive spillover effects on the rest of the team as they were also negotiating change and uncertainty (that is, progressing from challenging to doable).

Safe spaces to be yourself and make choices

On a broader level, the fears and ambivalence that people face in times of change are also felt viscerally. It is thus important to hold space for one another to process emotions and choices without judgment.

At SingEx, Arlando had taken time to engage in daily huddles with workers and even directors who found the work difficult to do under the extra pressure of the nationwide lockdown. He listened to their problems about children screaming at home and resized the workload for those who were facing depression. For those struggling to adapt, rather than using scare tactics, the management took their autonomy into account: “[L]et them decide if it is for them.”

CONCLUSION: THOU SHALT NOT WASTE A CRISIS

On page 87 of the IRR, the header reads in bold: “Never let this crisis go to waste”. It can be argued that the MICE transformation was successful because industry players did not allow fear to guide their decisions or paralyse them. Instead, the industry actively used the crisis as a teacher: to discover new value, stress-test new business models, and learn what makes them resilient for the long run.

And being resilient here means diversification. Like many other successful instances of digital transformation, the MICE industry did not simply do a linear pivot from the physical to the digital. Its digital pathways were set up to complement the physical ones, allowing the industry to diversify its offerings and put in place back-ups that it can confidently execute.

The hybrid model that was developed is deceptively simple but effective in helping the industry stakeholders ride this crisis and beyond. In an era of polycrises¹⁴ with threats around every corner,¹⁵ the MICE industry’s experience of transforming itself in ten months from a local, fully physical model into a global and hybrid one is a great example of how not to waste a crisis and how to gear up for the next one. 

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Endnotes

- ¹ From the famous 1991 song “The Show Must Go On” originally by Queen.
- ² The Jobs Support Scheme (JSS) was introduced in 2020 during the early days of the COVID-19 pandemic. It provided wage support for employers to retain employees who were Singapore citizens and permanent residents.
- ³ SACEOS, “Resources: Event Industry Resilience Roadmap”.
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- ⁶ Investment Monitor, “Singapore Redefines Possibilities in Hybrid Events”, April 6, 2021.
- ⁷ Other pilots undertaken during this period include Web in Travel Singapore in September 2020 (conducted virtually over three days, and one day in hybrid mode at Marina Bay Sands’ new Hybrid Broadcast Studio which hosted 40 live audience members) and TravelRevive, a hybrid tradeshow by ITB Asia and STB which received 1,000 attendees in-person from 14 countries.
- ⁸ SingEx managed Singapore Expo, as well as provided solutions for venue management and consultancy, exhibition, and conference organising, and related ventures in international exhibitions. SingEx has since merged with Singapore Press Holdings events subsidiary Sphere Exhibits to form SingEx-Sphere and is now known as Constellar Holdings.
- ⁹ It allows interactions between both physical and virtual attendees, as well as provides access to personalised content, business-matching opportunities, and digital showcases.
- ¹⁰ GovTech is a Singapore government agency that is responsible for delivering digital solutions within the civil service and to the public.
- ¹¹ From the 1976 hit song “(Don’t Fear) the Reaper” by Blue Öyster Cult.
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SMU Overseas Centre Jakarta will work closely with partners to deepen engagement with the Indonesian community through knowledge exchange, partnerships, research collaborations and professional development.

Our regional eco-system network will enable SMU to be **Asia’s Knowledge Gateway**.

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