

# FinTech in the Age of Attacker

Expert perspectives on FinTech in Asia



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## INTRODUCTION

This compendium is prepared for a special Fintech event by Fintegrate Zone 2019, in collaboration between Oliver Wyman and BRINK/Marsh & McLennan Insights.

The articles contained in this publication are selected based on relevant Digital and Fintech themes considering the event audience. It covers three main aspects related to incumbent banks including strategies for dealing with Digital attackers, optimally leveraging Technology and recognizing evolution of Fintech.

We are entering an age of “digital attackers, those who are challenging the existing paradigms of how financial institutions remain relevant in our lives. The concept of ‘ambient finance’ brings financial transactions to life via seamless customer experience. In the race to hold customer touch points across digital ecosystems, fintechs are well-positioned to dominate customer access. Interestingly, financial institutions and fintech firms are seeking collaboration opportunities to innovate new products or solutions via sustainable partnerships.

However, traditional legacy infrastructure poses a major risk for banks to embrace strategies for the future. Banks’ technology functions need to adapt not only to scalable cloud native platforms adapt new technologies such as AI, Blockchain or robo-advisory, but also to embrace soft aspects such as new ways of working, dynamic organization and enabling culture.

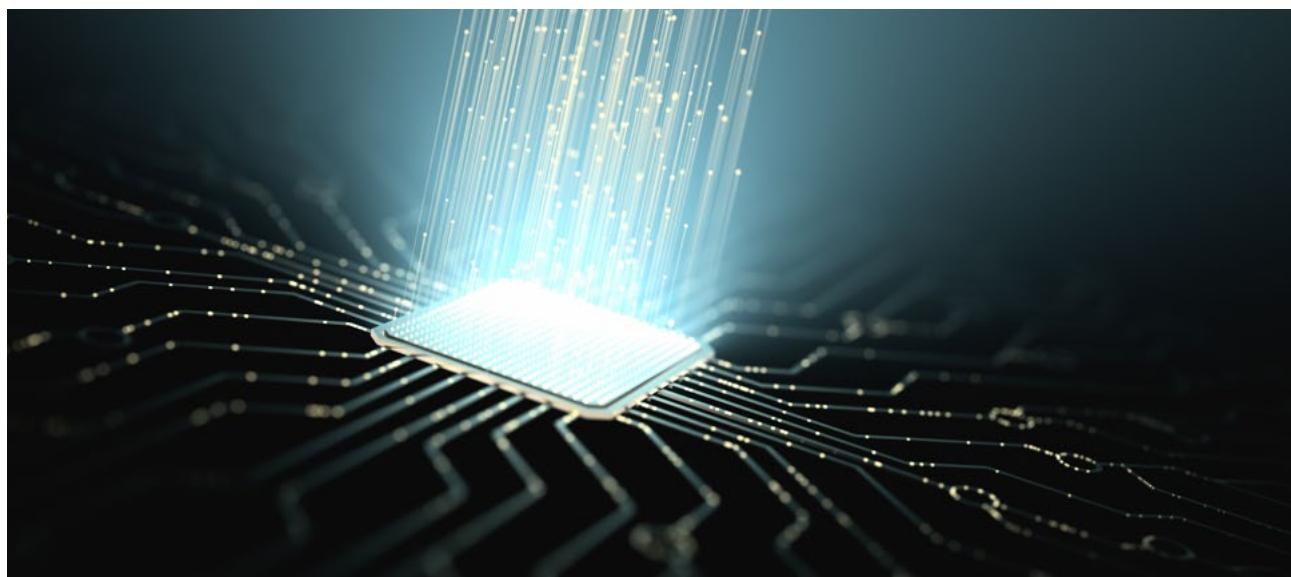
The next big wave of innovation in financial services will be driven by existing firms taking a greenfield approach that allows incumbents to combine what is possible in a new build with business model advantages of an existing firm. Taking such an approach means tapping into the same flywheel momentum of growth employed by big tech, breaking out of the low-returns cycle. The quality and low cost of new technology, the potential for dramatic change in competitiveness, the reduction in conduct and cyber risks if done correctly, and modern methods for migration, all make this idea compelling right now.

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# PREPARING FOR DIGITAL DISRUPTION

## THE AGE OF DIGITAL ATTACKER

**Shrikant Patil,**  
Principal at Oliver Wyman



“Forty percent of businesses today, unfortunately, will not exist in a meaningful way in 10 years,” John Chambers, retired Cisco CEO, once predicted in 2015, adding that while 70 percent of companies would “attempt” to go digital, only 30 percent of those would succeed.

Over the past decade, the industry has witnessed a radical shift in the perceptions of value proposition – from incumbent multinationals to responsive and scalable digital entrants to reinstate their relevance for markets. While the phenomenon is often referred as a disruption, it presents a glorious opportunity for embracing value creation by embracing new age digital principles.

Since 2014 and 2019, the number of unicorns has sharply risen from

38 to 325 globally. Additionally, they have continued to expand in terms of their valuation, and today, 20 of these companies are decacorns – companies valued at over \$10 billion. These numbers not only reflect a phenomenal growth at an unprecedented scale but a burgeoning optimism that speaks volumes about the needs and aspirations that were largely unaddressed by existing players. Meanwhile, in the same period, the total market capitalization of the top 10 banks has increased less significantly from \$1.7 trillion to \$2.3 trillion.

Speaking in context of the financial sector, banks and insurance companies across the world are currently experiencing an era of hyper digitization. Traditional banks

face disruption from various quarters making it imperative for them evolve in order to remain profitable over the medium- to long-term.

The disruption is starkly evident as new entrants pose a formidable threat to the incumbent banks. The shift in value proposition is clearly pointing to the mastery of new entities to dominate the world stage.

### IMPACT ON INCUMBENTS

Incumbent banks need to watch out for these digital attackers or neo banks. This is because not only do they serve as an alternative to banks, they are also leaders in adopting technology, helping customers and businesses to uproot legacy technology that plagues traditional

players. As of 2018, these new entrants have accumulated up to one-third of new revenue in the global banking industry. As banks adapt to the changing ecosystem, there are four driving forces that they must be cognizant of.

**CUSTOMER EXPECTATIONS** of banking have shifted from transactions at physical branches to frictionless product opening, optimized financial management and even banking super-markets.

**NEW COMPETITION** from digital entrants is accelerated by price comparison sites, mono-lines, and even info-tech giants and online retailers.

**BUSINESS MODEL/BENEFITS** are increasingly marked by outsourcing of non-core backend activities to vendors and partnerships forged with other players in the ecosystem.

**REGULATIONS** increasingly warrant customer ownership of data and compliance by regulation aggregators and platform providers.

## NEO DIGITAL ATTACKERS CONQUERING FRONTIERS

Disruption in the financial services sector is posing formidable challenges for incumbents. This is largely due to the various products and services new players offer that incumbents are still getting accustomed to and are reacting to adapt.

For example, today a new generation neo digital attackers can offer a highly targeted value proposition enabled by data and analytics, achieving a Return of Equity (ROE) rate of over 30 percent. On the other hand, a universal bank with digital offering provides a broader value proposition and receives a lower ROE of 15-20 percent. The new players also have a much shorter time to

market for dynamic product offering, while the universal bank typically takes 6-12 months with its in-house solutions and products.

Additionally, new players don't have large legacy infrastructures, making it easy for them to change direction (if needed) and strategy – something that large incumbents with well-established infrastructures cannot do as swiftly. The new generation digital bank has a lean data infrastructure that allows easy access to any data almost real time and for quick development. It also has an agile modular IT architecture with advanced functionality. A universal bank with digital offerings will pale in comparison with its complex data infrastructure, traditional data analysis techniques, and rigid IT infrastructure.

## NEOBANK PRODUCT OFFERINGS AND INITIATIVES

A neo digital attacker is one that typically has no physical locations and serves its customer primarily through digital platforms. Most neobanks, such as Pockit and Monzo, start by launching core products such as current accounts, cards and payments. Only a few independent neobanks, such as Atom Bank and N26, have ventured into the credit domain. This is easier for subsidiaries of institutions with credit decision capabilities.

In addition, OpenBank and Oaknorth for example, have also added products such as savings or insurance-to-date, with most using third parties for such offerings.

With innovative opportunities and leadership commitment, neo-banks can embrace challenger ambitions in line with global leaders. Key initiatives include enabling secure data exchange, embedding third

parties on the bank's platform, originating and/or embedding bank products on third-party platforms, supporting the launch of micro-banks and providing customers with third party apps.

## BENEFITS OF ADAPTING A CHALLENGER MODEL

At the current rate that digital attackers are progressing and evolving, traditional financial services firms will need to learn to disrupt, or they will be disrupted. Incumbents can gradually move towards a challenger model by swiftly adding new digital capabilities on the top of their current model.

These are some key benefits of the challenger model for incumbents:

1. Low cost to serve as build costs have decreased dramatically with advances in cloud-based services and technology.
2. Speed to launch and time to market have also significantly been reduced without the need to build from scratch.
3. Zero operations owing to the possibility to create businesses that are digital by design, contributing to significantly lower run costs.
4. Modular, scalable architecture that support data-driven business models and provide active solutions to win over customers.
5. Infrastructure agnostic, which allows player to sidestep the challenge of legacy infrastructure and get to a truly customer-centric and pragmatic offering faster.

THE OLD VERSUS THE NEW

Source: Oliver Wyman, 2019. The State of the Financial Services Industry 2019: Time to Start Again

GROUP OF EXISTING BANKS

~\$150

AVERAGE COST TO ACQUIRE NEW CURRENT ACCOUNT CUSTOMERS



GROUP OF DIGITAL CHALLENGERS

~\$30

3

DAYS FROM APPLICATION TO CURRENT ACCOUNT FUNCTIONALITY BEING ACCESSIBLE



0

3-6 months

TIME TO LAUNCH A NEW FEATURE



2 weeks

<1,000

RETAIL BANKING CUSTOMERS PER FTE



>2,500

25%

EMPLOYEES RATING THEIR COMPANY AS A 5 STAR EMPLOYER



68%

## GREENFIELD AS A CATALYST FOR BANK TRANSFORMATION

We refer to this incumbent strategy as the [Greenfield approach](#) (Exhibit 2). As an incumbent, imagine if you could combine what is possible in a new build with the business model advantages of an existing firm (such as the established branding, funding, customer base, regulatory approval and existing data).

Existing players are starting to realize the merits of starting afresh. The National Australia Bank (NAB), for example, recently launched QuickBiz, a digital unsecured lending solution that has become a key channel for small business. Another is Nexible, built by German insurer ERGO as a challenger proposition to its auto-insurance business.

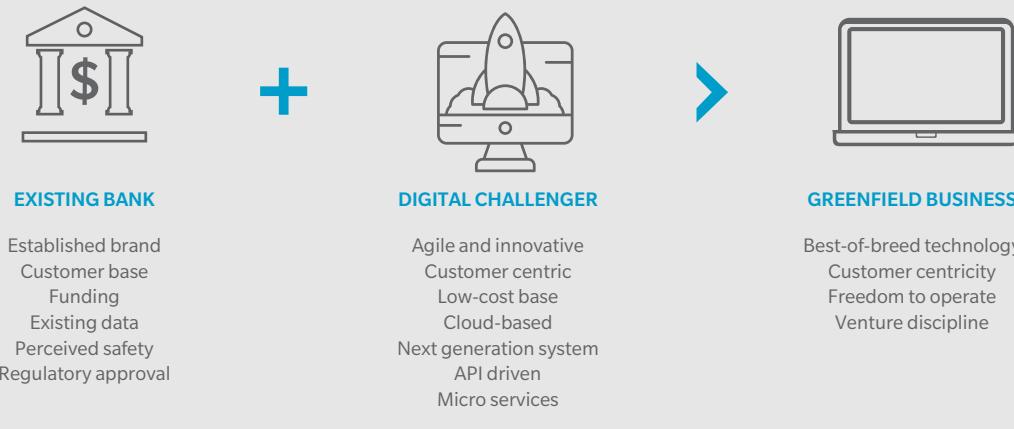
There are ways for incumbents in the banking industry to tackle the disruption being seen. Banks need to be flexible and can potentially embed third parties within their bank

platforms or originate and/or embed their own products on third party platforms. Additionally, with scalable and secure technology platform they can also support or launch “micro” banks or even provide ecosystem customers with third party apps.

Traditional players can look at greenfield as a transformation catalyst for change. In fact, it is now possible to deliver a major greenfield business with an experimentation flywheel approach in 12 months, starting from an experiment phase, to pilot, scale up and finally run it.

### GREENFIELD APPROACH

Source: Oliver Wyman, 2019. The State of the Financial Services Industry 2019: Time to Start Again

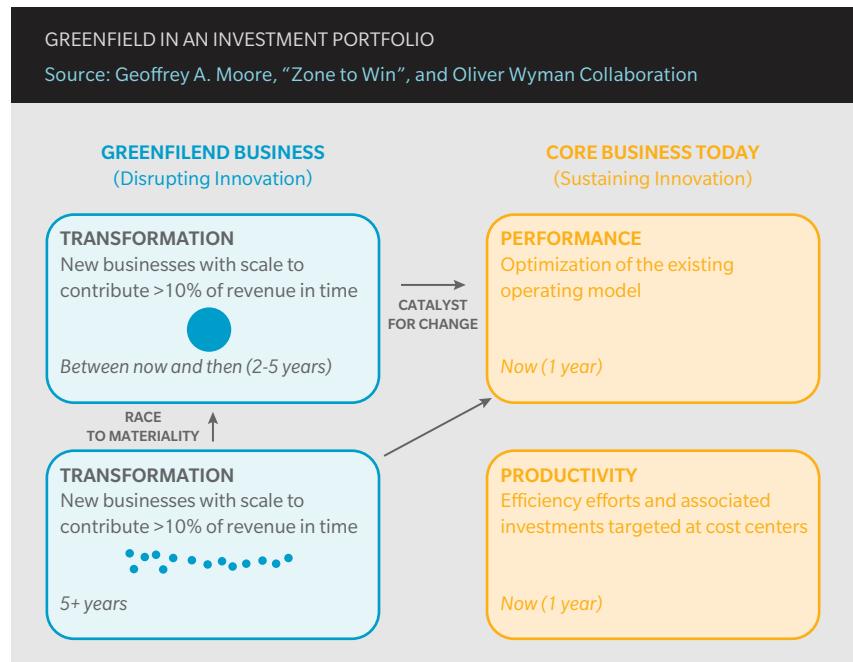


The return on each investment will be uncertain, but the funding required is stage-gated. The investment funds allocated are also with the scope to scale up the most promising ideas.

Additionally, governance is no longer about big multiyear budgets with fixed, micro-detailed deliverables. Shareholders can see how the portfolio aligns with the company strategy, both in terms of growth or addressing disruption threats.

The rapid pace of digitalization and the infiltration of new tech players into the financial sector is compelling incumbents to get onboard the tech bandwagon or risk missing out in the current digital era. Incumbents will increase their chances of holding their own if they start taking action now.

\*More about the greenfield approach can be found in Oliver Wyman's *State of the Financial Services Industry 2019 report*.



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# HOW BANKS CAN BECOME BLOCKCHAIN INNOVATORS — OR FALL BEHIND

Igor Khmel

Founder and CEO of BANKEK



At its simplest, a blockchain-based currency such as bitcoin is a means of value storage and transfer. This makes it similar to a traditional currency, although with some current limitations. Some analysts focus on these limitations and declare that bitcoin is useless if it is not faster and easier to use than credit, but this is an extreme position. With the throughput and the scalability initiatives [currently underway](#), one will soon be able to use bitcoin for larger purchases, payroll, purchasing inventory, and much more.

So how does this emerging technology matter to banks? Banks can make the strongest and most immediate impact in settling

global financial transactions with the assistance of the blockchain. While this may sound complex, it is staggeringly straightforward: Simply, banks can make a blockchain, make a currency, and enjoy greater liquidity.

## BANKS SHOULD BUILD THEIR OWN BLOCKCHAIN CURRENCIES

To create their own blockchain-based currency, banks need to create a permissioned blockchain: a nonpublic blockchain where specific identifiable participants are only allowed to perform certain actions. Then, banks would power this blockchain with a native currency

and allow market-makers, who could be the banks themselves, to serve as the intermediary. These participants would absorb the residual spread risk and be compensated accordingly.

The native currency would be comparable to [Ripple's implementation of XRP](#), which can complete transactions in 3-4 seconds with minimal costs.

With this implementation of blockchain among banks, Bank A could send almost any amount of U.S. dollars to Bank B overseas in a few seconds—virtually for free.

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## INCLUDING BLOCKCHAIN CURRENCIES IN FOREX

An obstacle to realizing this vision is the lack of an environment in which exchange occurs smoothly. The current process is cumbersome, as blockchain networks can only send their own native currencies: In the aforementioned Ripple scenario, the banks still need to maintain credit lines with one another, since the delivery was in Ripple's XRP relative to U.S. dollars. That value then has to be converted back into a [fiat currency](#).

This is where market-makers or calculation and compression agents become important. They can streamline this whole process.

Market-makers who quote buy and sell rates for FX pairs would simply add USD/XRP and GBP/XRP to their lists. This would grow liquidity over time to facilitate extremely rapid cross-border transactions since there would be no hiccups in the process of value transfer.

Imagine a business in San Francisco sending payment to a distributor in Taiwan and the money being confirmed and cleared in 3-5 seconds. There is very little stopping this scenario from becoming a reality—and the banks that implement these systems will be able to attract new business quite easily. This will provide a nice return on investment for the capital expenditures involved in creating the system.

## REAL-WORLD ASSETS STILL MATTER

But even elegant systems are not uncomplicated. For example, banks often deal with real-world assets whose existence and condition must be confirmed and then converted into a unified value that can then be represented on the blockchain. Otherwise, when banks and other financial institutions attempt to use blockchain as a method of exchange, there will be no trust in the underlying assets providing and establishing the value.

Thankfully, [a few solutions](#) have been proposed that use existing Internet-of-Things technologies as well as artificial intelligence to confirm the existence and condition of real-world assets. In these instances, to deal with the increased complexity of assets, banks could partner with technology providers to facilitate trade finance, commodities trading, interest rate swaps, and other derivatives seamlessly on the blockchain.

Further, distributed virtual machines such as Ethereum allow fintech firms and banks to create protocol layers to facilitate the [tokenization](#)—the conversion of real-world value into a digital value that can be easily expressed on the blockchain—of tangible assets and cash flows, which would all be backed up by the tokenization process. This would serve as an enhanced digital form of securitization and optimize the liquidity of the assets.

## BANKS CAN BE THE FORERUNNERS

Beneath all the technical esoterica, one thing is clear: Banks need to be the front-runners in this space, or they will have to surrender their market share to their more innovative competitors.

Streaming and mail-delivered movies decimated the movie rental industry. Banks don't have to suffer a similar fate; they can adapt. For now, the banks are dominant, but as technology develops, blockchain and its associated currencies will find more and more of a foothold. By accepting this truth, banks can innovate and compete by creating their own protocols and blockchains. Banks that choose to ignore the emerging decentralized economy will find themselves at a distinct strategic disadvantage in the global market.

*This article first appeared on BRINK on August 28, 2018.*

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# IS THE FINANCIAL SECTOR IN ASIA FACING A KODAK MOMENT?

**Aditya Haripurkar**  
Founder and CEO of HitKey



The recent explosion in fintech activity in Asia has created a dilemma for traditional financial institutions, service providers and regulators: whether to collaborate with the fintechs as long-term partners, or to limit collaboration and invest in their own digital restructuring activities.

When traditional financial services providers partner with fintech companies, they usually do it to get access to new or underserved markets, to deliver their services over

an innovative platform, to improve customer experience, or to benefit from cost savings and increased productivity.

There have been successful examples of collaboration in Asia such as [Active.AI and Axis Bank](#) for chatbots; [soCash and Standard Chartered Bank](#) for cash withdrawals in Singapore; and [Bambu and Franklin Templeton Investments](#) for robo-advisory platforms.

However, financial services providers and regulators are conservative in approach and tend to be plagued with hierarchical structures, slow decision-making and legacy systems. Fintech companies, on the other hand, are nimble outfits with the ability to execute quickly, but they come with limited resources in terms of team size and capital backing. This cultural and structural mismatch introduces complexities in the relationship between a fintech and the incumbent.

The incumbents, on their part, have attempted to bridge the divide by launching incubation and accelerator programs, while regulators have introduced sandbox-based initiatives to encourage new innovations in a controlled environment.

Despite these initiatives, more can be done to facilitate collaboration between fintechs and the incumbents, since fintechs can make traditional financial services stronger. Some additional measures include:

1. Publishing business problem statements for fintechs to tackle on an ongoing basis
2. Clear awareness of the different stakeholders for each business problem and the point of communication
3. A sandboxed environment being made available to fintech companies of any size
4. Streamlining internal processes for faster reviews of applications that leverage open banking APIs

Despite the success of many fintech-incumbent collaborations, some incumbents choose to limit collaboration and instead invest in internal restructuring activities to better serve customers and fend off competition. While some of these restructuring efforts can be successful, there are potential pitfalls of this approach as well.

#### THE STAGES OF DIGITAL TRANSFORMATION IN A FINANCIAL INSTITUTION

Source: Cisco, Digital Transformation for the Retail Banking Industry



##### Enables

- IT agility and increased productivity
- Reduced technology costs (OpEx and CapEx)
- Faster response times to customer needs



##### Differentiates

- New user experiences, products and services
- Accelerated product, services and business process innovation
- Distributed connectivity and intelligence



##### Defines

- Business model innovation, industry transformation
- Machine-to-machine, augmented decisions, self-learning analytics
- New growth and constant innovation

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## INCUMBENT AND DIGITAL TRANSFORMATION

To provide better digital experiences to customers and to fend off competition, financial institutions have undertaken internal digital transformation exercises. One aspect of these exercises is to train internal employees on having a digital mindset and a customer-centric approach. Financial institutions have also formed mini “startup” units within their organizations to make these units think and function like startups. Other initiatives include securing key hires from technology companies and startups to facilitate an internal culture change and streamline functions and processes.

Banks such as [DBS in Singapore](#) and [Wells Fargo in the U.S.](#) are prime examples of financial institutions that have been quick and early to respond to industry changes and launch internal initiatives. Unsurprisingly, these banks have led in providing superior omnichannel customer experiences and remain at the forefront of digital transformation.

## WHAT SHOULD INCUMBENTS FOCUS ON?

Despite the above internal initiatives, can an incumbent afford to stay away from collaboration with fintechs? The answer lies in the ability of a financial institution to answer the following questions:

1. Does the incumbent have the necessary skills and resources internally to innovate new products and create new experiences for customers?
2. Does it have the ability to quickly test new ideas and concepts?
3. Does it have the ability to launch new products in a swift and nimble manner?

Since a majority of financial institutions retain legacy structures and systems, a transformation of systems, processes and thinking is likely to be a slow and gradual process. At the same time, incumbents do not want to be lagging behind in digital innovation, and hence close partnerships and collaborations with fintechs remain the order of the day.

Financial institutions view the biggest technology platforms of the world such as Amazon, Facebook, Apple, Google and Alibaba as the biggest source of disruptors.

Adopting a continuous process of swift and strategic partnerships with fintech innovators and adopting an open and collaborative framework in the form of API platforms and sandbox environments are likely to keep financial institutions relevant for customers.

But in the absence of constant innovation and rethinking of products, services, and processes, who would bet against the banking industry facing a [Kodak](#) or [Blockbuster](#) moment?

*This article first appeared on BRINK Asia on February 15, 2018*

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# FROM ZERO TO \$1 BILLION: P2P LENDING IN INDONESIA

Iwan Kurniawan

Co-founder and COO of Modalku



In late 2015, when I first presented my business plan to a group of financial professionals in Indonesia, it was met with strong skepticism and apathy. “Do you understand Indonesian borrowers? They will default on you,” or “Are you sure OJK (the regulator) will support this?” were common refrains. The journey to launch a digital-financing platform seemed treacherous back then.

Fast forward three years, the Indonesian P2P lending industry is now a billion-dollar industry, having disbursed an [estimated \\$1 billion since 2016](#). Over the same period, more than two million borrowers (companies and individuals) and 150,000 lenders have also been served by the industry.

The rapid growth of P2P lending has led to investments by reputable global and local investors, such as [Sequoia Capital](#), [SoftBank](#) and [Mandiri Capital](#). This has been no

mean feat, given the numerous regulatory, risk management and growth challenges the industry has faced along the way.

## LAUNCHING A DIGITAL-FINANCING PLATFORM WITHOUT REGULATION

Launching a digital financing platform in 2016 was simple; there were no regulations to comply with or industry standards to follow. No regulations may sound like a good thing for a startup, yet countries that waited longer to regulate P2P lending, such as China, [have seen difficult outcomes for the industry](#). In the case of China, years without regulations have meant that it is not uncommon to see platforms shut down due to fraud and poor risk management, taking investors’ money down with them. While regulation is easily perceived as

anti-growth, basic regulations related to consumer protection and risk management can, in fact, play an enabling role as it fosters the sustainability of the industry.

As a fintech platform, there are benefits to spending time at the start engaging with the financial services regulator and government institutions, while educating the public and media. The message is clear and consistent: Fintech is the answer to financial inclusion, yet fintech will only thrive under a balanced set of regulations. Recognizing the need to regulate, in late 2016, Indonesia’s Financial Services Authority announced its first set of regulations for fintech, which has since set a solid foundation for the digital financing industry.

## NAVIGATING THE RISKS OF SME FINANCING

The financing gap in Indonesia, especially for MSMEs (micro, small and medium enterprises), is as large as [\\$75 billion](#). Yet, serving small businesses is often challenging from a risk-management standpoint. The majority of Indonesian SMEs have limited or poor financial management practices and limited or no credit history, making it difficult to underwrite credit. Solving such a challenge is not straightforward, with different companies adopting different approaches.

The first school of thought is about leveraging data and technology in the most impactful way possible. By using alternative data provided by loan applicants, such as online transactions and mobile-use behaviors, it is possible to discern through the quality of the loan applicants. It is equally important to have the methodology and habit to conduct tests, measurements and iterations on a regular basis on various underwriting approaches to determine the optimal methods. Putting technology, data and disciplined testing together, it is possible to navigate risk-management challenges so as to serve more SMEs.

The second school of thought could be called the “bank-plus” approach. In short, the bank-plus approach is about adapting a credit underwriting approach that has worked well at banks and adjusting parts of it to make it work for the underserved market. Adjustments could include changes to the product design or the replacement of specific document or loan requirements, without compromising on risk management. Such an approach works well especially when the financing

arrangement is larger and more complicated and where a more robust assessment approach is still the most reliable. Under this situation, it is still imperative to review traditional information and data, such as bank statements and invoices, to approve credit for SMEs.

## SCALING TO \$1 BILLION

One would think that in a country where smartphone penetration is high, marketing to SMEs would not be difficult, but that is not the case in Indonesia. Reaching \$1 billion was a three-year journey filled with challenges and surprises. One of our more surprising findings was that, despite the penetration of smartphones, most small-business owners are not savvy users of the pocket machine. The fact that the majority also have a weak or basic understanding of financial literacy exacerbates the problem. So how does one scale a startup when most of the potential users are not easily accessible?

Part of the answer lies in partnerships, a channel that seems to be working out quite well for industry players. It is possible to have collaborations with e-commerce and payments platforms to deliver financing to merchants, leveraging transaction information on these platforms. In addition, there are opportunities to work with traditional supply chains, leveraging their networks and track records to serve SMEs operating in their distribution channels and managing risk by using data and technology. Such partnerships allow fintech startups to reach a wider audience while keeping credit risk manageable.

Yet, partnerships are only one part of the puzzle. In a new industry like ours, branding has also been

instrumental to startups’ ability to scale. Most of Modalku’s lenders, for example, come organically to our mobile and web platforms, and compared to our initial days, most of our borrowers now know Modalku before they even come to us, influencing their decision to borrow. This was made possible through constant engagement with the public and media, including publishing and distributing relevant content on a regular basis.

## REALIZING FINANCIAL INCLUSION

Despite the rapid growth of the industry, there is still a long way to go in achieving greater financial inclusion. After all, with \$1 billion of loans disbursed, P2P lending has only closed a tiny part of the \$75 billion financing gap that exists in Indonesia. Credit data infrastructure remains weak, and SMEs—which are spread across various islands of Indonesia—remain largely weak in managing finances professionally and are less-than-savvy users of technology.

This, in turn, implies continued challenges and potential opportunities for startups in this space. To move forward, fintech companies are increasingly investing more into market education, product development, and credit assessment technologies. With the backing of a supportive regulator, major technology investors, and a slowly maturing industry, it will only be a matter of time before we see the industry reach a new high for financial inclusion.

*This article first appeared on BRINK Asia on November 13, 2018*

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## P2P LENDING: LESSONS FROM ASIAN GOVERNMENTS

Ajit Raikar

Co-founder and CEO of Validus Capital



The digital transformation which has swept industries from retail to transportation has now set its sights firmly on the financial services industry. Though financial services have been computerized for several decades, a true transformation has been quite elusive. That is, until the rise of fintech and alternative platforms promoting peer-to-peer (P2P) lending and financial inclusion.

Southeast Asia presents a massive opportunity for P2P lending platforms. This is because of the many advantages that P2P lending platforms provide, which include lower transaction costs

and enhanced convenience for end users. Coupled with Southeast Asia's high mobile subscription rates, Internet penetration rates and a young population, this is a recipe for success. With the high level of connectivity, both lenders and borrowers can be connected in a remarkable cost-efficient manner. While P2P lending is only a small fraction of overall loans disbursed, its rising prominence in Southeast Asia cannot be ignored.

Besides, the digital transformations of other industries have made customers more trusting of and comfortable with tech-based

financial solutions. It has also increased their demand for immediacy and customized products and services.

### LESSONS FROM P2P LENDING IN CHINA

China's retail loan penetration rate is around 20 percent, among the lowest in the world. Its banking sector has typically prioritized state-owned enterprises and influential borrowers over SMEs and the broader retail market. This means that a large segment of the population is

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underserved – although China's average income is relatively low, the size of its middle class is roughly similar to the population of Europe.

Responding to the market gap, over two thousand peer-to-peer lending platforms set up resulting in world-beating growth. [According to Bloomberg](#), there were outstanding P2P loans to the tune of RMB1.22 trillion (\$180 billion) in December 2017, ballooning from almost nothing in 2012.

What happens when there is a lack of regulatory oversight, an inability of P2P lending firms to access credit scores and the prevalence of operators who do not know how to run a P2P platform properly? Add to this mix lenders who quickly jumped at the opportunity for high returns without proper due diligence. The result was a disaster, with widespread defaults and the loss of billions of dollars' worth of investor savings. There was widespread anger and several protests which forced the government to step in and purge the industry. "P2P finally turned from 'peer-to-peer' to 'police-to-people,'" [tweeted](#) one disillusioned investor who was unable to reach the protest site due to government lockdowns.

This resulted in thousands of P2P lending platforms that were unable to repay investors, either

halting operations due to police investigations or just fleeing with the remaining money. In 2018, the number of P2P operators [dropped by more than 50 percent](#) to 1,021 and no new firms have entered the market since August. By the end of 2019, that number could drop to as few as 300 firms.

## FROM CHINA'S P2P LENDING WINTER TO SOUTHEAST ASIA'S P2P LENDING SPRING

There are several examples which highlight that first-mover advantage may not be as powerful as some entrepreneurs think. Google was not the web's first search engine, Amazon was not the first online bookstore, and Facebook was not the first social media platform. China happened to be one of the first countries to embrace P2P lending massively.

Recent data shows that the five most populous Southeast Asian countries—Indonesia, Philippines, Vietnam, Thailand and Myanmar—[together have over 90 million youth or close to an average of 17 percent of each country's population](#). Out of this, 49.8 percent of the population is urban and the median age in Southeast Asia is 28.8 years. This generation is considered to be the

most productive, digitally enabled and open to change. According to a report on [accelerating financial inclusion in Southeast Asia](#), more than half (54 percent) of the adults in the poorest 40 percent of households remain unbanked. Access to credit from formal channels and use of insurance solutions are significantly lower. Only 18 percent of adults use a bank account to receive wages and pay utility bills, and just 27 percent of adults save formally and 11 percent borrow formally.

The government as well as the private sector are stepping in to tackle this gap. In Indonesia for instance, initiatives to support the sector by the regulators include the [setting up of the Fintech Office](#), the [launch of the National Payment Gateway](#), and the [establishment of the Fintech Regulatory Sandbox](#) for P2P lending services.

"One of the key priorities for the Indonesian Government is to create a sound and strong financial sector that is easily accessible, even for those in remote areas. This is why microfinance is becoming so important; so we can create access to formal financial products," [said](#) Mulieman Hadad, Chairman of the Otoritas Jasa Keuangan (OJK), the Indonesian Financial Services Authority

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Here lies the key to P2P lending success in Southeast Asia. It is only when various stakeholders from across the board—the government, P2P lending platforms and investors—come together in a more integrated way that the concept can be genuinely successful. And, this is already happening across Southeast Asia.

## DIGITAL TRANSFORMATION PROVIDES SIGNIFICANT OPPORTUNITY FOR LEGITIMATE PLAYERS

Many banks consider the growth of P2P lending as direct competition, as was the case in China. However, in Indonesia and other Southeast Asian countries, the fintech industry will support and run parallel to banking. While banks were wary at the early stages of P2P lending, with increasing regulations, large banks are significantly more inclined to partner with these platforms.

Hence it is crucial that P2P players demonstrate the right balance between protecting the lender through a robust risk management framework, good level of transparency on loans and high

service levels for both lenders and borrowers. This will help ensure sustainability for the players and a viable market where digital trust can be established. This is where the power of digital transformation comes in.

Digital tools powered by an open data sharing architecture are enabling fast, low-cost, and convenient customer identification and verification. This is especially so when the processes are powered by unique national IDs, a real-time verification infrastructure, and a supportive regulatory framework featuring tiered KYC and cross-product KYC. Alternative sources of data such as data from payment transactions and telecoms providers, combined with analytics are improving customer profiling, credit risk assessment and fraud detection. However, there remains plenty of scope to make open data sharing more accessible and useful for all the stakeholders.

Apart from having a digital and open data sharing architecture, a strong regulatory framework needs to be enforced to ensure that the investor's money is protected. Firms should be required to meet a minimum capital requirement and the regulators should also ensure that if a platform collapses, there is a system in place

for loan repayment to continue and paid to the investors. These are a few examples of how the government can provide good support to the sector.

The new forms of alternative finance will profoundly shape Southeast Asian economies for decades to come. They promise to challenge the regulatory environment, test the political will and question our ability to embrace change.

There is no doubt that there are many potential vulnerabilities that might impede the future growth of P2P lending in Southeast Asia. These pitfalls need to be identified, understood and prudently managed for the long-term viability of the sector. To have long-term, sustainable and inclusive growth, the industry needs to adhere to best practices and cultivate trust, while continuing to innovate in products and services that provide returns to investors.

*This article first appeared on BRINK Asia on February 26, 2019*

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# HOW TECHNOLOGY DRIVES DIGITAL TRANSFORMATION

## THE DIGITAL ACCELERATOR: REVVING UP GOVERNMENT IN ASIA

**Vitor Gaspar**

Director of Fiscal Affairs Department at International Monetary Fund

**Chang Yong Rhee**

Director of the Asia and Pacific Department at International Monetary Fund



Asia's digital revolution shows no signs of slowing down. From e-commerce giants, like China's Alibaba and Japan's Rakuten, to ride-hailing and digital payment tech startups, like Indonesia's Go-Jek and India's Paytm, and the widespread use of industrial [robots](#) for manufacturing, digitization is changing the way the region's businesses operate

It is also transforming the way governments operate. Thanks to digitization, policymakers have

greater access to timely and accurate data. With better information, governments can design and implement better policies, such as improving tax compliance and the efficiency of government spending.

Indeed, Asia's governments' use of digital technologies in public finance management is directly transforming the lives of millions of people. But to fully reap the digital dividend, policymakers will need comprehensive policy actions on multiple fronts.

### BENEFITS FROM E-GOVERNMENT

Critically, digitization can make governments fairer and more efficient. India's [experience](#) with the Aadhaar is a case in point. It is the world's largest biometric identification system that provides a unique 12-digit ID number for 1.2 billion residents in India.

The identification system links to various social programs, including

subsidies on liquefied petroleum gas. In 2013, the government linked Aadhaar beneficiaries' numbers to the liquefied petroleum gas program, which helped prevent claims from ghost beneficiaries or multiple claims. In addition, the government transferred subsidies directly to the Aadhaar-linked bank accounts, bypassing dealers and improving its support of those in need.

Additionally, the Philippines' digital registry—Listahanan—serves as a gateway for as many as 52 social programs, ranging from cash transfers to emergency assistance, with 75 percent of the population registered. In Indonesia, digital social registries appear to have also helped expand the coverage of conditional cash transfer programs.

Even in countries where digitization is in its infancy, initiatives are on the rise. Digitization can improve public service delivery. For instance, [Bangladesh](#) uses smart water meters to monitor water quality. Digital initiatives can also help in public financial management—for example, [Bhutan's](#) e-Tool has helped standardize project appraisal and selection for public investment.

The benefits go beyond spending. On the revenue side, e-filing, e-payments, and e-customs initiatives in tax administration are common in Singapore, [Malaysia](#), Vietnam, Indonesia, and Thailand, and they are paying off. In Malaysia, ongoing efforts in e-filing and e-payments have reduced compliance time by 30 percent.

## CHALLENGES OF GOING DIGITAL

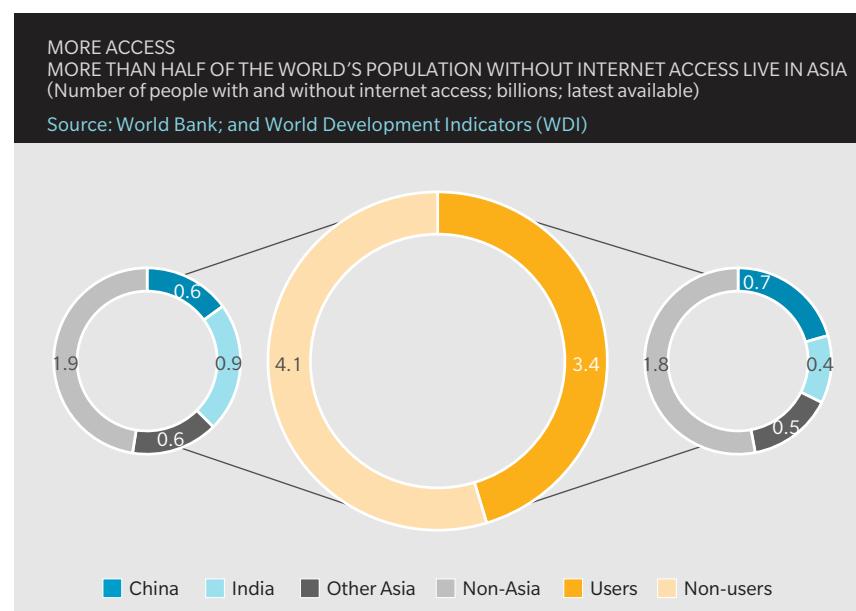
These digital initiatives bring large gains to governments, but there are also critical and urgent challenges to address.

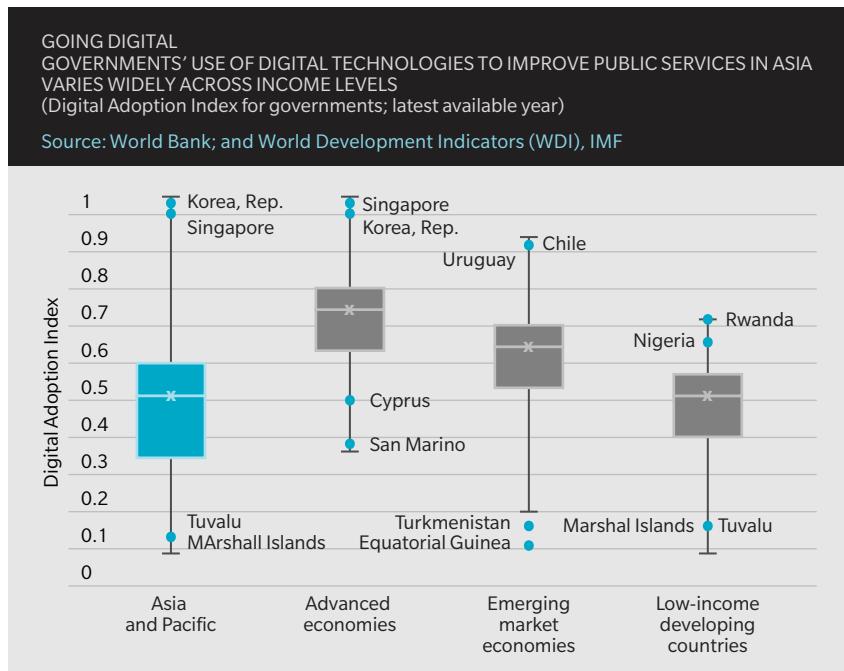
First, the popularity and necessity of digital technologies across the region mean that more people are at risk of cyberattacks. Hackers have used their digital skills to steal private information and disrupt government functions. A digital world is also a target-rich environment for fraudsters, including in [cryptocurrency](#) exchanges.

Second, digitization of the economy could, in principle, reduce tax revenues. For example, instead of staying in hotels that charge a tax,

tourists may use digital platforms to stay in private homes. These small-business transactions may fall below the thresholds for taxation—resulting in loss of revenue for the government. The digital economy also makes it easier for tax avoiders to move profits abroad, out of reach of tax authorities.

Third, more than half of those without access to the Internet live in Asia. While broadband subscriptions have increased in the region, there is a [widening gap](#) between leaders and their less-advanced peers. For example, less than one percent of Myanmar's inhabitants have access to fixed broadband networks compared to over 25 percent in Singapore. E-government can only work if people have access to it.





Finally, some countries have leapt ahead, while others are far behind. South Korea, Singapore, Japan and Malaysia rank in the world's top ten in terms of digital government. India outperforms advanced economies, on average, while China, Sri Lanka, Indonesia, and Thailand outperform their emerging-market peers.

At the same time, small islands and fragile states have struggled to make significant advances in e-government. In Myanmar, Tuvalu, and the Marshall Islands, digitization still needs a boost. Ongoing applications of digitization in the region, far-reaching and diverse, show such a boost is possible.

## OVERCOMING DIGITAL ROADBLOCKS WILL REQUIRE SHIFTING GEARS

The good news is that the right policies can help governments prevent fraud and cyberattacks, as well as boost digitization benefits. Singapore and Malaysia, for example, have established agencies to oversee cybersecurity strategy and operations.

Governments should also remain vigilant and protect their revenues. This requires governments to monitor areas where digitization impacts revenues. For example, if digitization shifts some services to smaller firms that fall below the tax threshold, the government may choose to revisit and change current thresholds to allow them to tax similar activities.

Further advancing digitization can also improve [tax collection](#) and, as a result, revenues, by making it easier for governments to collect

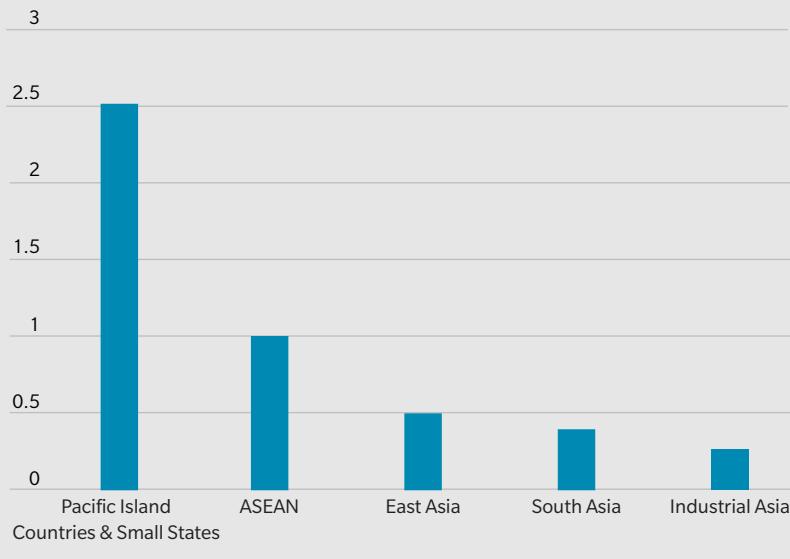
data on financial transactions. This is particularly true for developing and emerging economies, whereby closing half the distance to the digitization frontier could bring in more than one percentage point of GDP of value-added tax revenue in ASEAN economies. Countries with populations that do not have reliable access to the Internet should enable early investments in digital infrastructure, like broadband technology, to ensure inclusion and to reap the benefits of digitization.

#### E-POLICIES

MORE GOVERNMENT OVERSIGHT OF DIGITAL TECHNOLOGY USAGE IN EMERGING AND DEVELOPING COUNTRIES IN SOUTHEAST ASIA AND THE PACIFIC ISLAND STATES CAN BRING SUBSTANTIAL GAINS IN VALUE ADDED TAX REVENUE  
(Estimated VAT revenue gains from closing half the distance to the digitalization frontier; 2016; percent of GDP)

Source: Fiscal Monitor Spring 2018, IMF; and staff calculations.

Note: ASEAN=Association of Southeast Asian Nations.



Countries with populations that do not have reliable access to the Internet should enable early investments in digital infrastructure, like broadband technology, to ensure inclusion and to reap the benefits of digitization. For all countries, this would require building fiscal institutions to manage the design, planning, budgeting and implementation of policies.

With these policies, Asian economies would continue to drive the digital revolution and advance the frontier, not only for themselves, but for other government innovators across the world.

*This article first appeared on BRINK Asia on October 11, 2018.*

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# REAL-TIME RISK MANAGEMENT AND NEXT-GENERATION INSURANCE

**John Drzik**

President, Global Risk and Digital at Marsh



A confluence of trends is enabling businesses and the insurance industry to move toward a revolutionary new approach: real-time risk management.

Managing risk in real time offers the potential to both reduce risk and transfer it more effectively. It means businesses can have an up-to-the-minute view of their changing risk exposures—and take actions to mitigate them—and that the insurance industry no longer needs to rely only on historical data to price risk.

What makes real-time risk management possible? Three concurrent developments are starting to reshape the risk landscape:

- New real-time data streams. From telematics to satellite imagery to wearable technology to property sensors, there are a growing number of emerging technologies generating new data streams that provide dynamic signals with risk content. Mobile phones are also a growing source of risk signals, especially as more

and more of them are run on high-speed wireless networks. By 2025, the world will have 1.2 billion 5G connections, and 4G will reach 5 billion connections, according to the GSM Association, a global trade association of mobile telecommunication operators. This means the majority of the global population will have access to the advanced wireless networks that can power real-time data streaming.

- Analytics driven by artificial intelligence. Advances in AI and machine learning now enable the processing of large-scale data streams at a speed significantly faster than previously possible. AI-powered analytics can distill the expanding set of real-time data signals into a dynamic view of risk that can be used to trigger mitigating actions or consideration of risk transfer alternatives.
- New insurance products. New policies that adjust price or coverage in relation to changing risk signals are creating incentives to manage risk more actively. The most developed area is personal auto insurance, where some policies now provide premium credits in relation to telematics-based information on driving behavior. While still embryonic, innovative insurers are exploring the potential to create next-generation policies in other property and casualty areas that use new data streams to adjust price or coverage dynamically and that also use real-time streams to process claims more rapidly.

## ENABLING BETTER RISK ASSESSMENT

Advances that would have seemed like science fiction barely a decade ago are reality today. Consider just a few examples of emerging technology that are contributing to real-time or near real-time assessment of risk.

**TELEMATICS.** From passenger cars to trucks to cargo ships, telematics are being deployed to improve transportation safety by actively identifying risky driving behaviors and conditions. Accident rates could be reduced further if insurance products provided price incentives for individuals and businesses to use the telematics feeds to manage their risk more actively. Commercial insurance policies can be developed to reprice motor or marine cargo insurance in real time based on the behavior of the operator, the roads or seas on which the cargo is traveling, the value of the cargo, weather conditions, and other dynamic variables. Fully autonomous vehicles have the potential to create a step-change decrease in risk—and the use of the autonomous features can be encouraged through an insurance policy that shifts in price based on a real-time feed signaling whether the autonomous capabilities are on or off.

### THE INTERNET OF THINGS.

Current projections are that 25 to 30 billion connected devices will be deployed by 2020 (up from more than 7 billion today). From embedded sensors that enable “smart” buildings or “smart” homes, to [wearables](#) used on construction sites or manufacturing operations, connected devices generate alerts that can warn users of unsafe conditions and trigger them to change their behavior, perform maintenance or take other actions that help to prevent accidents. Until 1986, [canaries](#) alerted coal miners to the presence of deadly fumes. Environmental sensors perform that task today in real time, improving safety above and below ground. Connected devices are often installed for reasons other than risk management—for example, property sensors might be implemented to improve energy efficiency, and wearables might be deployed to improve productivity. However, the same sensors often carry risk content that can be used to improve risk mitigation or transfer.

### CYBERSECURITY TECHNOLOGY.

Cyber risk continues to escalate, and an expanded set of technologies is being deployed within businesses to help their information security professionals prevent or respond more effectively to cyberattacks.

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Many of these new technologies generate data streams that can also be processed with advanced analytics into a moving view of cyber exposure. Risk professionals can then use these views to quantify potential loss scenarios more actively and consider the economics of risk transfer with greater precision.

**VISUAL INTELLIGENCE TOOLS.** Satellites, aircraft and drones are capable of deploying high-resolution cameras and sensors that provide additional real-time data streams. More powerful machine learning techniques can now process these images into relevant real-time risk information. For example, the combination of property images and high-frequency weather feeds can provide a rapid and accurate view of property damage, which can be used for high-speed claims processing. The same visual intelligence technology, combined with property IoT data and AI-based weather forecasts, can provide a forward-looking view of property risk for a home or building that can be used in insurance pricing.

## THE ROAD AHEAD

Real-time risk management technologies will not eliminate risk, but can increasingly provide businesses and individuals with actionable intelligence to manage and reduce their risk—significantly, in some cases. The advent of new data streams and powerful analytics also opens the door to innovation in risk financing, whether that takes the form of innovative coverage from insurance providers, an expanded and creative use of a captive, or tapping new products from alternative capital markets.

Insurance is likely to remain the primary risk transfer vehicle for these risks. Traditionally, insurance premiums are determined based on historical data. Underwriters and actuaries compile and use past data sets to look for loss patterns and make projections about future outcomes. Emerging data sources can now be leveraged to provide a continuously updated view of the underlying risk. Insurance providers can use this real-time data and evolving data science to make more

dynamic projections about future outcomes and develop risk-based premiums that are calculated based on the new approach.

To date, risks traditionally covered by insurance could not be managed this dynamically. However, the prospect for real-time risk management is now on the horizon. By harnessing real-time data streams and analytics driven by artificial intelligence, businesses and the insurance industry can dramatically shift how we manage risk and think about insurance. We've barely scratched the surface, but the potential benefits for identifying, assessing and managing risk in real time are already coming into view.

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# TECHNOLOGY'S ROLE IN FINANCIAL INCLUSION: HYPE OR HOPE?

**Geoffrey Prentice**  
Co-founder of Oriente



More than a third of the world's adult population, or some 1.7 billion people, have little or no access to formal financial services. In Southeast Asia, the problem is even greater, with [more than 70 percent](#) of the region's estimated 640-million population remaining unbanked and a majority of them being from low- and middle-income segments.

Research by the Asian Development Bank estimates that addressing this opportunity could increase gross domestic product by between [9 percent and 14 percent](#), even in relatively large economies, such as Indonesia and the Philippines.

With growing income levels, rapid technological innovation and the proliferation of smartphones, financial inclusion is now a key driver for public and private financial institutions that see it as their mission to help the unbanked to more easily access financial services and the enormous economic opportunity it brings with it. For banks alone, closing this gap in emerging markets could generate more than [\\$380 billion](#) in annual revenues.

The socioeconomic impact potential from financial inclusion can be game-changing in developing markets. It unlocks greater access to fundamental services, mitigates

risk, encourages savings, helps people build financial identities and participate in the economy (many for the first time), and supports MSMEs.

Across emerging Asia, many people and small-business owners don't have bank accounts and have never been approved for a loan or service from a formal financial institution. As a result, for them, financial exclusion is almost guaranteed. They can't get access because they have no credit profile, and they can't build a credit profile because they've never been approved for a loan. They are credit-invisible and stuck in a black hole. As a result, they are forced to look elsewhere. And tens of millions of them do.

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In the Philippines, for example, only [12 percent of adults borrow from a formal financial institution](#), and [over 40 percent](#) rely on informal lending sources. While in Indonesia, [over 77 percent](#) of borrowing is still conducted informally.

Moreover, in many cases, people have to pay more to access these informal services than those who are fully banked, often in the form of exorbitant interest rates, personal collateral, and unscrupulous business practices. But there is hope.

For greater inclusion, technology and data have a vital role to play in building a new, more equitable, and digital infrastructure that will enable millions—trapped by the limitations of existing financial systems—to break away and unlock their true economic potential. And this opens up opportunities for companies.

## CONNECTING MORE PEOPLE

The popularity of mobile phones supported by the availability of affordable smartphones and faster and more reliable networks have fueled the unprecedented growth of Southeast Asia's Internet user base.

Developing markets especially have demonstrated an insatiable appetite for new technologies. Due to this, mobile penetration in markets like Indonesia, Vietnam, Cambodia, and Laos have seen an [increase from 5 percent to more than 70 percent](#) in less than a decade.

According to the [2018 e-Economy Report](#), there are more than 350 million Internet users across ASEAN—90 million more than in 2015, and this is the most engaged user base in the world, spending more time on their devices than anywhere else.

As a result of their ubiquity, these hundreds of millions of mobile devices can—and already—do serve as a rich potential source of data.

Today, both existing and new-age financial institutions are looking to leverage these data sets and harness the power of next-generation technology to expand the reach of affordable and efficient financial services to more people in even the most remote areas. For companies, this translates into significant profit opportunities, while also doing good.

Mobile technology allows companies to bypass the hurdles imposed by traditional banking because it breaks down geographical constraints while delivering greater convenience, affordability and security—whenever and wherever consumers demand it.

## BUILDING FINANCIAL IDENTITIES USING ALTERNATIVE DATA

Advances in next-generation technologies like artificial intelligence, machine learning, data science, and predictive analytics allow companies to challenge the status quo. These technologies help analyze thousands of traditional and

nontraditional data signals to provide a robust alternative to traditional credit scoring and risk assessment.

When you consider the scenario, the writing on the wall couldn't be clearer.

While globally, only a third of adults are covered by a credit bureau, the situation is far grimmer in emerging markets like the Philippines, where the public credit bureau is still in development and private bureaus cover less than [10 percent of the adult population](#).

For people in these markets, who have for decades been underserved by traditional financial systems and preyed on by loan sharks, this comes as a welcome relief.

[Cashalo](#), a mobile-lending app in the Philippines, is one such example. It was built to unlock financial access and opportunity by easing access to credit. It uses technology to assess people's financial capacity based on smartphone data, including social connections and personal identifiers. These signals serve as a proxy for traditional "offline" data, giving people an opportunity to build a financial identity, regardless of their "banking" history.

The opportunity for technology to power a more financially inclusive society is clear, but cultivating responsible financial habits among consumers is equally important. Often, they are held back due to a low level of financial literacy and overall awareness.

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## FINANCIAL IGNORANCE ISN'T BLISS

For underserved communities, the hope of a better future remains a pipe dream if they don't have the understanding to use these new tools effectively. Financial ignorance can impede the progress of technology. And to this are tied the fortunes of companies operating in this space.

Action is therefore needed from the public and private sectors to drive greater awareness through financial literacy programs that focus on basic concepts to cultivate responsible behavior. Just last year, Indonesia's Financial Services Authority or Otoritas Jasa Keuangan [announced](#) a Revised National Strategy on Indonesian Financial Literacy to accelerate the financial literacy and inclusion targets in the country—a

refreshing move from a regulator that has defined a clear road map.

The private sector, too, is stepping up their efforts by developing financial education strategies and digital literacy and knowledge programs. Some of these are in collaboration with local governments and NGOs, like [Knowledge Community Inc.](#) The rapid development in new technology has given us the ability to leapfrog decades of inertia that has excluded significant global populations. It has also opened tremendous growth opportunities for the economy, businesses and social good.

With more companies entering this space across emerging markets, it is just as important for all stakeholders involved to take a responsible approach that also focuses on education, the development of

progressive regulatory frameworks, data and consumer protection, and collaborations between the public and private sector to balance the risks and benefits.

The hype is as real as the hope this opportunity provides, and the time has come to seize it.

*This article first appeared on BRINK Asia on November 28, 2018*

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## DATA PAINTS A GRIM PICTURE OF WORKFORCE FINANCIAL FITNESS. IS TECH THE ANSWER?

**Renée McGowan**

Global leader for Individual Wealth for Mercer



Globally, people are not saving enough for an adequate retirement, and a growing number of them face the daunting prospect of outliving their savings. As longevity increases and defined benefit pension systems give way to defined contribution plans, this savings gap is a critical workforce issue and a key to the multigenerational present—and future—of work.

One takeaway from [recent Mercer research](#) is that technology provides an excellent pathway to enhance individual savings. The workforce is looking to employers to provide easy-to-use, secure digital tools to “help me help myself” with financial planning. This demand is driven

primarily (but not exclusively) by technology-first millennials, the largest segment of the workforce.

### STATISTICS TELL ACLEAR STORY

Eighty-five percent of adults (including 93 percent of 18-34 year-olds) are interested in obtaining access to secure, easy-to-use, jargon-free, online financial tools to help manage their finances. Additionally, two-thirds of adults spanning all age groups are comfortable managing their savings using mobile banking, online tools or smart apps.

These findings show that there is desire to save more. Most people—81 percent—believe they are responsible for ensuring they have enough income in retirement and are willing to do something about it. Eighty-five percent are willing to make changes today to improve their income in retirement, while 40 percent are willing to save more of their disposable income, and nearly a third are prepared to reduce consumption or downsize their lifestyle to improve their standard of living in retirement.

In addition, [new research](#) from Thomsom Online Benefits found that benefits that help employees stay physically as well as financially healthy by offering advice on

physical and financial well-being, helping them manage child care, or improving their career development will engage employees and provide the best value to employers. The research concludes that these benefits now sit in the digital and global domain and that companies are adopting a technology-enabled approach to their benefits strategy.

Indeed, Thomsons found that over 90 percent of organizations that have the technology that allows them to measure all aspects of their benefits program have made well-being a high-priority initiative, whereas less than 40 percent of organizations that aren't tech-enabled have done so.

## TECHNOLOGICAL BENEFITS ARE CRITICAL TO EMPLOYEE SUCCESS

These data tell us what should be obvious. Technologies empowered by the ever-evolving breakthroughs in AI and other forms of automation can transform the frustration of navigating health care and benefits into something personalized, engaging and educational. People want new ways of working and an employee experience that offers just-in-time, intuitive digital access, personalization, and wellness.

They also want digital tools that will help them do their jobs better, faster and smarter. The Mercer study shows that two-thirds of employees believe that state-of-the-art digital tools are critical to their success.

## WHAT ARE THE FEATURES EMPLOYEES WANT?

The research dug further into what type of financial tools people are interested in and what type of features are important to them. The

key message was that people want tools that are easy to use—but also secure and jargon-free.

For 62 percent of people, ease of use ranked in their top three most important features. Being able to store personal data securely was important to 39 percent of people, and 35 percent highlighted the importance of having tools that are simple to understand and jargon-free. People are much less worried about the lack of human contact (only 26 percent have concerns) that comes with digital tools and have little concern around the amount of time taken to use technology (only 15 percent are concerned).

Although most individuals—65 percent—are willing to allow a financial online app to hold their personal data, they do have concerns about the validity and security of the tools they use. Almost half of individuals have concerns about sharing their data, and 38 percent are skeptical about trusting the results and have concerns about their valuable financial data becoming lost or stolen.

## DEMOGRAPHIC DIVIDES

Mercer's research also found that age does matter when it comes to stress around financial security and comfort with and acceptance of online tools and advice. Millennials—who fully expect to live longer—face a savings gap compounded by changing jobs more frequently over their lifetimes than previous generations did.

However, and perhaps unexpectedly, millennials have a high level of trust (83 percent) in their employer's ability to give good financial advice. Also, employers who offer better savings and/or investment benefits have a positive impact

among this age group, resulting in higher job satisfaction as well as greater commitment and loyalty to the organization.

More than any other segment in the survey, 71 percent of millennials expect to keep working in later life and wish to maintain their desired quality of life. Conversely, as they are still in the early stages of their careers, they are also the most stressed about finances of all the age groups surveyed. Not surprisingly, as digital natives, they are the most interested in online tools and mobile apps. Millennials are twice as willing as baby boomers to allow an online app to hold their data and manage their finances for them (80 percent compared to 42 percent).

Our health, wealth and careers all play a part in how confident we feel about our finances. The stress of financial insecurity affects all countries, organizations and people—and the time to cultivate financial security is always now, never tomorrow. In a world of rapid change and diverse workforces, technology can help organizations elevate the employee experience. Blending digital tools with the human touch of leadership can only help ensure the financial future for today's workforce.

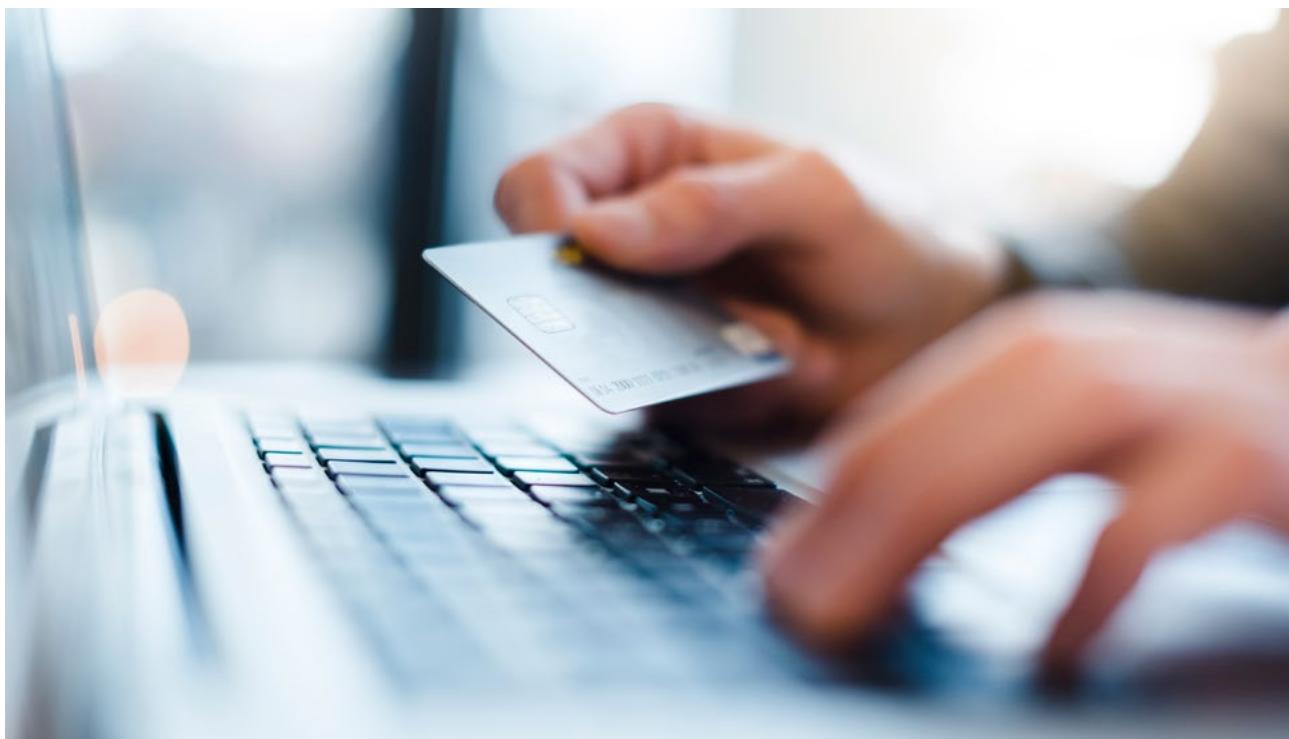
*This article first appeared on BRINK on August 29, 2018*

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## HOW TECHNOLOGY IS DELIVERING BETTER ACCESS TO FINANCIAL SERVICES

**Philippe Le Houérou**

Executive Vice President and Chief Executive Officer at International Finance Corporation Dan Schulman President and CEO of PayPal



Digital technology is spurring financial inclusion around the world, enabling millions more people and businesses to join the global economy for the first time. Yet there is much more work to do.

That's the key message from the World Bank's new [Global Findex database](#), a groundbreaking portrait of how people in more than 140 economies use cards, mobile phones and the Internet to make payments and manage money.

Access to financial services is critical for global development, as it makes it easier to invest in health, education and business. Digital technologies offer a powerful way to boost financial access.

As the fintech revolution continues to unfold, digitally enabled financial services are dramatically expanding the ways in which people transact beyond traditional banking. They are also changing the ways incumbent banks do banking, as they are themselves increasingly digitizing traditional channels.

The key features of digital financial services—ease of use such as through mobile phones, scalability, and customer-centric design—promote affordability and convenience. This, in turn, underpins their adoption and promotes financial access and inclusion.

Digitally enabled financial services facilitate day-to-day living, help families and businesses plan for everything from long-term goals to unexpected emergencies, and contribute to prosperity and resilience.

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## FINANCIAL INCLUSION RISING GLOBALLY

The Global Findex database—[the methodology can be found here](#)—shows that since 2011, 1.2 billion adults (aged 15 and above) have opened an account. What is remarkable is that 515 million did so over the last three years. As a result, an astounding 69 percent of adults now have digital channels for moving money, saving, and managing financial risks.

We see that, for the first time, a majority of adults around the world report using digital payments: 52 percent of adults—or 76 percent of account owners—make or receive digital payments. This represents major growth: Since 2014, the number of adults making or receiving digital payments rose 10 percentage points or more in countries such as China, Indonesia, Kenya, Malaysia, the Russian Federation, Thailand and Turkey.

## MORE NEEDS TO BE DONE

Yet, there is room for much more growth. The data points to an array of opportunities to expand digital offerings in developing countries. Digital technology access is high among account owners: Globally, almost 90 percent of people have their own mobile phone, while 58 percent have access to the Internet in addition to owning a mobile phone.

One key bottleneck is that adults who do own a phone and have Internet frequently lack attractive choices for using these technologies to make transactions. Take utility bills. Many people reading this might not remember the last time they wrote a check or withdrew cash to pay for water or electricity expenses; they use automatic payments instead. That option is not always available in poorer countries.

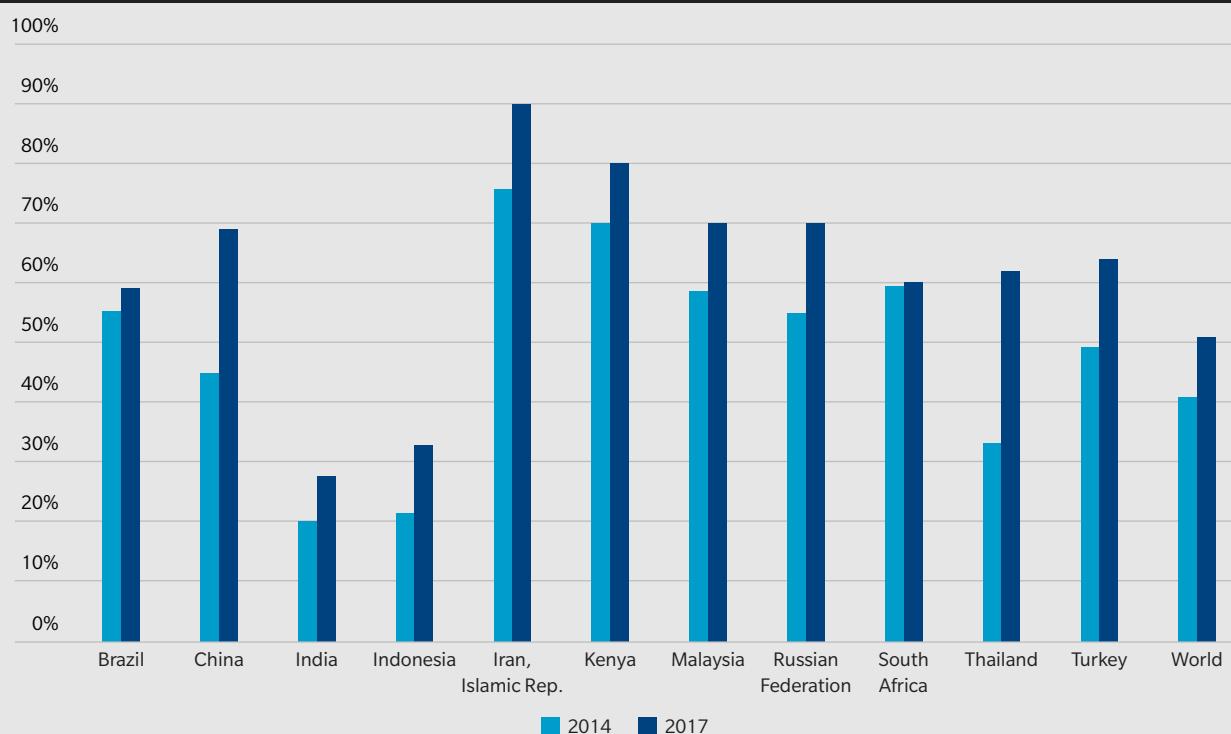
Globally, one billion adults with an account still pay utility bills in cash. And many of these adults have access to digital technology

that could provide better options. In Vietnam, for example, nearly 70 percent of account owners pay utility bills in cash only—even though three-quarters of them have a mobile phone as well as the Internet. If utility providers offered good quality, affordable digital alternatives, their customers might move their cash payments into accounts, improving efficiency on both sides.

Merchants and small businesses can greatly benefit from digital financial services, particularly in countries where account owners are more likely to have mobile phones than debit cards. In India, 240 million adults have a mobile phone but do not use their bank account. Inactive accounts are often due to a combination of inconvenient access, limited financial literacy of the users, and a mismatch between customer demand and product design. Expanding accessibility of financial services by enabling mobile phone transactions coupled with expanding acceptance networks, leveraging retail outlets, can help to increase use.

#### PERCENTAGE OF ADULTS MAKING OR RECEIVING DIGITAL PAYMENTS

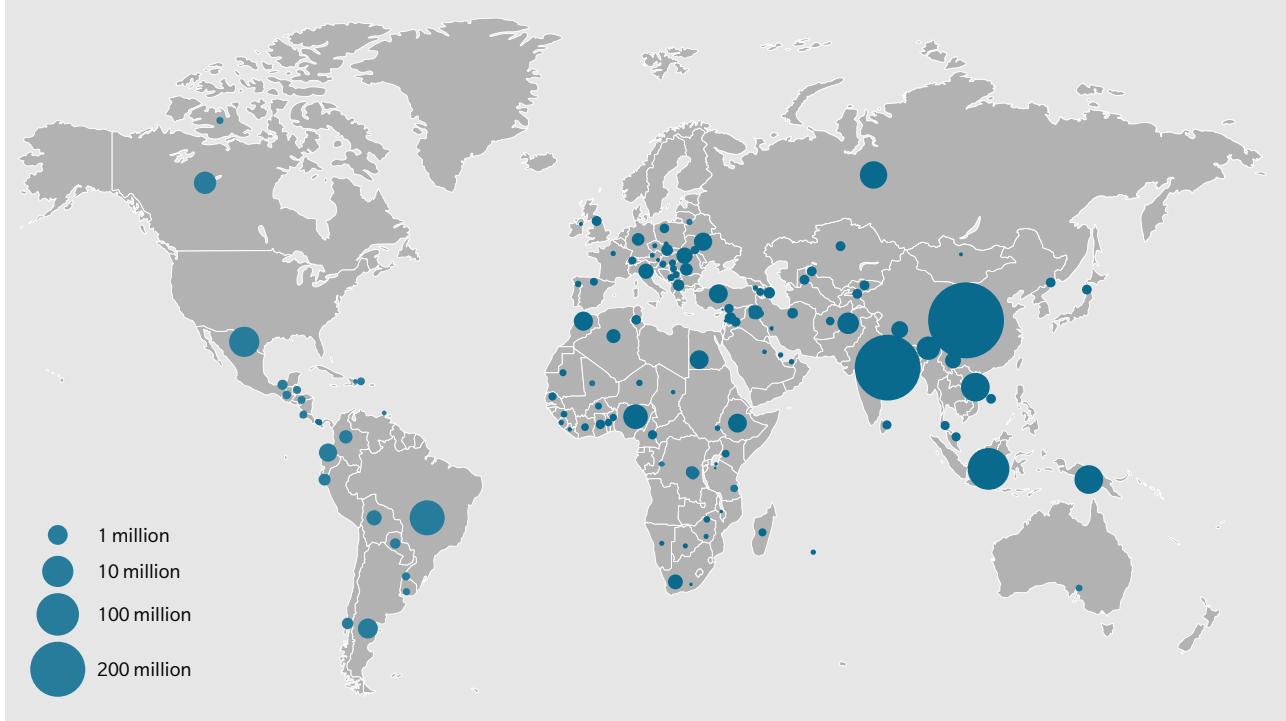
Source: Global Findex database



#### A BILLION ADULTS WHO HAVE AN ACCOUNT STILL PAY UTILITY BILLS IN CASH

(ADULTS WITH AN ACCOUNT PAYING UTILITY BILLS IN THE PAST YEAR IN CASH ONLY, 2017)

Source: Global Findex database



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## PAST SUCCESS STORIES OFFER LESSONS FOR THE FUTURE

How do we learn from our experience to do more? We can draw on the lessons from the success stories we have witnessed around the world. Consider the following examples from China, Brazil and several countries in Africa.

The ability to leverage technology is driving use in China and other markets globally. The Global Findex database confirms [China's emergence as a fintech innovator](#), in large part due to highly scalable e-commerce payment solutions designed by the private sector. Buoyed by the rise of secure, affordable, and convenient nonbank payment providers, which leverage the existing penetration of formal bank accounts, the share of adults in China making digital payments shot from 44 percent in 2014 to 68 percent in 2017. Banks in China have also increasingly digitized their processes to drive adoption and use.

The example of Brazil demonstrates the importance of cost control. In Brazil, Internet payments are low but growing as new digital financial services entrants [mount a challenge](#) to the small group of incumbents that dominate retail banking. Since 2014, the share of account owners using the Internet to pay bills or buy things has nearly doubled. The lower costs of digital financial services could have special appeal in Brazil, where unbanked adults are twice as likely as the global average to say financial services are too expensive.

Other examples from Africa illustrate how profitability can be achieved at scale. Payment models with the ability to deliver low-value payments at an affordable cost tend to drive a high volume of transactions, allowing them to reach scale in many emerging markets. Sub-Saharan Africa claims all 10 economies worldwide where mobile money ownership is higher than financial institution account ownership: Burkina Faso, Chad, Côte d'Ivoire, Gabon, Kenya, Mali, Senegal, Tanzania, Uganda, and Zimbabwe.

Reflecting on high mobile money penetration, 97 percent of account owners in Kenya use digital payments, which is as high as the share in high-income economies. M-Pesa's storied and strong growth is often attributed in part to demand for domestic remittances in Kenya. This shows us that the M-Pesa product addressed a specific customer need—providing utility in helping people efficiently manage a part of their financial lives. Tailoring financial products to specific customer needs is key to achieving scale. Moreover, partnerships can expand accessibility. For example, M-Pesa recently launched a partnership with PayPal to enable Kenyan M-Pesa's 27.8 million customers to transact with PayPal's 227 million users around the world by combining mobile money providers and Internet payments solutions.

Remittances are also a prominent example of how fintech can provide lower-cost options. A study by the Global System for Mobile Communications Association found that remittances sent between mobile networks in Africa were half

the cost of traditional remittance services. Another [study by Xoom](#) had a similar finding, showing that digital remittances cost, on average, just 3.93 percent of the amount sent compared with World Bank data demonstrating that the average cost of sending a remittance is 7.45 percent across all remittance types. Digital remittances are well on the way to achieving the UN Sustainable Development Goal of lowering remittances costs to less than 3 percent.

### 1.1. A BRIGHT FUTURE FOR DIGITALLY ENABLED FINANCIAL SERVICES

Such services can serve as an entry point into the world's increasingly digital economy, creating greater access to information, transparency, and triggering growth through more efficient and targeted customer engagement in developing countries. Building from the insights of the new Global Findex, leaders in the public and private sectors must begin to work together in new ways and contexts to ensure we achieve our collective vision of universal financial access and improved financial health for all.

This piece [first appeared](#) on the World Economic Forum Agenda.

*This article first appeared on BRINK Asia on April 25, 2018.*

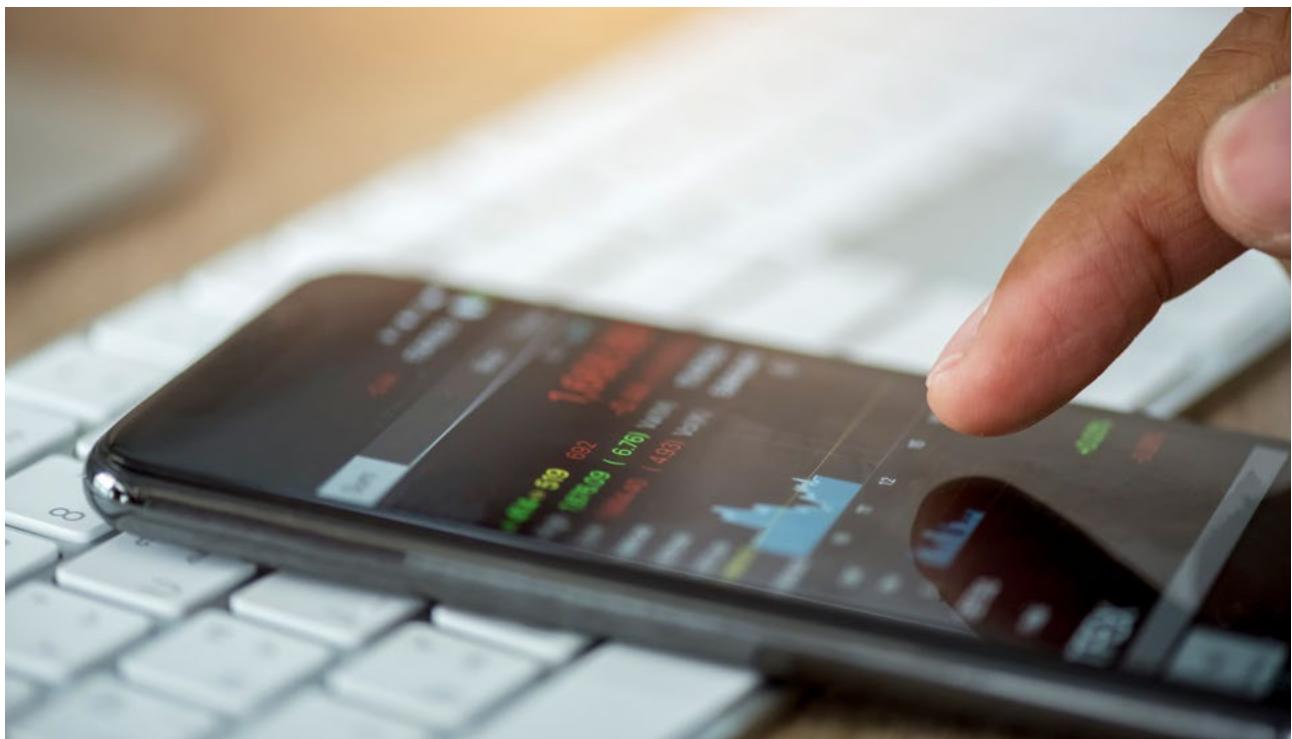
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# FINTECH—THE FUTURE OF FINANCIAL SERVICES

## HOW FINTECH IS TRANSFORMING ACCESS TO FINANCE

**Arup Kumar Chatterjee**

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The sales and profit margins of many micro-, small-, and medium-sized enterprises (MSME) are highly vulnerable to seasonality, input and labor costs, late payments, natural calamities, unexpected expenses, and myriad other factors that result in lumpy cash flows. Without collateral or sufficient credit information, banks are often reluctant to lend them money, so these MSMEs face the additional risk of nonperforming assets.

### ENTER FINTECH

Thanks to new technology, the mindset of financial institutions is changing in ways that are enabling MSMEs to access loans. There is a growing trend of cash flow-based financing backed by current and projected future cash flows.

These loans are entirely different from traditional asset-backed loans, where the valuation of collaterals

offered to the lender decides the loan amount and tenor. The reticence of conventional banks to lend to MSMEs hinges on the fact that they do not possess fixed assets as collateral.

Emerging financial technology players around the world are reshaping how MSMEs can access working capital and cash flow finance. Having acknowledged that MSMEs lack the capacity to

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produce financial reports to enable financial institutions to assess their repayment capacity and default risk, they are deploying nimble and agile technologies to get an accurate understanding of their cash conversion cycle.

The cash conversion cycle is the time MSMEs need to convert investments in inventory and resource inputs into cash through sales of goods and services that can help establish the cash generation terms of the business and, thereby, help to determine their repayment capacity and enhance price transparency. After all, cash is the only factor that can repay a loan; collateral is only the second way out if money cannot be generated.

A good example is the Kenyan merchant cash advance service Grow, which helps MSMEs access capital by factoring their cash flow cycles while simultaneously encouraging them to move away from cash and toward electronic payments accounts via the Kopo Kopo transaction platform.

A percentage of the digital transactions that merchants receive are set aside to repay their advances. This arrangement keeps repayments fluid, bite-sized, and in line with cash flow.

In India, Capital Float, a nonbank finance company, provides instant decisions on collateral-free loans for small entrepreneurs. A risk profile assessment is carried out in real time by analyzing MSMEs' cash flows using data from Paytm, an e-commerce payment system and digital wallet company, mobile financial services firm Payworld, and smartphones.

Capital Float customers carry out electronic know-your-customer authentication, receive the loan offer, confirm acceptance, and sign the loan agreement on a mobile app. The loan amount is credited to their account on the same day, with nil paperwork.

Cash flow loans help MSMEs seize opportunities when they arise and are an excellent example of the

targeted, niche innovation that enables fintech to compete with more prominent—but slower—traditional banks. They are well-suited to businesses that maintain very high margins, but lack enough hard assets to offer as collateral.

These loans typically cater to MSMEs in retailing and marketing, where managing and generating better cash flow is crucial given their higher cost of debt and lower return on capital compared to large corporations.

Rural lending is also shifting toward cash flow-based lending, which would lower costs and attract big banks and financial institutions. Fintech solution providers, such as India's CropIn Technology, are bringing data, artificial intelligence, and machine learning to banks to help them better assess credit risk.

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## HELPING MSMES AND MITIGATING RISK

Farmer data on KYC, geo-coordinates of farms, history of crops they have sown, crop size, yield and potential earnings factor into the partner bank's digital platform. This information is collated with remote-sensing data to predict a farmer's productivity, estimates of the yield, and selling price.

The last step is plotting risk scores for farmers using a machine-learning algorithm. By assessing the cost of input/output, positive cash flow and profitability, instant credit disbursal can be made in rural areas.

After the loan has been issued, satellite imagery helps the bank conduct remote monitoring and evaluation by providing periodic data on whether the farmer has used the disbursed loan for the intended purpose. When the crop approaches the harvest stage, the bank is alerted to get in touch with the farmer to initiate the repayment process.

Insurance companies looking to offer crop protection to smallholder farmers can also leverage such technology for underwriting and claims administration. In the dairy sector, insurance firms are now able to finance cash flows by determining the amount of compensation payable to a farmer based on both quantity and quality of milk produced.

More frequent repayments align with the nature of cash flow lending and the risk policies of fintech lenders. It involves real-time cash flow-based underwriting and monitoring of highly leveraged balance sheets, using current account and merchant settlement data on large volumes of small payments. The loan size and pricing are based on the level and stability of cash flows.

Since MSMEs typically have a single bank account, using highly automated pricing and decision engines provides a clear electronic footprint for tracing the history of the cash flows. By analyzing the net cash flows, an accurate and real-time risk assessment of the short-term financial health of MSMEs can be made on their repayment capacity and liquidity position.

Access to real-time information helps to manage risk, as it allows the lender to identify the defaulting MSME quickly and ring-fence the cash flows or suspend payments before overdue fees accrue. This leaves no room for manipulation of funds—a root problem of asset-backed lending strategies that suffer diversion of cash flows through multiple bank accounts.

With a new generation of digitally-savvy MSME owners emerging in developing Asia, traditional players may soon find themselves playing second fiddle to fintech. The only way to survive is to innovate in the MSME finance space and accelerate investment in technology to future-proof their platforms and retain and grow their nontraditional customers.

This piece first appeared on the Asian Development Blog.

*This article first appeared on BRINK Asia on August 9, 2018.*

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## FINTECH IN ASEAN — COLLABORATION IS KEY

BRINK Asia Editorial Staff



With a population of over 600 million people, the ASEAN region is considered an expansion opportunity for fintech companies, given the large potential customer base that fintechs can tap into. A [recent report](#) by the Economist Intelligence Unit states that “Given population and GDP growth rates, combined with an increase in online access and smartphone penetration, ASEAN countries offer a fertile ground for fintech investment.”

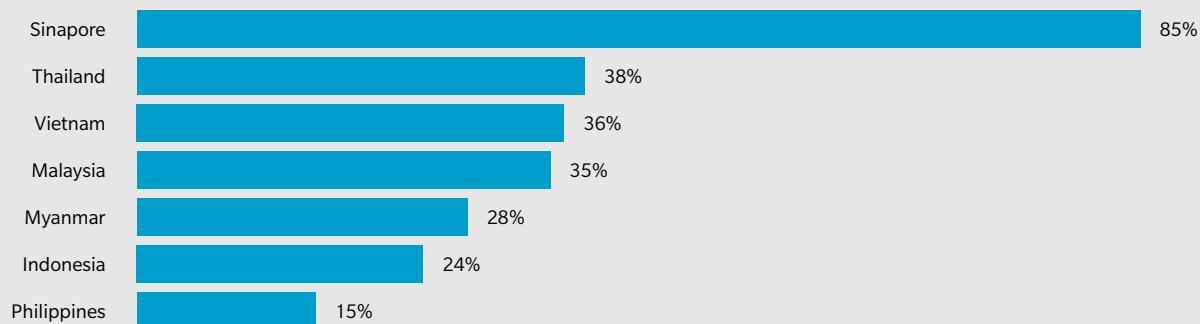
### SINGAPORE LEADS THE PACK

The report highlights Singapore as providing, “a mature market for fintechs while other countries offer major potential in terms of scale.” It also adds, “Singapore has the most buoyant fintech ecosystem in the region.” The city-state is the undisputed leader across most areas of measurement, followed by Indonesia, Malaysia and Thailand. Singapore boasts a smartphone

penetration rate of 85 percent, twice that of its closest contender, Thailand. Furthermore, 98 percent of its population aged 15 and above holds a bank account. This high rate of financial inclusion also presents huge opportunity. With an average income higher than its ASEAN counterparts, four in 10 fintech companies choose Singapore as their operating base—more than any other regional country. In fact, Singapore is home to 39 percent of all fintech organizations among the seven ASEAN markets.

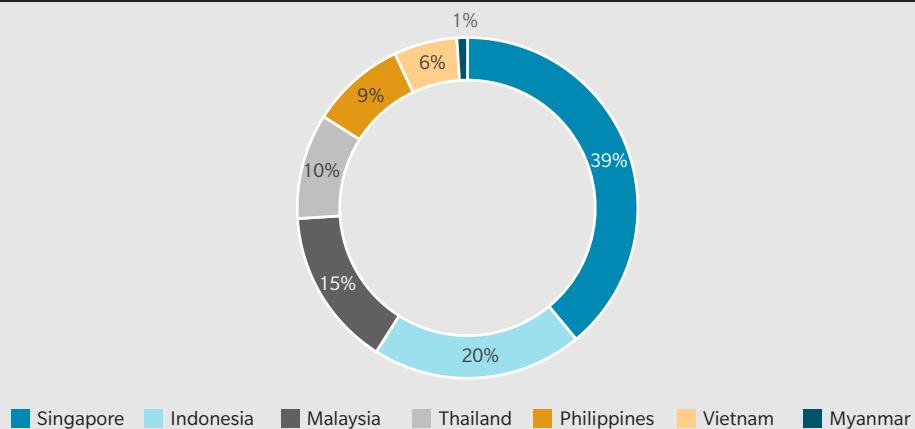
#### ASEAN CITIZENS WHO HAVE A SMARTPHONE (% OF POPULATION)

Source: BBVA Research, Newzoo



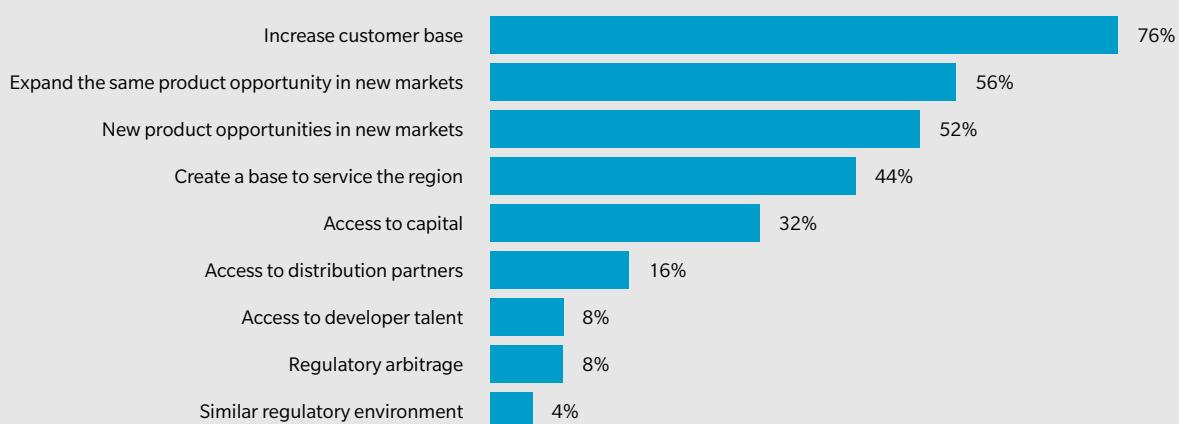
#### DISTRIBUTION OF FINTECHS IN THE ASEAN REGION (% OF COMPANIES)

Source: UOB, Fintech Singapore



#### TOP MOTIVATIONS FOR DOING BUSINESS IN ASEAN (% RESPONDENTS)

Source: The Economist Intelligence Unit



## OPPORTUNITIES IN ASEAN

An estimated 76 percent of fintech executives have cited the potential to access and service a large customer base as their top motivation for engaging in business in ASEAN. The ensuing priorities include expanding the same product opportunity in new markets (56 percent) and new product opportunities in new markets (52 percent). “Our strategy is to find global banks that share the same vision as us and partner with them to provide next-generation unified commerce solutions to their customers,” says Simon Lee, CEO of Assembly Payments, an Australia-based fintech payments provider that is set to expand to Singapore by the end of 2018. Mr. Lee further added, “We believe in the next five years payments will be free,” highlighting the fact that traditional financial institutions typically generate profits from additional services, such as credit cards and foreign exchange and are, therefore, eager to partner with a fintech company.

## FORGING PARTNERSHIPS IS KEY

Partnerships in the fintech space are highly valued. A strategic partnership enables companies to gain local knowledge, understand how to do business in a local setup and get familiar with local regulations. The main benefits accruing from a partnership were greater industry knowledge (cited by 52 percent), followed by referrals to other partners (40 percent) and access to customers (40 percent).

Separately, 43 percent of senior executives stated that digital partnerships have enabled their organizations to deliver more innovative products and services. A further 30 percent cited lesser time

taken to launch a new product or service, while another 30 percent highlighted the advantage of easier access to new markets. An estimated 48 percent of respondents said their organizations had six or more partnerships, indicating the high likelihood of collaboration. Among financial services executives, 81 percent agree their organizations must make an effort toward leveraging digital partnerships, a call to action for any fintech company looking to expand into the ASEAN region.

Simon Cant, co-founder and managing partner at Australia-based Reinventure stated, “Fintechs need to ensure they have a local partner.” Reiterating the necessity for local partnerships, he added, “There are cultural differences, and numerous geographical and other challenges, which means that local knowledge and local language is critical.”

## CHALLENGES

Forty percent of respondents cited licensing requirements and regulations imposed by regional governments as significant obstacles to introducing new products and services in the region. Julian Fenwick, managing director at Governance Risk & Compliance Solutions said “Many people assume it can be done relatively easily, but the culture is different and you have to make sure you have local staff.” Established in 2012 and currently serving 250 clients globally, Governance Risk & Compliance Solutions uses technology solutions to meet local compliance rules. He further added “Old compliance techniques don’t work for new business models, such as fintech.” Apart from regulatory challenges, cultural barriers (36 percent) and a lack of people with the requisite skills (28 percent) are also major hurdles.

## RECOMMENDATIONS

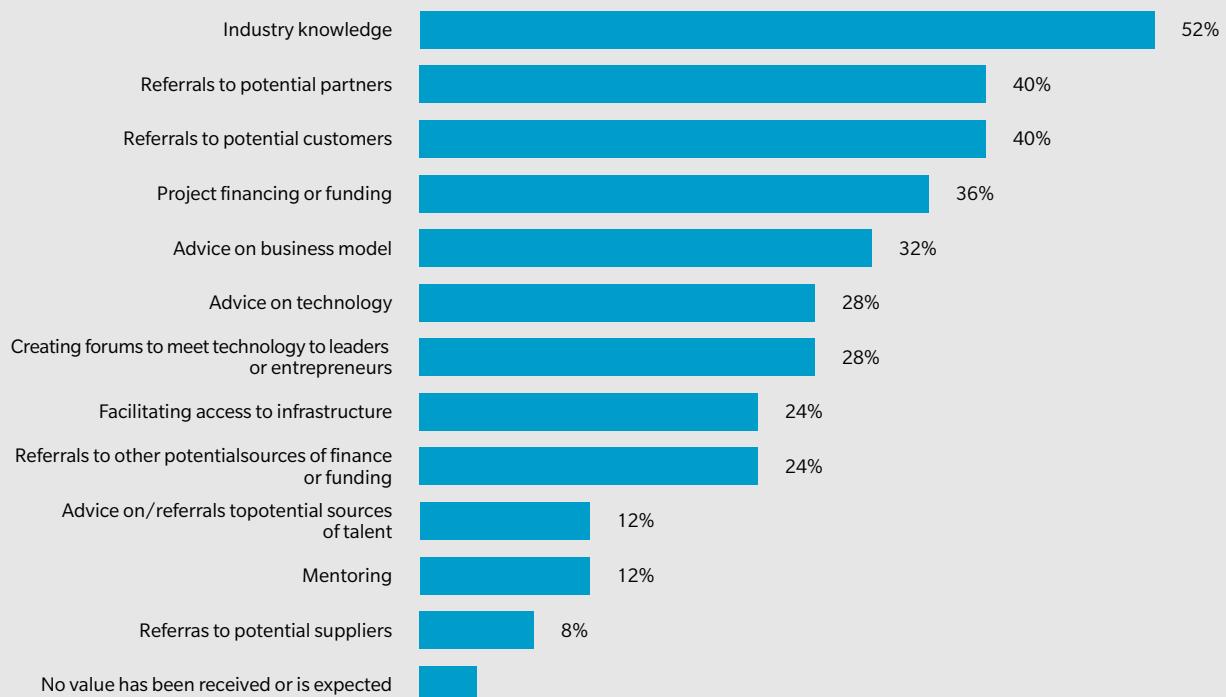
The ASEAN region presents diverse opportunities accompanied by myriad challenges, considering the varied socioeconomic and demographic composition of its members—spanning from the small but advanced city-state of Singapore to the Indonesian consumer market of more than 260 million people. In this regard, fintech companies could consider several recommendations.

All ASEAN economies are growing steadily, and fintech companies must be swift in tapping into available opportunities by identifying which country is most conducive for its offerings. In attempting to do so, they must also develop a detailed understanding of its local regulations. Fintech companies must understand that each ASEAN market is unique, and an association with a regtech company could enable it to conduct business smoothly. Likewise, local partnerships can prove to be a boon since local actors understand the local environment and can ease the transition of doing business in another country. Similarly, collaborating with local banks and other traditional financial institutes can also help gain customer access and knowledge. Firmness of purpose is key and the report aptly highlights, “Many markets require time, patience and investment in order to succeed, and local business culture can reward those who stay the course without leaving too soon.”

*This article first appeared on BRINK Asia on December 14, 2018.*

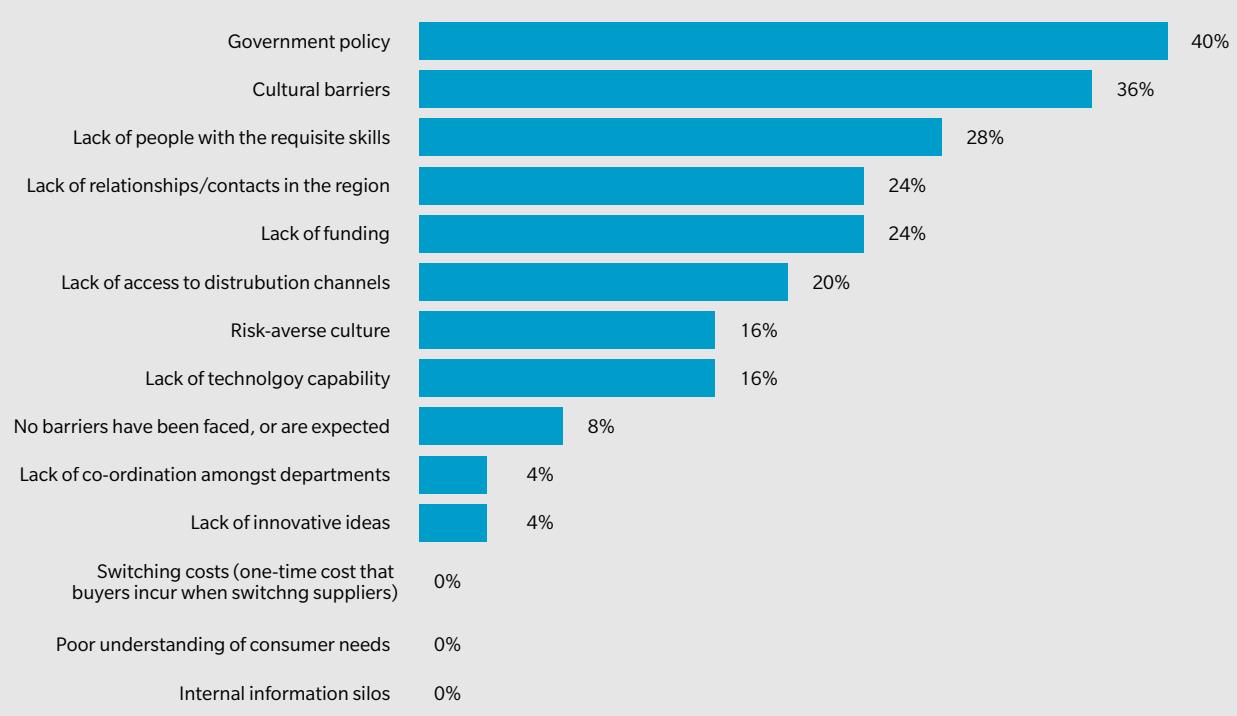
#### VALUE OF ASEAN PARTNERSHIPS (% RESPONDENTS)

Source: The Economist Intelligence Unit



#### BIGGEST BARRIERS TO INTRODUCING NEW PRODUCTS OR SERVICES IN ASEAN (% RESPONDENTS)

Source: The Economist Intelligence Unit



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## DRIVING GROWTH IN ASIA'S FINTECH SECTOR

**Tancho Fingarov**

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**Peter Reynolds**

Partner and Risk Practice at Oliver Wyman



The emergence of fintech brings to market new solutions to increase efficiency and financial inclusiveness in the areas of payments, lending, broking, trading, capital-raising, and personal financial management, among others.

The role of managing the development of fintech in any market typically falls to the government and financial regulators, who have played either a supporting or inhibiting role for new entrants. In Asia, we have seen that many

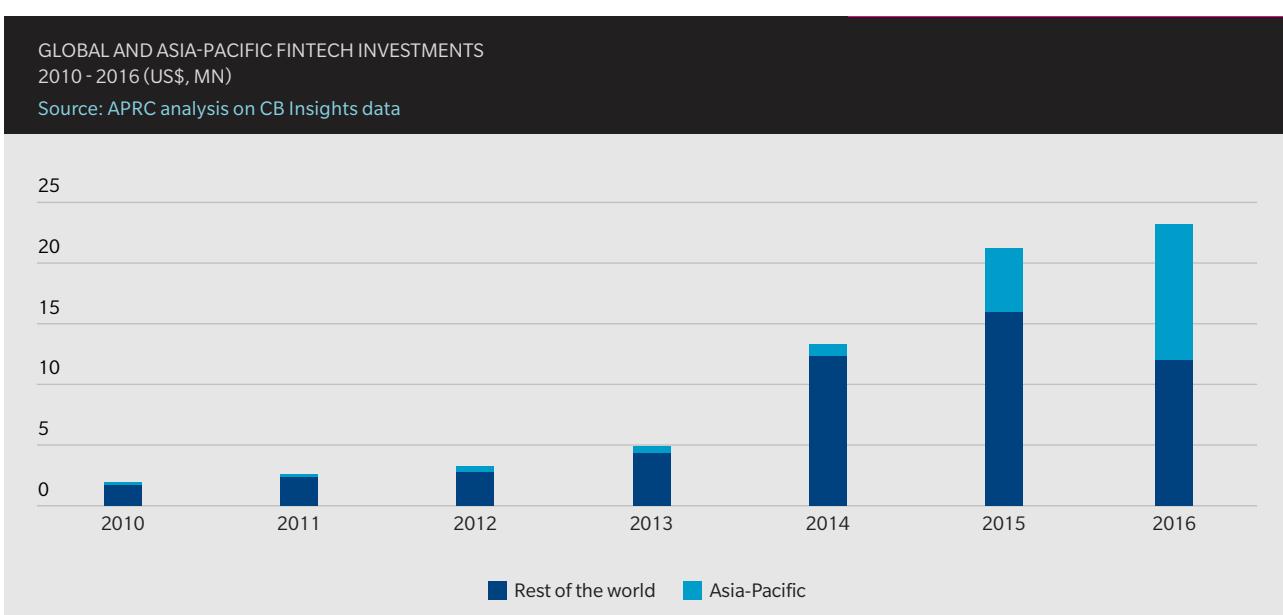
governments and regulators, recognizing the benefits emanating from fintech, have made fintech development an explicit policy objective in recent years.

Driven by a desire to increase financial inclusion for significantly “unbanked” or “underbanked” populations, governments have successfully accelerated the growth of fintech financing in the region, resulting in a surge in fintech investment.

However, this rapid growth in fintech has the potential to expose systemic risks for the banking sector and the broader economy. So while governments in the region need to continue nurturing their fintech sectors, they must also manage the associated risks.

## GLOBAL AND ASIA-PACIFIC FINTECH INVESTMENTS 2010 - 2016 (US\$, MN)

Source: APRC analysis on CB Insights data



## SUPPORTING GROWTH: THE ROLE OF REGULATORS AND GOVERNMENTS

There are three main actions that regulators and governments in Asia must take to ensure the smooth development of a thriving fintech landscape, according to an upcoming report.\* They are to (a) provide innovation support; (b) ensure a conducive investment environment; and (c) enhance digital and financial infrastructure.

### SUPPORT INNOVATION

**DESIGN REGULATIONS TO ALLOW EXPERIMENTATION.** New entrants must be allowed to test their business ideas with real customers and better understand relevant regulatory boundaries. Meanwhile, adequate oversight from regulators and policymakers during this process must also allow for more learning regarding new fintech entities before actual regulations are mandated for their products and services.

### THE ART OF POST-SANDBOX REGULATORY APPROVAL.

The process of final regulatory approval before the “go-live” of any fintech company is another area of increasing importance. This final stage is currently a site of significant uncertainty among fintech professionals, who undertake a highly iterative process going through multiple rounds of review with the regulator teams. Dedicated teams of financial regulators need to manage “final-stage” fintech approvals and licensing and work closely with teams who run the regulatory sandboxes to ensure more regulatory certainty.

### INVEST

Governments and regulators must facilitate the right investment environment for fintech companies to pave the way for enhanced access to capital.

**IMPROVING THE INVESTMENT ECOSYSTEM.** In China, for example, the government has maintained a laissez-faire approach to private fintech investors, choosing not to interfere by providing benefits or subsidies such as tax breaks.

Elsewhere, in 2018, the Australian government revised and expanded its investor tax incentive scheme to support fintech startups; Singapore and Hong Kong have also maintained tax incentives for fintech investors.

**A MEASURED APPROACH.** Where necessary, governments often channel funds into the fintech sector through a mix of development grants and direct investment. While direct government investment is important, it needs to be done in a way that does not compromise the free market and does not prematurely select winners and losers. The best approach is for governments to identify the gaps in funding but take a passive investor approach to avoid government crowding-out effects.

### INFRASTRUCTURE

#### TELECOMMUNICATIONS AND INTERNET COVERAGE.

In larger developing markets, many fintech applications focus on extending financial services to unserved and underserved sectors of the population. In this regard, mobile networks become the key financial services distribution

channel. Countries such as India and Brazil see high levels of fintech adoption in payments, credit and savings services, driven by a strong foundation of broad mobile coverage.

**CENTRALIZED PAYMENTS SYSTEM.** Increasingly, governments are recognizing the importance of an e-payment infrastructure in developing a conducive fintech environment and broadening the digital economy. However, setting up a national payment infrastructure is not without practical challenges. Launched in April 2016, India's Unified Payments Interface (UPI) was seen by many as a success—many major international and local firms use the system as their payment infrastructure (such as Jet Airways and WhatsApp), resulting in the steady growth of UPI transactions. However, more than 90 percent of UPI transactions remain peer-to-peer, and the system has not been able to scale up commercial transactions, reducing its economic value.

**DATA-SHARING CAPABILITIES.** Fintech products and services are limited without a supporting framework to ensure data is accessible to fintech companies. The wealth of financial and behavioral data owned by incumbents is both a major competitive advantage and a huge barrier to entry. As such, governmental intervention and any regulatory imperative to share this data across platforms catalyzes the development of fintech companies. There are, however, technical challenges and liability issues related to data sharing. Conforming to universal data standards will be costly, and scaling this framework will also run into challenges. Further, regulators and governments need to understand the importance of metadata to increase traceability and address any liability issues that may arise when data is shared between traditional banks and fintech entrants.

## PROTECTING STABILITY: REGULATORY REFORMS FOR RISK MANAGEMENT

A fintech regulatory program needs clear goals of ensuring financial stability, coordination among cross-sector regulators, and strong customer protection and empowerment.

**MAINTAINING FINANCIAL SYSTEM STABILITY.** While there are currently no compelling signs of fintech financial instability risks materializing, certain emerging (macro-prudential) risks can escalate. For example, fintech may gain prominence through indirect network effects between highly connected entities in the form of market infrastructure, to the extent that the importance and prevalence of network complexity and associated contagion effects could be significant. Regular review of the regulatory framework is necessary to monitor growth and product evolution.

**REGULATING CROSS-SECTOR INSTITUTIONS.** Fintech growth has necessitated a new supervisory system that can address financial stability risks. The same traditional regulatory framework cannot be applied universally across banking, nonbanking, or fintech companies, as standalone and uncoordinated regulations could lead to fragmentation. This can result in businesses easily and quickly moving jurisdictions to take advantage of and arbitrage the traditional regulatory framework. One approach to overcoming this is activity-based regulation, where regulators move away from regulating entities and regulate the actual financial activities those entities are performing.

**EMPOWERING AND PROTECTING CONSUMERS.** Regulators have taken aggressive steps to protect data privacy. For example, the General Data Protection Regulation was approved by the EU Parliament

after years of preparation and debate. It is a progressive first step toward protecting consumers and stakeholders globally who have been monitoring this new regulation and adopting it across other jurisdictions. In addition, regulators need to increase international collaboration on cybersecurity and must aim to standardize key cybersecurity rules.

Separately, innovative financial products and services often create opportunities of misconduct, as technology can magnify the potential of unlawful actions that were once subjected to intense regulatory detection. Perhaps an even more important issue is that of machine misconduct, which arises when over-reliance on automated decision-making processes can result in systematic errors and/or conceal biases, such as discrimination based on race, religion, or geographic locations.

## LOOKING AHEAD

Increasing Internet and smartphone penetration means that fintech can become a vehicle for financial inclusion across the Asia-Pacific; and fintechs can aid in the formalization of money and dramatically shrink gray economies. Facilitating innovation and efficiencies in the sector will spur the emergence of adjacent digital sectors as well, such as advanced analytics and AI.

Governments and regulators in the region have a pivotal role to play in developing fintech services: They must become both incubators and protectors of the sector.

*This article first appeared on BRINK Asia on November 15, 2018.*

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# THE BATTLE FOR E-WALLET SUPREMACY IN SOUTHEAST ASIA

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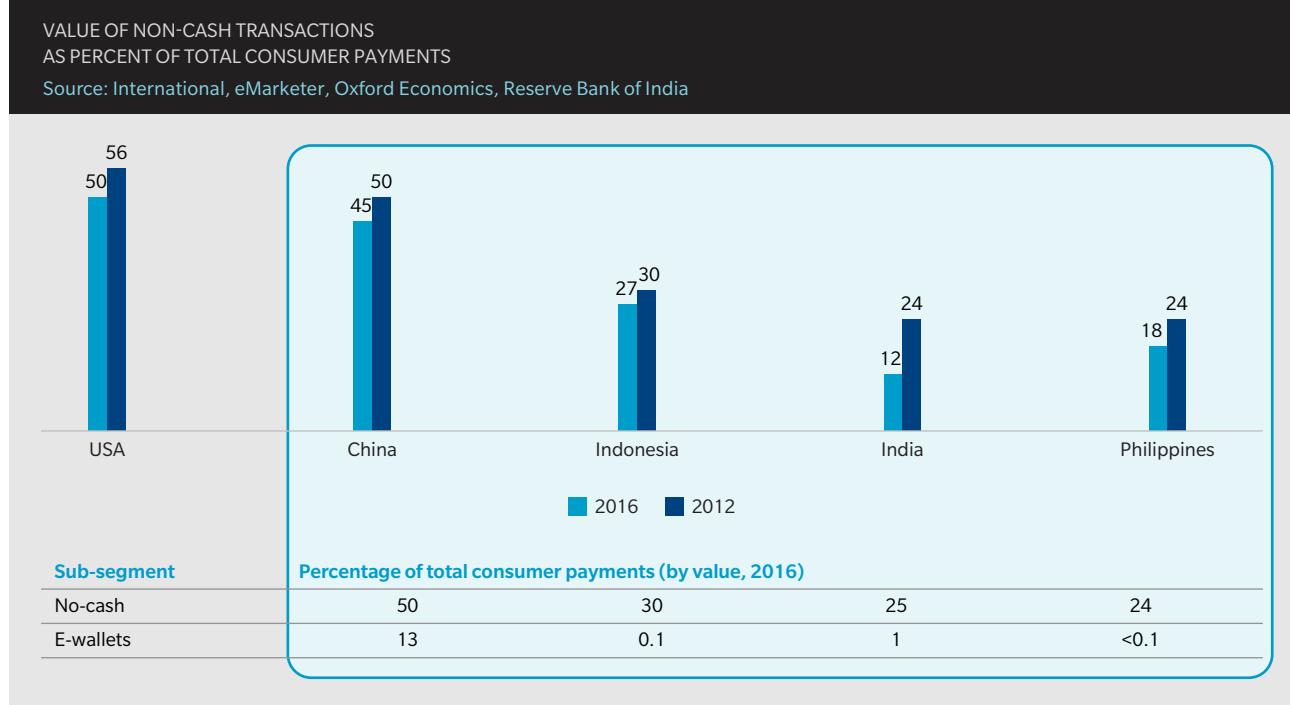
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Across Southeast Asia, there is a fierce battle raging for e-wallet dominance. E-wallets, or digital or mobile wallets, are types of payment instruments that can be used to transact at physical locations and online. These wallets can be linked to debit cards and credit cards or to a bank account and can also be loaded with a sum of money, called “stored value.” In some instances, e-wallets can also store cryptocurrencies.

Riding the wave of rapidly increasing mobile Internet adoption by a 600 million person consumer base, telephone companies, banks, merchants, device manufacturers, transportation providers, remittance players, and consumer tech firms have recently set up e-wallets in Southeast Asia, aggressively competing for both consumer and merchant adoption.

While payment volume through e-wallets is still a small proportion of noncash payments today, it is forecasted to scale rapidly. Mobile payments in the ASEAN region are expected to reach over [\\$30 billion by 2021](#), of which e-wallets will capture a significant part.



Although there has been a flurry of activity in the e-wallet domain, there are several challenges that must be considered for businesses to be successful.

## CHALLENGES FACED

Investors have actively supported these new businesses, but not all e-wallet companies will survive. Investors and e-wallet operators need robust business models that can sustain competitive differentiation and rapidly scale to stand a chance of success. In markets that are well past the tipping point of mass adoption of e-wallets, such as in Kenya and China, the evidence is clear—this is a winner-takes-all market, in which the top two players capture over 80 percent of the market. For any operator of an e-wallet, this should ring alarm bells.

As e-wallet adoption increases among the banked population, it also raises important strategic questions for the banks themselves, which have much to lose in both payment flows and consumer spend data. Payment flows may shift away from banks' credit and debit cards onto stored value wallets, and even if cards are still the funding source for the wallets, then banks still lose visibility of payment behavior made from the e-wallet.

Markets in the region are at very different stages of evolution when it comes to e-wallets adoption, though different e-wallet business models are emerging. For instance, in China, e-wallet adoption grew beyond the tipping point early in this decade, driven by Alibaba and Tencent, setting the precedent for future evolution in Southeast Asia. Currently, the Philippines is on the cusp of a digital payment revolution, with noncash payment methods,

particularly e-wallets, expected to surge to 6 percent of payments by 2022 from a tiny fraction today. This makes a pan-Southeast Asian e-wallet network difficult as integration in markets at different stages of adoption is a hurdle.

## DIFFERENT WINNING E-WALLET BUSINESS MODELS

As e-wallets proliferate across the region, it is imperative to understand which players and business models will win the battle for supremacy.

### ARCHETYPE A

The “Financial Inclusion” e-wallet, archetype A, targets the unbanked or underbanked, providing an e-wallet that is a digital alternative to holding physical cash. It is likely to be one of this demographic’s first experiences

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with formal financial services. For the unbanked, it is the closest substitute to a bank account, with primary uses being cash in and cash out, domestic and cross-border remittances, and limited payments—for example, prepaid mobile top ups.

#### ARCHETYPE B

Under “Digitally Enabling the Underbanked,” archetype B, leading players provide a wider range of quasi-banking solutions to the unbanked or underbanked segment. The e-wallet becomes a critical instrument to enable a broader set of payment use cases, and winners may need to provide value-added solutions that go beyond payments, such as providing simple advice on spending and budgeting and enabling credit solutions.

#### ARCHETYPE C

With “Payment Convenience,” archetype C, e-wallet operators target the banked segments, positioning their e-wallets as a convenient payment instrument to drive loyalty. Various models exist, but typically the e-wallet either stores credit and debit card data to enable those cards to be used in mobile payments, such as a device wallet like Apple Pay, or draws funds into a stored value facility, which is used to make mobile payments, for example, DBS’ PayLah. Revenue is driven by the interchange fees from the mobile payments made at merchants from the e-wallet and from finding ways to monetize the rich transaction data gathered each time the e-wallets are used.

#### ARCHETYPE D

Becoming the “Lifestyle Payment Partner,” archetype D, is the target end-state for many e-wallet providers, but few have achieved it, and even fewer bank-led e-wallets count among those who have. While banks might aspire to achieve this dominance, it is the large consumer tech platforms in frequent-use ecosystems, for instance, messaging platforms and e-commerce players, that are emerging as leaders. These players are merging e-wallet capabilities into their core offerings, encouraging captive users to adopt their e-wallet as an attractive payment alternative on its platform. The advantage of these ecosystem players is that monetization of the e-wallet does not have to come directly from payments, but instead from driving up the average ecosystem revenue per user.

### TIME FOR ACTION

The tipping point for mass adoption of e-wallets across Southeast Asia is hard to predict, though trends in consumer behavior, technology advancement, and the evolution of ecosystem-based financial services all point to rapid acceleration in the next 3-5 years. Market infrastructure developments, such as real-time payments infrastructure, innovation in low-cost merchant acquiring, regulations on e-wallet onboarding requirements, and transaction value thresholds, will impact adoption and potentially change the fundamental shape of the retail payments landscape.

Investors and operators of e-wallets will need to manage the high costs of developing large networks to maintain their competitive edge, creating ubiquitous payments use cases, attracting users and motivating regular use. The path to monetization will be long and hard, but the rewards from becoming the indispensable payment instrument of choice for target segments will be huge.

Meanwhile, there is no room for complacency for banks and other existing payments players. With e-wallets emerging as the potential instrument of choice for small ticket payments, it is imperative that incumbents respond to defend their turf in retail payments. Banks need to make important strategic choices about where and how to compete, as they determine whether to participate directly with their own e-wallets or ensure how their own payment solutions are seamlessly integrated into the wallet platforms of future winners.

*This article first appeared on BRINK Asia on July 5, 2018.*

## COMPARISON OF E-WALLET ARCHETYPES

Source: Oliver Wyman

	FINANCIAL INCLUSION PLAY	DIGITALLY ENABLED UNDERBANKED	PAYMENT CONVENIENCE	LIFESTYLE PAYMENT PARTNER
<b>KEY SUCCESS FACTORS</b> 	<ul style="list-style-type: none"> <li>• Widespread agent network and user base for network effect</li> <li>• Trust and brand recognition</li> </ul>	<ul style="list-style-type: none"> <li>• Simplified and low-cost cash-in to incentivize loading</li> <li>• Multiple use cases to keep customers engaged and wallets funded</li> <li>• Merchant/agent network (often merchants double as agents) to drive adoption</li> </ul>	<ul style="list-style-type: none"> <li>• Wide merchant acceptance network</li> <li>• Superior customer service and experience with added functionality e.g. spend tracking &amp; analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Conversion of customers in the core ecosystem to e-wallet users</li> <li>• Focus on “beyond payments” opportunities</li> <li>• Monetize e-wallet data to provide adjacent services</li> </ul>
<b>REVENUE DRIVERS</b> 	<ul style="list-style-type: none"> <li>• Fees and commissions from cash ins/cash outs, remittances and airtime top-ups</li> </ul>	<ul style="list-style-type: none"> <li>• Merchant interchange and float income</li> <li>• Limited micro-credit referrals/credit scores</li> </ul>	<ul style="list-style-type: none"> <li>• Merchant interchange and float income</li> <li>• Achieving “topp-of-wallet” status for credit/debit cards stored in the e-Wallet</li> </ul>	<ul style="list-style-type: none"> <li>• Higher engagement/loyalty to core ecosystem solution</li> <li>• Merchant interchange and fees beyond payment services (e.g. credit)</li> </ul>
<b>COST DRIVERS</b> 	<ul style="list-style-type: none"> <li>• Agent fees and cash management costs</li> </ul>	<ul style="list-style-type: none"> <li>• Merchant acquisition costs, agent fees and cash management costs</li> </ul>	<ul style="list-style-type: none"> <li>• Merchant acquisition costs (e.g. for QR code enablement)</li> </ul>	<ul style="list-style-type: none"> <li>• Merchant acquisition costs</li> <li>• Marketing spend to support acquisition /engagement</li> <li>• Funding of loyalty programs</li> </ul>

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# KEEPING PACE WITH ASIA'S EVOLVING ROBO-ADVISORY REGULATORY LANDSCAPE

**David Lee**

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The rise of the millennial investor is changing the dynamics of the financial advisory industry. High accessibility to information has shaped the attitude and expectation of the millennial investor toward wealth management, and they are very different compared to traditional investors.

Due to these factors, many such investors are turning to robo-advisers: automated portfolio construction software that is fully distributed online. Generally, a robo-adviser will analyze investment products and propose investment vehicles on financial investment. As most robo-advisers rely on exchange-traded funds (ETFs) to construct a

client's portfolio, it is easier for a wide range of customers to understand the low complexity product offering. Robo-advisers also enable retail customers to enjoy to a certain extent the private wealth management service that was previously too expensive for them.

## INCREASING USE OF ROBO-ADVISERS

In the High Net Worth Individual (HNWI) customer segment, relationship and human connection are essential in gaining the customer's trust. That is why there is an increasing number of financial institutions starting to offer a

'bionic' approach, where human wealth advisers are supported by robo-advisers in advising HNWIs. With the ease of personalization achievable with the robo-advisor solution, the bionic advisory engine is able to provide a unique experience to investors and allow relationship managers to focus more on the interaction with their clients.

The growing emphasis on digital transformation in terms of wealth management across the entire value chain of products and services by financial institutions also leads to the use of robo-advisers in the financial services sector. From a company perspective, the cost-saving advantage of robo-advisers is that it

can reduce personnel and asset costs while serving a larger number of customers. By utilizing this scalable technological solution, businesses will be able to manage relationships with their end clients more effectively which in turn can grow their asset under management. This creates a win-win situation for both financial institutions and investors.

With this rapid development and changing trends, financial organizations are still adapting to regulations, posing interesting challenges and opportunities for financial institutions and private investors alike. Changing regulations, such as [the implementation of MiFID II in Europe and the 401\(k\) retirement plans in the U.S.](#), transparency in disclosure and decision-making, and product-consumer suitability from financial institutions that can only be scalably achieved through a more digitized form of engagement are driving the change.

## REGULATORY DEVELOPMENTS IN ASIA

Hong Kong and Singapore are two of the most developed wealth management centers in Asia, and with the emergence of new robo-advisory platforms, both have tightened regulations to ensure the suitability of advisory and recommendations. The Hong Kong government requires all online advisory platforms to be registered or licensed if the business involves regulated activity; online platforms have to provide details on how they determine the risk rating for investment products, they have to inform clients of the scope of the services and the limitations; a

robo-advisor has to detect possible algorithmic failures and halt trading when it is necessary. As most robo-advisers use an extremely scattered variety of investment algorithms and methodologies, the robo-adviser solution providers are expected to have a ‘suitably-qualified person’ to test and review the algorithm used to generate investment advice and inform clients of how and when the algorithm will rebalance the portfolio.

In the case of Singapore, the regulator is implementing similar changes to regulations, with licenses required for robo-advisory, compulsory independent audit of digital advisory after first-year operations and involvement of seniors who have relevant experience in fund management. After all, it is not just all about the user experience or interface of the robo-advisers but the depth of the domain expertise involved in the technology.

## STAYING ABREAST OF CHANGING REGULATIONS

With regulators introducing stringent suitability rules on the sale of investment products by online distribution and advisory platforms, the practitioner is required to continually learn and become technology fluent to keep pace. The [recent U.S. Securities and Exchange Commission enforcement against robo-advisers that were making false statements](#) about their investment products should serve as a reminder that registered investment advisers are all subject to the regulatory requirement and must adopt adequate policies and procedures to ensure compliance.

Although technology may change how an investment advisor operates, financial regulators will still expect full compliance with all regulatory requirements. These changes in regulation necessitate that clients form a partnership with solution providers that not only excel in technological prowess, but also have extensive experience in the financial management industry.

Coupled with such changing regulations to protect end consumers, there has also been an increasing push for transparency around the financial advisory business. Accordingly, financial institutions cannot continue the traditional “product pushing” business model and must transition to a more customer-centric model whereby they look to personalize their service offerings.

At the heart of this sea change is the ability of institutions to truly understand their end customers. In addition, the tremendous cost of transitioning to digitized services also requires modular “build versus buy” solutions, where a close partnership with the solution provider to provide bespoke solutions will add value to the end customers. To ensure successful integration of robo-advisory solutions into the existing product offering, financial institutions are now working with external digital solutions providers that have extensive knowledge in these areas to provide a comprehensive suite of products which can be integrated. Simply coined a “bank in a box” solution, this would seem a natural response to the necessity of implementing an integrated platform to ensure a digitally-transformative, holistic service for wealth management end customers.



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