

# FSI*Review*

Deloitte Southeast Asia  
Financial Services Newsletter  
Issue 13, November 2016

## Driving FinTech innovation in financial services

- Connecting Global FinTech: Hub Review 2016
- Building a Smart Financial Centre
- Blockchain emerges from financial toolbox
- The future of general insurance
- The future of investment management



**Deloitte.**

# Foreword



It is clear to business leaders everywhere that the financial services industry has never been in such a state of rapid evolution, being disrupted by continuous innovation while being subjected to external pressures such as increased regulation and new competitors that put profits at risk.

From our experience in serving financial institutions, FinTech disruption doesn't have to spell doom for traditional firms. Indeed, the influence of FinTechs can be a net positive for the incumbents, particularly those who are able to make the right strategic choices with passion and urgency. Incumbents can indeed thrive in a disrupted world. They can learn from history and be proactive in managing the change instead of being passive participants. But first they need to understand how FinTech effects them before taking advantage of all the potential benefits FinTech offers.

In this issue of *FSIReview*, we explore strategies to help financial institutions define the future success of their businesses in the face of digital disruption.

We begin with the Singapore Highlights of the Connecting Global FinTech: Hub Review 2016 report, published by Deloitte in collaboration with All Street Research. The research findings reveal that Singapore, as a leading international financial centre, is a serious contender for the number one spot in FinTech. Indeed, in the overall Index Performance Score, both Singapore and London scored 10 – the best score among all the Hubs surveyed – ahead of many other well-established Hubs such as New York, Silicon Valley, and Hong Kong.

We also hear from Mr Sopnendu Mohanty, Chief FinTech Officer of the Monetary Authority of Singapore, in an exclusive interview where he shares his views on FinTech and how Singapore is working towards becoming a world leader in the FinTech industry.

Next, we take a closer look at our collaboration with the World Economic Forum in the Future of Financial Services project exploring disruptive innovation in the industry. We examine blockchain as an enabler of disruption based on more than 12 months of research and engagement with over 200 industry leaders and subject matter specialists through interviews and multi-stakeholder workshops.

We then take a peek into the future of general insurance, in a report that builds off of our work with the World Economic Forum report and looks at disruptive innovations in the insurance sector forcing transformation such as the emergence of blockchain in insurance and the expansion of digital intermediaries.

A trend that has also been generating a significant amount of attention from the industry has been the shift towards an open application programming interfaces (APIs)-oriented approach. In our final article, we explore how open API allows organisations to leverage their existing IT assets and technology architecture to generate new business value via mobile apps, connected devices and the cloud.

We hope that you will find this edition of the *FSIReview* an interesting and insightful read.

**Ho Kok Yong**  
Southeast Asia Financial Services Leader

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# Connecting Global FinTech: Hub Review 2016

The global FinTech market is quickly evolving and the Hubs within the ecosystem have demonstrated the ability to mature in a relatively short amount of time. Global rankings are fluid and influenced by rapid changes in the industry, which by their nature often do not capture the unique intricacies of each Hub, and as such a holistic picture is somewhat difficult to capture.

For this report, we took the combined scores of each Hub from three prominent business indices (the World Bank Doing Business Index, the Global Innovation Index and the Global Financial Centres Index) to provide a consolidated "Index Performance Score" in order to assess the Hubs on a quantitative basis. A lower Index Performance Score reflects that the Hub is more conducive to the growth of FinTech.

The top five Hubs emerging with an Index Performance Score of 25 or less were London, Singapore, New York, Hong Kong, and Silicon Valley. This is no surprise as their leading position is based on decades of evolution as global financial centres, or in the case of Silicon Valley, in technology.

These Hubs already have the appropriate ingredients (i.e. specialised talent, progressive regulatory bodies, investment capital, government support, etc.) and the strong collaboration within the ecosystem that is required to develop leading global FinTech sectors, and which are capable of innovating across the financial services and technology landscape.

That is not to say that this dominance can, or will, continue indefinitely. Each of these centres depend upon a range of contributory factors and conditions that are often subject to changes beyond their control. It will therefore be critical for all hubs to continuously evolve their approach to support the growth of entrepreneurs and investors globally.

There is ample opportunity for the next group of 12 Hubs with an Index Performance Score of 26-150 to develop and maintain their own FinTech market. In some cases their position has been achieved by focusing on particular technologies or innovation areas within financial services: for example, Belgium has a strong capability within identity management and KYC; Ireland in servicing the asset management industry; and Shanghai in payments. Hubs such as South Korea are adopting a top-down approach, with the licensing of two new internet banks to help drive the FinTech ecosystem.

The final grouping consists of the four countries with scores above 150, namely Mexico, South Africa, India, and Kenya. These Index Performance Scores are however not necessarily negative indicators for the development of a FinTech sector in those countries. Factors that hamper growth in mature markets may indeed be the lifeblood of growth in developing markets; limited regulation of the financial services industry, and low penetration of traditional banking and insurance services is more conducive to FinTech growth.

### **Innovation Areas – Customer is King**

When we asked the Hub Representatives to identify focus areas of innovation, E-commerce (selected by 9 Hubs) and Retail Banking (selected by 8 Hubs), both direct-to-consumer areas of financial services, take the top spots in the Innovation Areas. This is encouraging, as it shows that the first order benefits of FinTech are likely to flow to where they are most needed: making financial services simpler and more accessible to the end customer. Indeed, as we have seen, the notable rise of challenger banks in a number of locales can be attributed to successfully focusing on the customer experience.

Payments is also attracting significant interest, along with Cybersecurity, which is fundamental to the delivery of digital propositions and therefore core to much of FinTech. Another area where we are seeing growth is in Wealth Management, with technology solutions such as roboadvisory platforms becoming more popular for helping the mass affluent to better manage their money.

### **Technologies – Analytics, Data, and Mobile**

Common to many industries, data also dominates in FinTech, with Data Analytics and Big Data being in the top group of technologies that are driving innovation. The focus on data is broadly reflective of current trends in the overall technology sector, where increases in computing power have enhanced our ability to analyse large amounts of data. Mobile is a dominant technology, unsurprisingly, as people increasingly consume financial services through their mobile devices. Likewise, APIs feature heavily, suggesting that restructuring infrastructure to ensure connectivity between different systems and across the ecosystem is a big focus.

Market participants looking for expertise in Digital Identity might be wise to look to Belgium, France, India, Israel, Kenya, Singapore, South Africa, and South Korea where there appears to be significant focus on the subject. Machine Learning (8) is, as expected, concentrated in the Hubs of developed countries, with the US playing a leading role through New York and Silicon Valley.

### **Challenges for FinTech – It's all about the Culture**

The overall picture is clear. Limited Exit Opportunities and Risk Averse Culture are frequently cited as challenges that prevent the growth of FinTech. This suggests that nurturing a healthier approach to risk taking in the investment community will encourage the development of natural investment cycles until the ecosystem is mature enough to support itself in a manner similar to the Silicon Valley Hub. Both early stage investors and corporate acquisitions are important development requirements for the FinTech sector. Lack of exit opportunities most likely reflects a lack of depth in private equity and small cap markets.

Unsurprisingly, the High Cost of Living is a key issue in developed markets. A number of Hubs reported Small Size of Market as a challenge, suggesting that cross-border business is still problematic for FinTech firms. On the positive side, existing Regulatory Barriers don't appear to be as big an issue as may be expected (although 5 Hubs did cite Regulatory Uncertainty).

### **Governments, Get with the Programme!**

The Hub Representatives assessed their local Hub on a scale of 1 (Not Good) to 5 (Excellent) across six Hub Indicators: regulation; foreign startups coming to the Hub; proximity to customers who will try something new; proximity to subject matter expertise; innovation culture; and government support.

The top five Hubs by Index Performance Score also score high ratings on the six Hub Indicators, with 17 of the 18 Hub Indicators being 'Good' to 'Excellent' for Singapore, London and New York, and 11 of the 12 Hub Indicators being 'Better than Average' or higher for Silicon Valley and Hong Kong.

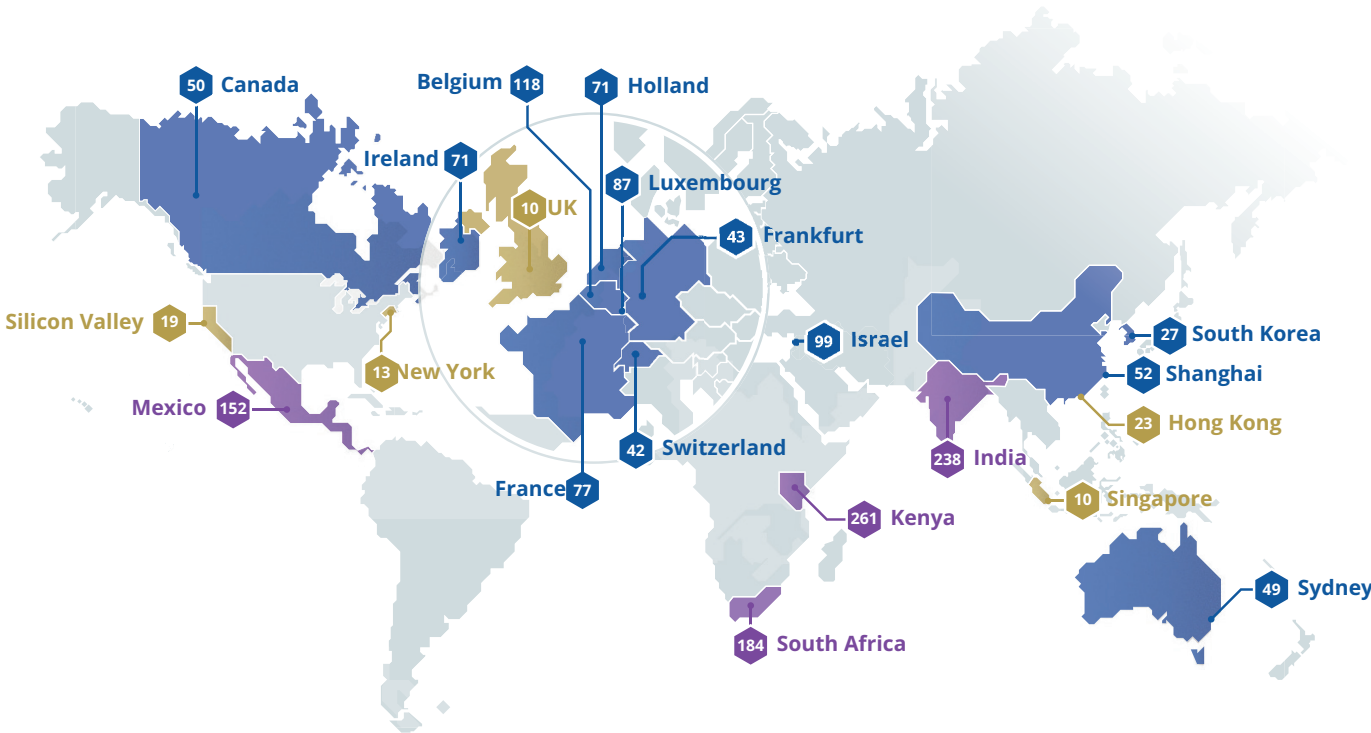
The Low Innovation Culture indicator is cited as an issue in some of the Hubs, located in both developed and developing countries. This also aligns with the stated challenges for FinTech of Risk Averse Culture, Low Access to Capital and the Small Size of Market.

Low levels of government support have also been identified as an issue, with nine Hubs reporting Government Support as being 'Not Good' or 'Average'. This is an issue that needs to be monitored.

Our analysis of the Global Hubs has concluded that strong government support at the early stage of ecosystem formation is essential. Once the Hub is established, government support, progressive regulations, a culture of innovation and collaboration, and strong financial services and private investors are the ingredients that enable the growth of a FinTech hub. As the sector evolves, it will be interesting to see how the Global Hubs evolve accordingly.

# Global FinTech Hub overview

## Index Performance Score



## Index Performance Score

- 1-25
- 26-150
- 151+

A lower Index Performance Score indicates that the Hub is more conducive to FinTech growth based on the amalgamation of three global indices.

# Singapore Hub Profile

Singapore is a leading international financial centre and a serious contender for the global number one spot in FinTech. Government support for FinTech is strong with S\$225m committed to the development of FinTech projects and proofs of concept. Other initiatives include the Regulatory Sandbox, Cloud Computing Guidelines, Strategic Electronic Payments, FinTech Office, MAS Innovation Lab, International Technology Advisory Panel and Talent Development.

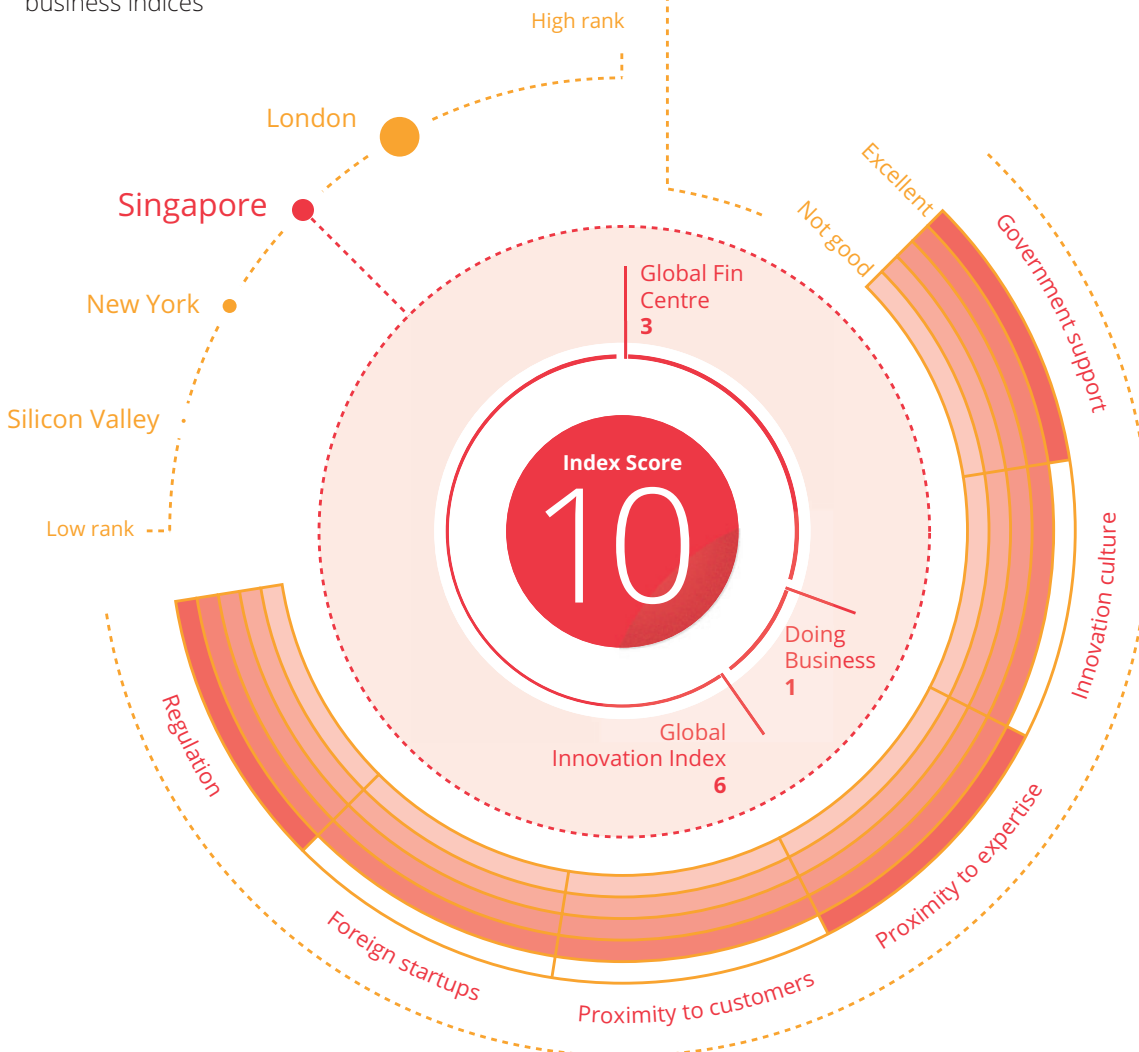
**Hub representative:**  
Monetary Authority of Singapore  
**Chief FinTech Officer:**  
Mr Sopnendu Mohanty

## Index Performance Score

The aggregate rank of the Hub using three renowned business indices

## Hub indicators

Self-evaluation of the Hub in six key areas



### Top FinTech companies

Dragon Wealth, Call Levels, Fastacash, MatchMove Pay, MoolahSense, Crowdonomic, Otonomos, Fitsense.

### Big investors

Full range of angel, VC, corporate venture divisions and government entities. Examples include: GIC, Temasek, EDBI, Singtel Innov8, Life.SREDA, 500 Startups, Sequoia Capital, Jungle Ventures, Golden Gate Ventures, Quest Ventures.

### Success stories

MDAQ is backed by prominent investors, valued at over \$250m. Also, it is noteworthy that, as well as startups, incumbent financial institutions in Singapore are proactively embracing FinTech.

The move by the MAS to bring in industry talent to drive FinTech forward paid rich dividends and positioned the MAS as the leading regulator to drive progressive thinking in FinTech innovation.

### The future

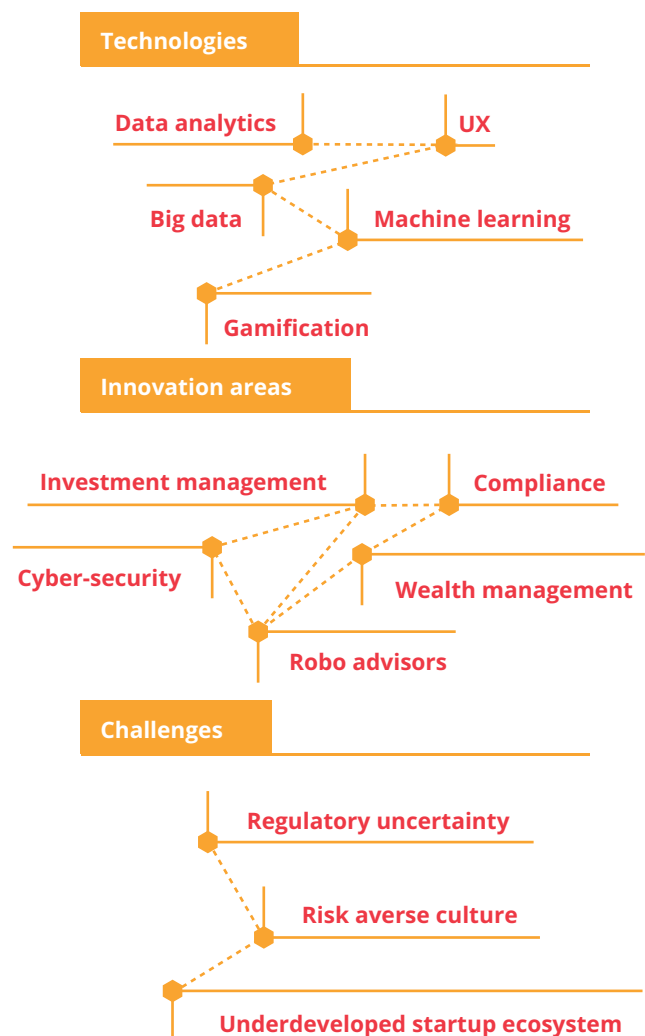
Singapore will host the FinTech Festival from 14 to 16 November 2016. Other initiatives include the Unified Point of Sales (UPOS) roll-out of terminals, Central Addressing System (CAS) payment technology, Trade Finance distributed ledger proof of concept, SoCash cash withdrawal technology, and Banking-as-a-Service.

### Best work spaces and accelerators



- |   |                                   |
|---|-----------------------------------|
| Standard Chartered Bank's Exellerator             | Block 71 BASH                     |
| Aviva Digital Garage                              | SPH Plug & Play                   |
| Ocbc Open Vault                                   | TCF-PnP Program                   |
| UBS Evolve  | Startupbootcamp FinTech           |
| HSBC's Innovation Lab                             | InspirAsia                        |
| Citibank's Corporate and Consumer Innovation Labs | Fatfish MediaLab                  |
| Metlife's Lumenlab                                | The Joyful Frog Digital Incubator |
| Allianz Digital Labs                              | FocusTech Ventures                |

### Hub features



The article is an excerpt of the report, "Connecting Global FinTech: Hub Review 2016," developed in collaboration with All Street Research. To receive a copy of the full report, drop us an email at [sgindustries@deloitte.com](mailto:sgindustries@deloitte.com).

# Building a Smart Financial Centre

Financial Technology (FinTech), which involves using technology to devise new financial, services and products is fast gaining global momentum.

**N**ot to be outdone, the FinTech industry is evolving at varying degrees in different countries in Southeast Asia and playing an important role in this growth are the different programmes that exist in the region. One country at the forefront of this phenomenon is Singapore.

In November 2014, Singapore embarked on the Smart Nation Programme, which seeks to harness info-comm technology, networks and data to support better living, create more opportunities, and to support stronger communities. The financial sector is an integral part of Singapore's ambition to be a Smart Nation. The Monetary Authority of Singapore (MAS) seeks to create a Smart Financial Centre where technology is used pervasively in the financial industry to increase efficiency, create opportunities, allow for better management of risks, and improve lives. We sat down with MAS Chief FinTech Officer, Mr Sopnendu Mohanty, to discuss his views on FinTech and how Singapore is working towards becoming a world leader in the industry.



**Sopnendu Mohanty**  
**Chief FinTech Officer**  
**Monetary Authority of Singapore**

Mr Mohanty is responsible for creating development strategies and regulatory policies around technology innovation at MAS. Prior to joining MAS, Mr Mohanty was with Citibank as their Global Head of the Consumer Lab Network and Programs, which included driving innovation programs and managing innovation labs across multiple geographies globally.

Mr Mohanty has spent 20 years in the Asia Pacific (APAC) region and held various roles in technology, finance, productivity, and business development. He was Citibank's APAC regional head of branch operations along with heading the Consumer Innovation Lab in Singapore. He spent a significant time in Japan, where he was Citibank's Retail Business Development head and also did leadership stints in various functions within operations and technology. Globally, he played a significant subject matter expert role in driving Citibank's global smart banking programme, to transform bank's physical network to digital first, smart & innovative, client centric and highly delightful customer engagement centre. Mr Mohanty has also co-authored various patented work in area of retail distribution of financial sector.

### 1. How would you describe the FinTech environment in Singapore?

The FinTech landscape is fast evolving, with a proliferation of technological innovations and solutions. Singapore's FinTech landscape has reached a level of maturity which has all elements of ecosystem, in some shape or form. Our FinTech landscape is vibrant and well-connected. We have 1200+ financial institutions, 5000+ start-ups and 200+ FinTech start-ups and we are ranked fourth amongst key FinTech regions such as the UK, US, Germany, Hong Kong and Australia.

The FinTech landscape in Singapore is at the right stage where the platform can be enhanced to truly build a world-class FinTech ecosystem. Technology makes up a large part of the FinTech landscape and how developed we are in the technology-side of FinTech will determine the true character of FinTech in Singapore.

Here in Singapore, we are in the process of establishing technological capabilities through our universities, research centres, and banks' innovation labs as well as through the MAS' programmes and policies to partner with the industry on various strategic, technology-driven financial services initiatives.

Singapore is a major financial centre of international repute. Singapore is ranked third in the Forex Global Ranking in terms of size and second in terms of OTC Interest Rate Derivatives in Asia in the 2013 Triennial BIS Survey. According to SWIFT, Singapore was also ranked second in Offshore RMB Clearing Centre in terms of size.

Singapore has established itself as a leading business hub in the region with its sound legislation and policies. Singapore has consistently done well in internationally recognised world rankings, including:

- First in Investment Potential Ranking – BERI Report 2015
- First in Ease of doing business – Doing Business 2014, World Bank
- First in Global Innovation Ranking – Global Innovation Index 2015, Cornell, INSEAD, WIPO

- Second in IP Protection Ranking – Global Competitiveness Report 2013-2014, World Economic Forum

As a premier knowledge, financial and business hub, Singapore's FinTech landscape is set to grow exponentially over the next few years.

### 2. What are the big trends you've seen in FinTech over the past few years? Which developments excite you the most?

The biggest and most sustainable trend in the FinTech space will be its potential to revolutionise financial inclusion. This is also the development that is the most exciting to see being developed.

Technology will enable financial services in a big way by providing individuals and business owners' access to capital and financial services which they would not have access to.

Once you provide the underserved communities with access, it will pave the way for a new economy, which until now, has not been fully realised. FinTech will play a significant role in enabling financial inclusion. In my opinion, this is the single biggest opportunity.

In terms of core asset classes, the retail space has had most fanfare, especially in alternative payment methods and lending as well as in the distribution of insurance products. Insurance, especially, has been very much limited in its reach due to distributional inefficiency. The entire insurance sector is in for a remarkable transformation with more digital distribution of products, and the use of big data to price insurance products dynamically and competitively.

For the financial markets and corporate banks, FinTech will play a large role in upgrading existing infrastructure which is not necessarily the most efficient. This may be based on distribution ledger platforms and will make use of open API architecture.

### 3. In your current post as the Monetary Authority of Singapore's Chief FinTech Officer, what's your take on FinTech? Is it a disruptor or enabler?

FinTech is a huge enabler. FinTech has helped the financial services industry improve profitability and be more agile when addressing the evolving customer demand.

Millennials are going to be the largest adult segment by the end of the decade and financial institutions are more and more challenged by the fact that this segment is demonstrating different behaviours compared to older generations. FinTech can help fill up the gap between financial institutions and their changing customer base by creating a new architecture of engagement via digital platforms and creating new business models.

However, I would also say that FinTech is disruptor; but not in the traditional sense. When people talk about disruption and disruptors, they normally tend to refer to taking away existing business models and creating an alternate opportunity.

Take for example, the ability of FinTech to potentially revolutionise financial inclusion. Traditionally, banks would not normally see the underserved as a potential market to tap into. As a disruptor, FinTech has created an opportunity for a new market whereby individuals and SMEs alike can gain access to capital where they previously could not.

### 4. What challenges do you see on the horizon for FinTech? How will these challenges affect Singapore and the island city's position as a pre-eminent financial centre in Asia?

The biggest challenge would be the ability of financial services firms to adopt the use of FinTech. Historically, the financial sector has been a laggard in terms of its infrastructure technology. Financial services firms have always been at the forefront of front-end and middle office technology, where companies use technology to create complicated business models and financial products. However, when it comes to infrastructure technology, the financial services sector has been falling behind.

This is the result of the lack of skilled talent in the FinTech space. In order to effectively adopt FinTech in the industry, Singapore is investing heavily to transform itself into a knowledge hub for future investors.

At the same time, the same macro and micro economic shocks that have affected the world present both challenges and opportunities to FinTech. First, European financial institutions, and by extension FinTech firms, face continuing uncertainty about the future of critical market access issues such as passporting rules and regulatory uncertainty in a post-Brexit world. Will there be large scale capital raising by UK subsidiaries of European institutions that then affect the availability of funding for FinTech start-ups? What will happen to freedom of movement for talented developers? The future is hard to predict at this point in time.

As regulators turn their eyes towards FinTech, and the risks that arise from these alternative finance products, one can count on more rules and restrictions. Cross-jurisdictional regulatory differences will arise as each country deals with idiosyncratic FinTech blow-ups in their own way. These can include incompatible rules across jurisdictions, which will not only make it hard for FinTechs to navigate the landscape but also hinder the passports for new products.

Singapore believes in working within international bodies to accelerate the discussion of standards and rule harmonisation to help the industry overcome these challenges.

### 5. To what extent do you think FinTech can be encouraged by government regulation and what's being done to allow innovation to flourish in Singapore?

The financial services industry is a regulated industry and a regulated industry needs a regulator that is willing to think progressively on how to apply technology for in order for innovation to flourish.

The financial sector is an integral part of Singapore's ambition to be a Smart Nation.

MAS seeks to create a Smart Financial Centre where technology is used pervasively in the financial industry to increase efficiency, create opportunities, allow for better management of risks, and improve lives. FinTech is a key ingredient in building a Smart Financial Centre.

Singapore offers a distinctive value proposition for FinTech development. These include:

- Vibrant and collaborative FinTech ecosystem comprising of start-ups, technology companies, financial institutions, investors, research institutes, institutes of higher learning, innovation professionals, and government agencies;
- Open banking platform via application programming interfaces (APIs) for faster innovation and integration of new and legacy IT systems within the sector;
- "Sandboxes" as safe spaces to experiment and roll out innovative products and solutions within controlled boundaries;
- Financial Sector Technology & Innovation (FSTI) scheme to support the creation of a vibrant ecosystem for innovation; and
- Strong talent pool of researchers, innovators, and experts; and continuously building capabilities in FinTech.

### 6. What initiatives have been developed to attract capital for FinTech in Singapore?

Singapore's FinTech landscape is one of the most vibrant in the world. We have launched several initiatives to attract capital for FinTech in the country.

In August 2015, MAS formed a Financial Technology & Innovation Group (FTIG) within MAS to drive the Smart Financial Centre initiatives. The Group is responsible for formulating regulatory policies and developing strategies to facilitate the use of technology and innovation to better manage risks, enhance efficiency, and strengthen competitiveness in the financial sector. FTIG has also been constantly engaging the FinTech community to work on various projects, overcome hurdles and most importantly – be part of it.

The development of a vibrant FinTech ecosystem requires close collaboration amongst government agencies in Singapore. A FinTech Office, established on 3 May 2016, serves as a one-stop virtual entity for all FinTech related matters and to promote Singapore as a FinTech hub.

From 14 to 18 November 2016, MAS together with the Association of Banks in Singapore (ABS) will organise the inaugural Singapore FinTech Festival. The week-long Festival – the first of its kind in Asia – will bring together a series of distinct, back-to-back FinTech events. The Festival will provide a platform for collaborations, connections and co-creations within the FinTech ecosystem in Singapore and around the region.

The Singapore FinTech Festival will comprise three components:

- 01. Global FinTech Hackcelerator** – In May 2016, the global FinTech community was invited to ideate and co-create solutions to specific problems or challenges solicited from the financial industry. Up to 20 teams will then be selected from across the world to develop market-ready solutions to these problems over the following months. The selected teams will present their completed solutions at the Demo Day during the Festival.
- 02. MAS FinTech Awards** – The Awards will recognise innovative FinTech solutions that have been implemented by FinTech start-ups, financial institutions, and technology companies.
- 03. Conferences and events** – The Festival will include the MAS FinTech Conference, ABS-MAS Tech Risk Conference, ABS-MAS Regulation Technology (RegTech) Forum. The Festival will also feature other community and networking activities like the Innovation Lab Crawl where innovation labs across Singapore will open for visits to their labs, where new products and solutions can be tested. It will be a good opportunity to network with start-ups and key innovation executives.

MAS has also organised several Singapore FinTech roadshows as part of a series of global outreach initiatives to draw the attention of the global FinTech community to the possibilities for innovation and collaboration that Singapore's growing FinTech ecosystem offers. The first event was held in New York in April 2016. More than 200 members of the FinTech community, including bank and investment executives, FinTech start-ups, technology experts, and innovation practitioners attended the event. Events in other cities such as Sydney and Mumbai have followed suit.

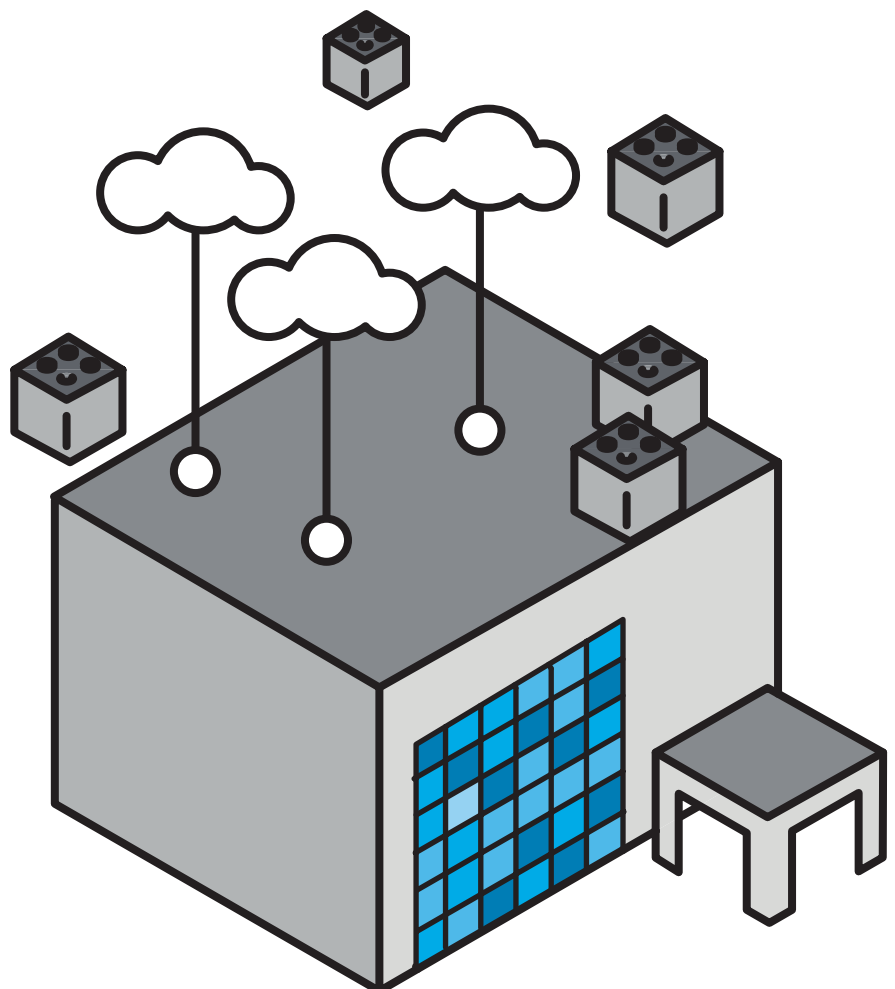
### 7. How big a role will FinTech play in helping Singapore realise its vision to be recognised as a premier wealth management hub?

Regional private banks face an increasingly sophisticated clientele who expect portfolio level performance and risk management. This is no trivial change - one can extrapolate from the challenges that banks have with internal models used for risk managing and valuing their own trading books to infer the difficulties with doing this at large scale for clients too. Think of regional clients with significant real estate holdings, commodities exposure, and FX risk that organically arises from having family businesses that span across volatile regional currencies - how will wealth managers advise these clients holistically?

We expect that many private banks will not choose to build these portfolio risk systems in-house given the diversity of market data, and models. Instead they may either look for a utility like solution for data collation, or connect to FinTech firms with the deep expertise to do so. We anticipate this to result in a profound shift in how clients manage their risks and perhaps increase their willingness to participate more fully in the markets.

Therefore, we would like to promote the formation of a cluster of sophisticated risk analytics and portfolio management FinTech companies to meet the needs of wealth managers as they transform their practices to meet new customer expectations. The mass affluent market will benefit from the trickle down of technology and know-how to the burgeoning robo-advisory platforms. We expect a virtuous cycle of increasing scale economies.

**Our interview with Mr Mohanty was first published in the September 2016 issue of Performance, Deloitte's triannual digest for global investment management professionals.**



# Blockchain emerges from financial toolbox

**D**istributed ledger technology, more commonly known as blockchain, has great potential to drive simplicity and efficiency through new financial infrastructure and processes, but it should not be seen as the only technological tool forming the foundation of next generation financial services. This is the main finding of a newly released World Economic Forum report entitled, “Opportunities & obstacles: Blockchain and the future of financial infrastructure”. The report was developed in conjunction with Deloitte.

The Distributed Ledger Technology project is the most recent phase of the Forum’s ongoing Disruptive Innovation in Financial Services work. The report draws on over 12 months of research, engaging 200+ industry leaders and subject matter experts through interviews and multi-stakeholder workshops.

“Throughout the last 50 years, the financial services industry has embraced new technologies that now seem commonplace but were once cutting edge, including ATMs, credit cards, and electronic trading,” said Giancarlo Bruno, Senior Director, Head of Financial Services Industries, World Economic Forum. “In the same way, blockchain technology is moving from the margins of the finance industry to the main stage, and will continue to help build innovative solutions across the industry, becoming ever more integrated into the identity of financial services.”

According to the report, the industry is at a unique inflection point with tremendous opportunity, as multiple technologies are set to drive the next wave of financial services innovation. Therefore, distributed ledger technology should be seen as a critical part of any successful financial services program today. However, the report also points out key hurdles ahead of large scale implementation of blockchain.

“Though technological innovation has been fundamental to industry transformation, there are other steps that will play a role in this disruption as well. Before full adoption is possible, there are factors that need to be addressed, including an uncertain regulatory environment, lack of standardisation efforts, and the need for a formal legal framework,”

**Bob Contri, Deloitte Global Financial Services Industry Leader**

“The ability to use blockchain seamlessly across borders is a feature that is transformative for the financial services industry. Southeast Asia – a region where there are marked differences in operational and regulatory landscapes, and significant diversity in the level of development of financial systems – has the potential to gain the most from the use of this technology. Blockchain serves to increase transparency and improve efficiency for financial institutions. With the right investment and close collaboration between private and public sectors, blockchain can improve the way business is done,” shared Ho Kok Yong, Southeast Asia Financial Services Industry Leader, Deloitte Southeast Asia.

Additional findings from the report include:

- **Blockchain is not the only solution:** Instead, it should be viewed as one of many technologies that will form the foundation of next generation financial services infrastructure.
- **There is no “one-size fits all” solution:** Applications of blockchain will differ by use case, each leveraging the technology in different ways for a diverse range of benefits.
- **Emerging capabilities will deepen blockchain’s impact:** Platforms such as Digital Identity<sup>1</sup> and Digital Fiat<sup>2</sup> will amplify benefits and broaden the application of distributed ledger technology to new industries.

- **Collaboration will yield the strongest progress:**

The most impactful blockchain applications will require deep collaboration between incumbents, innovators and regulators, adding complexity and delaying the implementation horizon.

- **Innovations in blockchain are challenging the status quo:**

New financial services infrastructure built on distributed ledger technology will re-draw processes and call into question the practices that are foundational to today's business models.

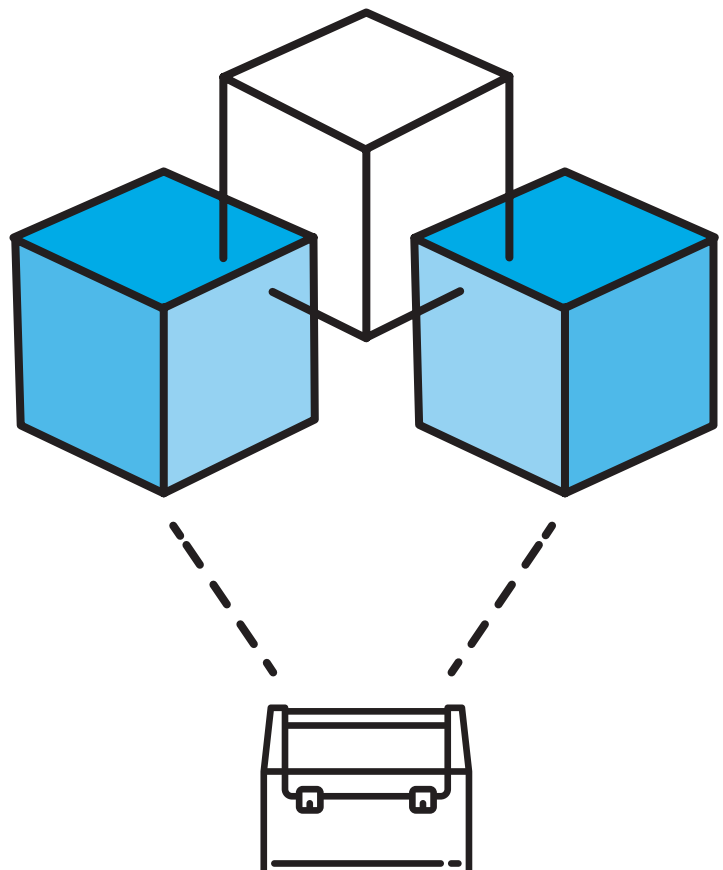
The article is an excerpt of the report, "The future of financial infrastructure: An ambitious look at how blockchain can reshape financial services," developed with the World Economic Forum. To receive a copy of the full report, drop us an email at [sgindustries@deloitte.com](mailto:sgindustries@deloitte.com).

"While there is no doubting the transformative potential of blockchain technology, it is not a blanket cure for inefficiency in Financial Services. At this stage of evolution, the critical task is knowing where to focus your efforts. Blockchain is expected to have the greatest impact when applied to business problems involving: a shared repository of information, multiple writers, minimal trust, the presence of intermediaries and interdependencies between transactions. Without these conditions, Blockchain may not be the answer," added Rob Galaski, partner with Deloitte Canada. Rob also leads the Deloitte team engaged on WEF's Disruptive Innovation in Financial Services work.

While the industry will need to address key hurdles to implementation, distributed ledger technology will drastically challenge the status quo. "The financial services infrastructure will be radically changed by blockchain technology, as it will re-draw processes and call into question policies that are the groundwork of today's business models," Jesse McWaters, Project Lead, Disruptive Innovation in Financial Services, World Economic Forum. "Our research looks to the future state of blockchain technology, and by starting this conversation, we believe this will help further build perspective for what is to come."

<sup>1</sup>Digital Identity platforms refer to a fully digital system for storing and transferring identity attributes that could be directly integrated into distributed financial infrastructure.

<sup>2</sup>Digital Fiat (legal tender) currencies are issued by central banks and could be employed within distributed financial infrastructure, ensuring the availability of liquidity even in the event of systemic instability.



# The future of general insurance

General insurance, it will surprise no one to hear, is a risk-averse business. The resulting lag in innovation has led to a growing gap between customer expectations and insurers' ability to fulfil them. The industry is now ripe for disruption.

In the latest report Deloitte developed with The World Economic Forum, we made a bold prediction about insurance: **While retail banking will experience the most imminent effect of disruption, the greatest impact of disruption is likely to be felt in the insurance sector.**

Compared with other financial services, the future for general insurance is more uncertain because it's being shaped by forces inside and outside the industry.

Within insurance, 2016 is shaping up as the inflection point for "InsurTech." Many new entrants have emerged, from next generation distribution intermediaries to peer-to-peer insurers to reinsurance platforms. Each exploits severe friction points among customers. Global insurers and brokerages have launched innovation programs and become one of InsurTech's most active investors.

Outside the industry, transformative forces like self-driving cars and the sharing economy have made shocking progress in the past year. They will change the way property is owned and used. And then there are enabling innovations such as big data, machine learning, and distributed ledger technologies, which offer new ways for insurers to transcend their operations. All are poised to change how insurance is structured, consumed, and provisioned in the future.

"The financial services industry is experiencing vast and varied transformation – and insurance is no exception. New technologies and changing customer behaviours may result in a market that looks very different from the one we see today."

**Raj Jutta, Deloitte Southeast Asia Insurance Sector Leader**

We explore how these emerging transformative forces inside and outside of the insurance industry may transform the future market landscape.

## Implications of transformative forces

What are incumbent firms to make of these emerging forces? Several, often competing, outcomes seem likely.

Commercial entities might assume or represent risks that are traditionally personal lines coverages. Insured risks might be broken down by configuration and duration. Personalised risk pricing could lead to un-pooling of risk across customers.

Meanwhile, safer cars and properties could reduce and homogenise risks, making insurance a commodity. On the other hand, the separation of origination and underwriting could bring consumers more innovative, specialised, and competitive insurance offerings.

Some of these implications may be complimentary to one another, while others may be contradictory depending on how incumbents and innovative new entrants respond to the emerging transformative forces.

## Commercial ownership of policies:

In the future, commercial entities may represent a substantial share of liabilities associated with personal assets. Many sharing economy platforms already aggregate and represent individual customers' insurance demand, so that premiums are included in the per-usage fees customers pay. In addition, peer-to-peer insurance providers aggregate a number of individual risks and represent them to traditional insurers. Self-driving cars and advanced driver assisted systems (ADAS) could change who owns insurance policies. Most of the liability associated with self-driving cars will stem from manufacturers rather than drivers. Furthermore, this next generation of vehicles will create new types of risks, such as cyber, that were not associated with auto policies traditionally.

- **Shorter policy periods:** Market demand, not actuaries, are beginning to dictate product development. As a result, we're beginning to see modular products that are specific to the time and use of an asset or a customer's behavior. People might turn coverage on or off at will—opting for insurance when their property is in use or when they deem their risks are greater. Billing will change in turn, as premiums become variable and irregular rather than fixed, and billed on an annual or semi-annual basis.

### Innovations surrounding the insurance industry

Within general insurance, innovation looks very different from the way it did just a few years ago. Back then, most innovation came from incumbent institutions aiming to enhance product features or customer interaction. Today, we're seeing a large influx of new entrants test the boundaries of insurance. Global insurers, having learned from the disruption taking place in other financial services segments, are embracing these new entrants and providing them access to products, data, and capital.

- **Expansion of digital intermediaries:**

The evolution of digital intermediaries can create important implications for traditional carriers. First, they can improve customers' ability to discover the right prices for their risk levels and create a standardised view of insurance products, driving commoditisation of insurance policies. They can act as external research and development arms for traditional carriers to try out innovative business models, without putting their entire business operations at risk, but in doing so, also increasing the importance of first-mover advantages for insurers in securing partnerships with them.

- **Episodic insurance:** A new generation of insurers are enabling customers to purchase coverage only for as long as they need it. These innovators are sweeping away traditional policies and replacing them with on-demand, micro-duration coverage, changing not only the way insurance is consumed but also the way risks are distributed.

### Innovations outside of insurance

Compared with other financial segments, general insurance is especially susceptible to innovations from the industry's periphery. For example, self-driving cars—a staple of science fiction—are about to become a reality. Some of these innovations will disrupt the way products are created and used. Others will bring a new level of sophistication to how insurers run their businesses.

- **Blockchain technology:** The financial services industry has led the effort to apply blockchain technology beyond virtual currency. By distributing ledgers across more computers, blockchain provides a fast, cost effective, and highly reliable alternative to traditional databases and rails of value transfer. Blockchains can also be broken down into infinite number of smaller units—blockchain-based systems can easily break policies down into minutes and seconds to enable episodic insurance distribution. It also enables smart contracts that can be automatically and immutably executed based on measurable conditions. Blockchain applications show early promise for both insurers and customers. It may reduce the cost of premiums and claims given the ease and speed with which blockchain would manage very complex cases, which would reduce the cost of managing these claims to insurers and allow them to pass savings on to the customer. Combined with the IoT, blockchain systems can make parametric insurance in home and auto insurance possible, so that claims can be automatically paid based on predetermined conditions. Blockchain also could facilitate automated premium payments, complex claims assessment, and claims payments.

Each of these forces will have different effects on the insurance business model. Insurers will need to consider their unique business to determine how they want to try and innovate in order to succeed.

### The future looks uncertain but bright

Change has been slow to affect general insurance. It's been that way for some time. It might not be that way much longer. Inside or outside of the industry, transformative forces may create a market that looks substantially different from today. Insurers need to think about how those forces could affect them and what they must do to win in this landscape. In other words, emerging innovations call for insurers to rethink what their long-term strategies will be.

However things turn out, insurers have a few safe bets:

- Seamless digital channels to deliver valuable insights or distribute insurance policies when customers need them
- Access to data that helps price risks and generates new insights
- Partnership strategies for the next generation of digital intermediaries or commercial entities representing customer demand
- Scale and operational efficiency to counteract lost prediction premium or create new value

As for emerging innovators, insurers have a decision to make. Investing in innovative products is important, but no insurer can go it alone. They need a strong relationship with the innovation ecosystem to sense changes, lock in key alliances, and place winning bets against the market evolution.

**The article is an excerpt of the report, "Turbulence ahead: The future of general insurance," developed with the World Economic Forum. To receive a copy of the full report, drop us an email at [sgindustries@deloitte.com](mailto:sgindustries@deloitte.com).**

# The future of investment management

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Application programming interfaces (APIs) allow organisations to leverage their existing IT assets to generate new business value via mobile apps, connected devices and the cloud. APIs have been elevated from a development technique to a business model driver and boardroom consideration. An organisation's core assets can be reused, shared, and monetised through APIs that can extend the reach of existing services or provide new revenue streams.

Applications and their underlying data are long-established cornerstones of many organisations. All too often, however, they have been the territory of internal R&D and IT departments. From the earliest days of computing, systems have had to talk to each other in order to share information across physical and logical boundaries and solve for the interdependencies inherent in many business scenarios.

The trend toward integration has been steadily accelerating over the years. It is driven by increasingly sophisticated ecosystems and business processes that are supported by complex interactions across multiple endpoints in custom software, in-house packaged applications, and third-party services (cloud or otherwise).

The open APIs-oriented approach towards technology architecture is generating lot of attention. APIs is expected to reduce the time to market for various products/ services and lower the cost of build by "plugging in" with open API.

## APIs in financial services

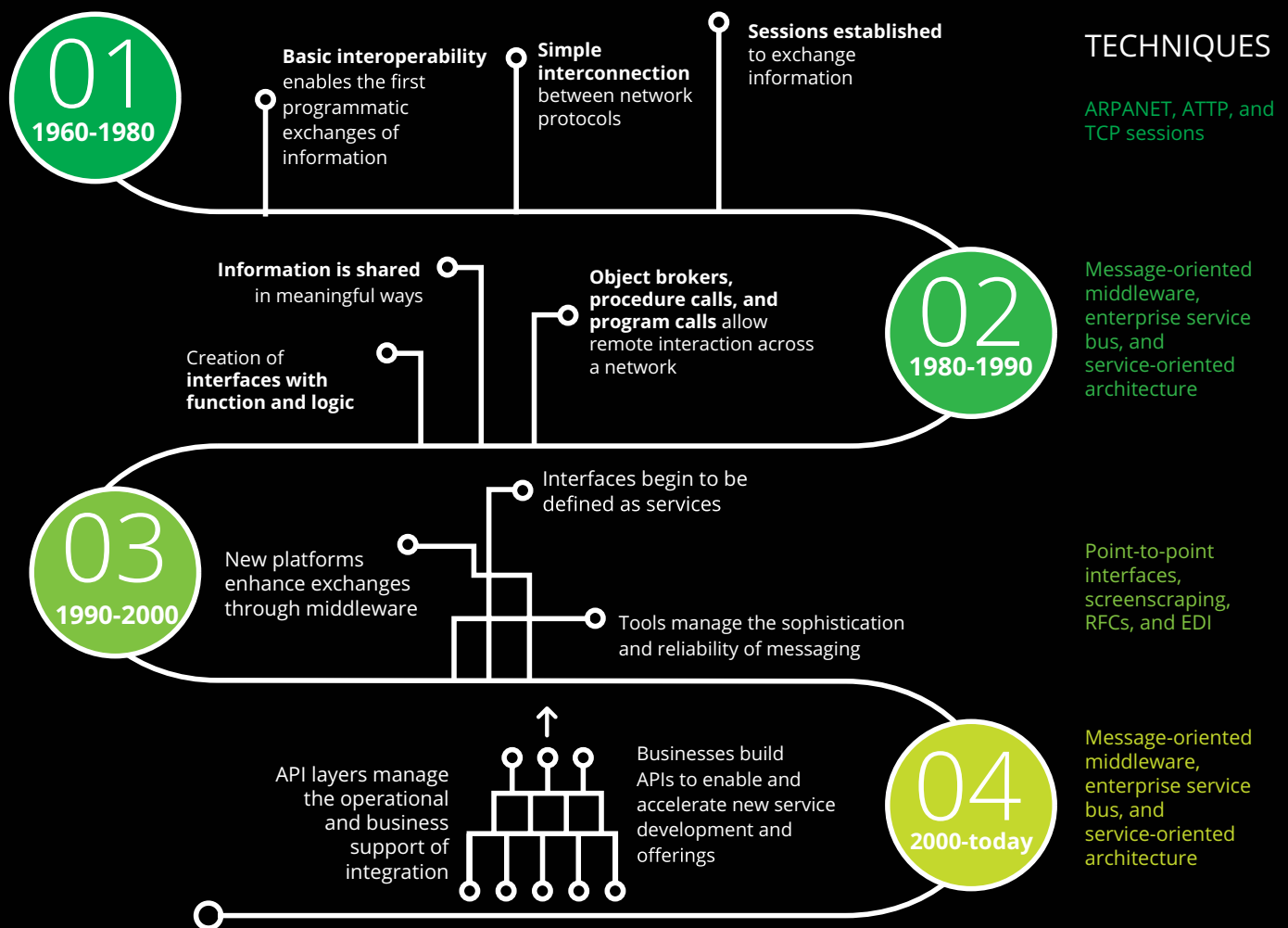
The growth in banks and financial services firms exposing APIs to their legacy systems is primarily driven by the need to deliver more functionality and faster time-to-market. For example, when launching a new digital bank, if every single feature of the digital bank was built in-house, it would take a huge amount of time and investment to build all the functionality needed to run such a bank. Instead, the bank can leverage best-of-breed software and integrate them into their solution via APIs.

Similarly, in the case of the investment management industry where market data is the lifeblood of any organisation's business, getting accurate and timely market data in the requisite format continues to be a time consuming process and evasive process.

However, these businesses now have the option of linking their systems with external data feeds which provide real-time, historical and reference data without the need for complex in-house data management systems. These offerings can also be potentially be sold by investment management firms as additional products over and above the suite of investment management offerings.

# The evolution of APIs

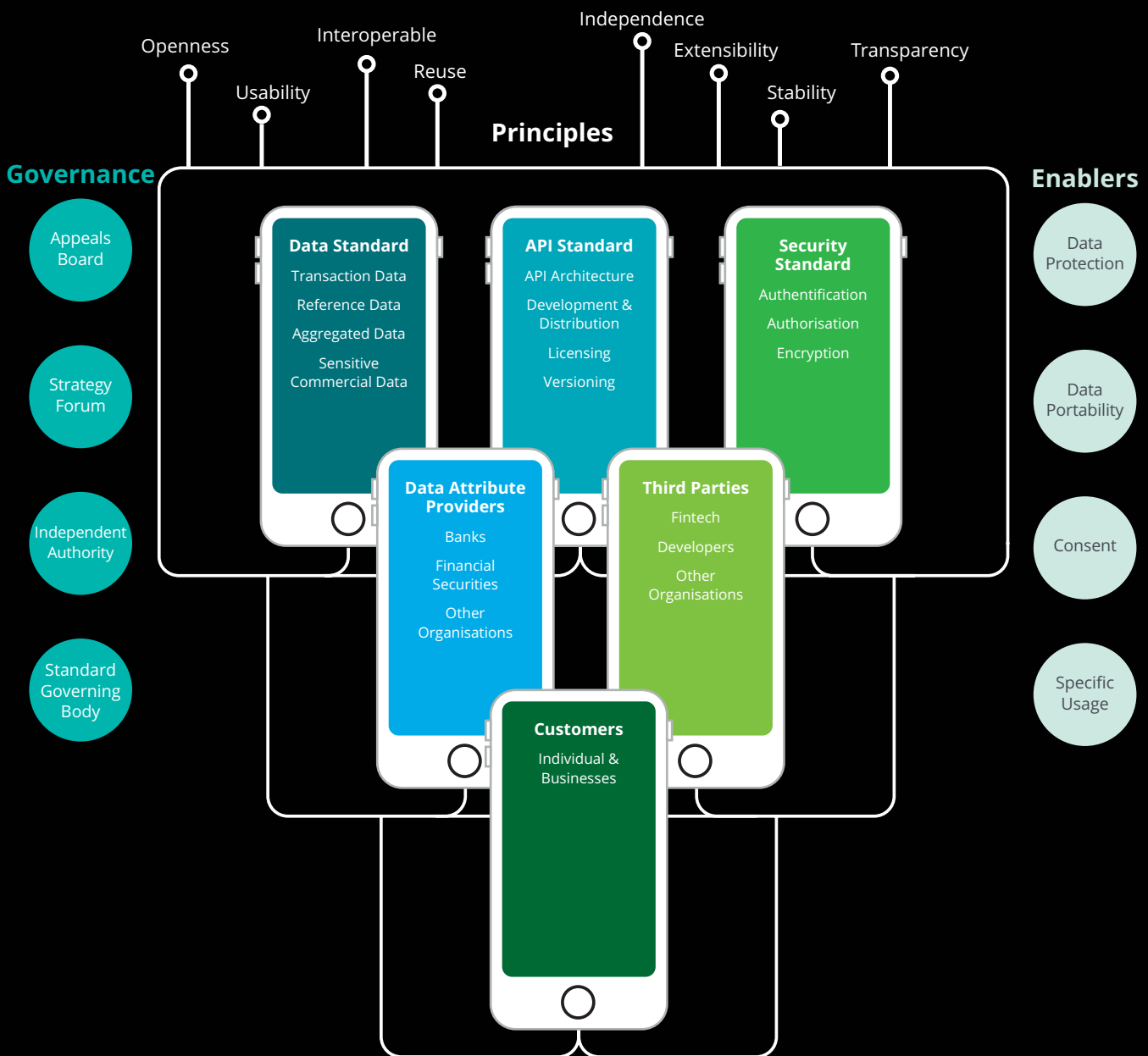
APIs have evolved over the years. There are more than 12,000 APIs which give fantastic opportunity for investment management firms to explore ways to further develop the next generation of technology play.



To manage the cost of building and delivering solutions, service providers need to consider development on clear standards that help in articulating this across not just the entire technology organisation but also the business. This is so that it is easier to develop various ecosystems not just with small but also large corporates.

# High Level Open API Standard Framework

The open API-oriented approach toward technology architecture is generating lot of attention.



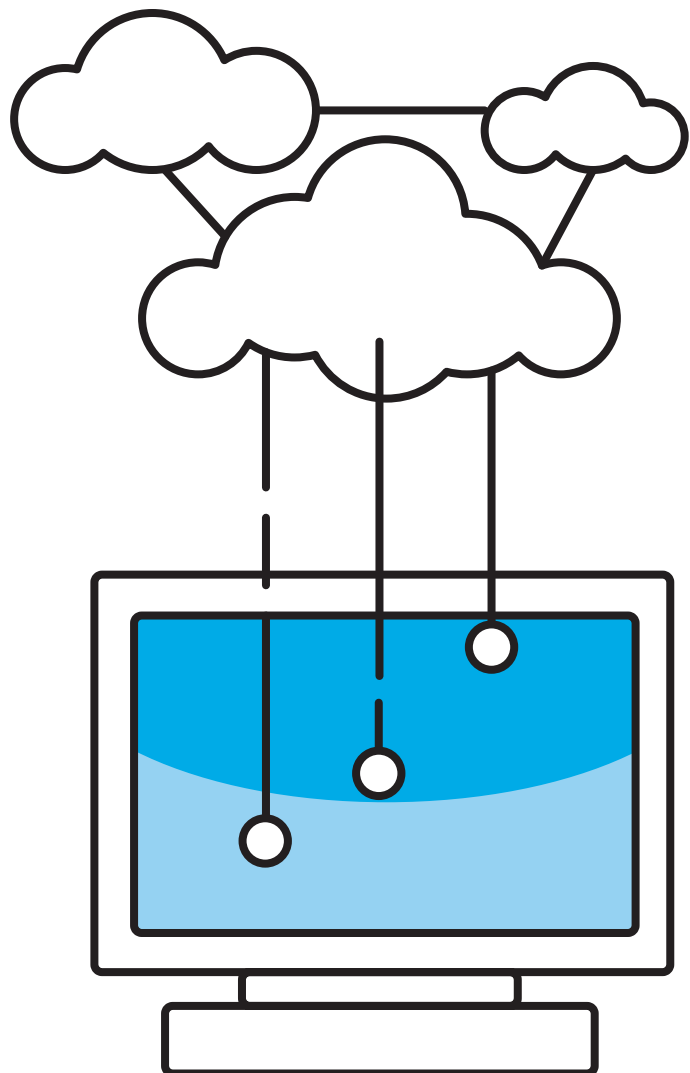
The degree of openness, elements of usability and/or re-usability, and how we can make it easy to interpret, as well other elements such as feasibility, stability, transparency are key priorities of an API management framework. Organisations will need to be clear around how they think through the value story to transition from legacy architecture to micro-services and how these transitions will help them not only better manage the maintenance budgets but also reduce time to market.

**Mohit is the Southeast Asia Strategy Consulting Leader at Deloitte Southeast Asia. His article on open application programming interfaces in financial services industry was first published in the September 2016 issue of Performance, Deloitte's triannual digest for global investment management professionals.**

Here are a few vital questions firms should ask themselves before embarking on an open APIs journey:

01. How do we develop data standards around transaction data, reference data and more importantly sensitive commercial data? Firms should consider elements such as data protection, data portability and consent.
02. How do we build security standards that ensure right level of authentication, authorisation and encryption?
03. How do we manage relationships with the various stakeholders such as various data attribute providers, third parties and customers?

In summary organisations need to ensure APIs should have the clarity of a well-positioned product—a clear intention, a clean definition of the value, and perhaps more important, a clearly defined audience. It is important to plant the seed of how business services and APIs can unlock new business models.



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