

Ravi Menon: Singapore FinTech - innovation, inclusion, inspiration

Presentation by Mr Ravi Menon, Managing Director of the Monetary Authority of Singapore, at Singapore FinTech Festival 2018, Singapore, 12 November 2018.

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Ladies and gentlemen, good morning.

What a man and what a story.

- ♦ Saqib's story shows how technology can help find innovative solutions to real problems.
- ♦ It shows how innovation guided by empathy can help create a more inclusive society.
- ♦ And of course it is a story that is inspiration to all of us – to do better, to be better, to help others.

That is why we asked Saqib to kick off the third edition of the Singapore FinTech Festival this morning.

- ♦ Because Saqib's story exemplifies what Singapore's own FinTech journey is all about – **innovation, inclusion, inspiration**.
 - ♦ Innovation – because we want to find better ways of doing things.
 - ♦ Inclusion – because we want to benefit as many people as possible.
 - ♦ Inspiration – because amidst all challenges around us, there is hope in a better world.

Please join me once again in thanking Saqib for being here with us today.

Financial Services Built Around Us

Welcome to the third edition of the Singapore FinTech Festival (SFF).

- ♦ This year, we have close to 40,000 participants from more than 100 countries.
- ♦ SFF has become the biggest annual gathering of the global FinTech community. You guys made it happen. Thank you all for your overwhelming and unstinting support.

When we began our FinTech journey in 2015, we imagined a **Smart Financial Centre** where **innovation and technology are pervasive**.

- ♦ We said we want to increase efficiency, manage risks better, create new opportunities, and improve people's lives.
- ♦ We didn't know – we still don't know – how the future will look like...
- ♦ ... but we imagined what we want it to look like, and set about trying to create it.

Imagine a world where **financial services are built around us** – around our life and our needs.

Imagine a world where **identity is human**.

- ♦ Imagine a world with no identity cards, no passwords, no mothers' maiden name.
- ♦ We are who we are, not just what we have or what we remember.
- ♦ This is how we have always identified one another throughout history – by recognition, more human, more natural.
- ♦ But when we have large numbers of people and we don't know one another, we had to resort to artificial means.

- ♦ But advances in biometrics are now making identity human again.
- ♦ Many banks are already letting us use our face as our new banking password.
 - ♦ Here in Singapore, OCBC Bank is already doing this.

Next, imagine a world where **payments are invisible**.

- ♦ Our shopping experience will be transformed.
- ♦ Cameras and sensors identify us and the items that we place in and out of our shopping bag.
- ♦ And when we are done, we just walk out of the store!
- ♦ No more checkouts, no more lines, no more fussing with cash and credit cards.
- ♦ Fantasy? Just visit Amazon Go – it is already happening.

Imagine a world where **insurance is intuitive**.

- ♦ How many of us truly understand our insurance policies ... or are fully confident they will pay out when we need them?
- ♦ Imagine a world where the payout is automatically triggered by events and is instantaneous.
- ♦ No more lengthy claims forms, no more waiting time, no more opaque processes.
- ♦ Science fiction? Not quite.
- ♦ MetLife's Lumenlab here in Singapore is already making this a reality for gestational diabetes insurance. They are testing this out in MAS' regulatory sandbox.

Imagine a world where **financial advice is integrated**.

- ♦ Imagine our own personal financial dashboard on our mobile devices.
 - ♦ giving us a complete view of our finances - pulling in data from banks we have deposits with, insurance companies we have policies with, and broker-dealers we have investments with
 - ♦ not to mention, our pension or social security funds, tax liabilities, and mortgages
 - ♦ ... all in one place: a personal balance sheet – in real-time!
- ♦ And where financial advice is customised for us, based on an integrated view of our unique situations, at important milestones in our life
- ♦ ... buying our first home, planning our children's education, looking for investment opportunity to grow our retirement nest.
- ♦ Many FinTech firms are already developing apps and solutions to do this.

This is the financial sector we want to create ...

- ♦ customised for our needs, invisible to our eyes, and an absolute delight.

And I'm very happy that Singapore's three local banks understand this.

- ♦ That's why UOB Bank says it is Right By You!
- ♦ OCBC Bank says Simply Spot On!
- ♦ DBS Bank says Live More, Bank Less!

Innovation and technology are key to realising this future. But they are not enough. We need a **FinTech ecosystem** to make this happen.

- ♦ We need common standards, open architecture, and inter-operable infrastructure.
- ♦ We need collaboration across government, financial industry, research institutions, and the FinTech community at large.
- ♦ We need a free flow of ideas, knowledge, investment, people.

And growing this ecosystem is what we have been hard at work for the last 3-4 years in Singapore with private and public sector coming together in collaboration.

Let me touch on six components of this FinTech ecosystem we are working on.

- ♦ First, **people**.
 - ♦ Without people – their skills, their energy, and their enterprise - there is no FinTech.
- ♦ Second, **identity**.
 - ♦ Establishing who we are dealing with and authenticating information about that person is the first step in any digital transaction.
- ♦ Third, **payments**.
 - ♦ Swift, secure, and seamless payments are fundamental to a digital economy.
- ♦ Fourth, **data governance**.
 - ♦ We must ensure the responsible use of data and seamless and secure flow of data.
- ♦ Fifth, **applied research**.
 - ♦ We need to build strong capabilities in FinTech-related research directed at solving real-world problems.
- ♦ Sixth, **platforms for innovation**.
 - ♦ We need mechanisms to foster collaboration and co-creation ...
 - ♦ ... to translate ideas into products; bridge problems with solutions.

People

Let me start with the most critical part of ecosystem - people.

- ♦ The shortage of tech skills and talent is a global phenomenon.
- ♦ For a small city-state like Singapore, it is almost existential and that is why it is our top priority.

Singapore is taking a multi-pronged approach:

- ♦ our institutes of higher learning are adapting their curriculum with industry input to develop students who are able to work with emerging technologies;
- ♦ our FIs are putting in place programmes to help re-skill mid-career professionals to take on the jobs of the future; and
- ♦ we will continue to welcome and embrace top talents from across the world to augment our own talent pool and raise the game here.

Minister for Education, Ong Ye Kung, will speak more about skills and talent this Wednesday.

Identity

Let me then move on to the pain of verifying identity – the KYC problem.

For personal KYC, the Singapore government has taken the first step with **National Digital Identity (NDI)** ...

- ♦ ... which every resident of Singapore can use to establish his legal identity in a secure manner - with two-factor authentication and a public-private key pair - when making online transactions.

A powerful component of NDI is **MyInfo**.

- ♦ This is a **digital service that enables citizens to authorise third-parties to access their personal data sitting across many different government agencies**.
- ♦ With consent, third parties can use MyInfo APIs to access data that is government-verified to authenticate their customers and make business decisions relating to that customer.
- ♦ Last year, MAS and the Government Technology Agency of Singapore (GovTech) started a pilot with four banks to enable individuals to open a bank account online using MyInfo.
 - ♦ Today, we can open a bank account or apply for a credit card - online and instantly – when we give consent to the bank to access our data through MyInfo.
 - ♦ More than 20 FIs are now using MyInfo to provide more than 110 digital financial services.

We have substantially solved the personal KYC problem. But corporate KYC is far more complex.

Last year, I shared with you that MAS is working with local and foreign banks to explore a **shared services utility for doing corporate KYC**.

- ♦ This is potentially a transformative project.
- ♦ And we made good progress in harmonising various banks' KYC systems and integrating the proposed KYC utility with the banks' infrastructure.
 - ♦ This is no mean feat given the diversity of banks' KYC processes and internal IT systems
- ♦ But the economics did not work out: our proposed solution was going to cost more than the savings that banks will get out of it.
- ♦ So we have decided to take a pause on the project.

The banks participating in the KYC project will publish a report this week on their learning experience.

- ♦ I hope this report will inspire new ideas to help solve corporate KYC problems in the most cost-efficient way because this is a problem that needs to be solved.
- ♦ **We tried, we failed, we will learn, and we will do better next time.**

Innovation is about experimenting and learning from setbacks.

- ♦ Just as we showcase our successes, let us also be open about our setbacks.
- ♦ This is the spirit of enterprise we need in the financial sector and in Singapore.

And we will continue to explore other ways to alleviate KYC pain for FIs and their customers.

MAS and the GovTech are now working with the industry to **facilitate FIs' credit assessment of SMEs using trusted government data**.

- ♦ Today, young SMEs that wish to obtain bank financing may face difficulties due to the lack of credit history.
- ♦ We will help pool trusted data from government sources on the business and key individuals associated with the SMEs to facilitate a more informed credit assessment.
- ♦ We will run a pilot with three banks in the first half of next year.

Payments

Next, payments.

We have substantially completed Singapore's national e-payment infrastructure.

- ♦ There is FAST, a 24x7 real-time funds transfer infrastructure.
- ♦ There is PayNow, which rides on FAST to enable instant money transfer to an individual or business, using their personal ID number, mobile phone number, or unique entity number.
- ♦ There is UPOS, or unified point-of-sale terminal, that can accept all major credit card brands, whether using a smart chip, NFC, or QR code.
- ♦ And now we have SGQR, a single, standardised QR code that can represent multiple payment schemes; this is the first of its kind in the world.

The pain point that remains – for banks, businesses, and individuals – is the cross-border payments and settlement of assets.

- ♦ Cross-border payments involve multiple currencies and cross-border settlements involve multiple assets, and there is no single trusted central party to do this.
- ♦ This is why we think distributed ledger technology holds promise in this area.

Many of you are familiar with **Project Ubin**.

- ♦ It involves MAS and the financial industry here working closely.
- ♦ It aims to make cross-border payments and settlements cheaper and faster at no compromise in security or privacy, using blockchain technology.
- ♦ In 2016, Project Ubin demonstrated that banks could pay one another without going through MAS, using a blockchain based digital representation of the Singapore Dollar.
- ♦ Last year, Project Ubin successfully achieved decentralised netting of payments while preserving transactional privacy.
- ♦ This year, we have made two more advances.

First, Project Ubin team has **successfully harnessed blockchain technology for the settlement of tokenised assets**.

- ♦ In the analogue world, payment and exchange of goods are done at the same time.
 - ♦ In financial terms, we call this “delivery-vs-payment” or DvP.
 - ♦ It eliminates settlement risk, i.e. sellers cannot abscond with money without delivering the goods.
- ♦ But how do we achieve DvP and eliminate settlement risk in the digital world?

MAS, Singapore Exchange, and various industry partners worked together to tokenise digital currencies and securities assets so that they can be simultaneously exchanged thus achieving final settlement and DvP.

- ♦ This has potentially powerful implications for not just the financial sector but also the broad

spectrum of economy.

- ♦ We have published a report from the experiment.
 - ♦ Please take a look, consider the findings, and work with us to advance this cause of real-time settlement. It is still a holy grail in the world of finance that we must collectively solve.

Second, MAS is working with like-minded central banks to explore **faster, cheaper, and more efficient cross-border payments**.

- ♦ MAS, together with the Bank of Canada, the Bank of England and various commercial banks, did an in-depth study of the inefficiencies of today's international payment systems.
- ♦ MAS and Bank of Canada have begun work on **linking our respective blockchain platforms to explore the possibility of instant, 24/7 settlement of cross-border payments transactions**.
- ♦ We are very much looking forward to reporting our progress on this at next year's SFF.

Data Governance

The fourth element of FinTech ecosystem is data governance.

- ♦ The ability to aggregate, store, process, and transmit data – especially across borders – is critical to the digital age.
- ♦ Yet, we all have deep-seated concerns about the privacy, confidentiality, security and ethical use of data.
- ♦ If we don't address these concerns, we will not have the consensus that is necessary to achieve the many benefits of technology.

What do we need to get right in data governance?

- ♦ Data must be protected – we must safeguard privacy, confidentiality, and security.
- ♦ Data must be used in a responsible, transparent, and ethical manner.
 - ♦ We must be able to explain the results of data driven algorithms. We cannot hide behind the black box.
 - ♦ Humans, not machines, are accountable for decisions driven by AI or data analytics.
 - ♦ We must ensure that outcomes of data or AI driven processes are ethical, free of bias, and socially acceptable.
- ♦ Only then, can we create an ecosystem where data flows seamlessly in a trusted manner.

MAS has been actively working with the industry to develop **principles to guide the responsible use of data in financial services**.

- ♦ We are pleased to release today a set of principles to promote **Fairness, Ethics, Accountability & Transparency, or FEAT, in the use of AI and data analytics**.
- ♦ I'm told this is the first of its kind in the world – where the regulator and industry have come together to set guidance on the responsible use of AI and data analytics. And I am sure this is a living document that will be continually updated as we learn more.

Next, on the international front: **we need more data connectivity, and less data localisation**. This is a serious risk.

- ♦ Data localisation measures are on the rise around the world.

- ♦ If data cannot cross borders, the digital economy cannot cross borders and we will be poorer for it.
- ♦ Not all data localisation is bad: there may be some legitimate concerns about national security.
- ♦ But a good part of data localisation that is happening in the world today is due to misguided notions of cyber security or data privacy or, worse still, old-fashioned protectionism.

This is a key challenge for the technology community to solve together with policy makers – how to enhance data connectivity while taking into account the issues of data sovereignty.

- ♦ Many of the technologies do exist today: end-to-end encryption, anonymisation.
- ♦ Some experiments are already underway.
 - ♦ For example, here in Singapore, UOB Bank is collaborating with Intel to test out an interesting solution.
 - ♦ It will allow the bank's staff in Singapore to run a federated analysis of data residing in other countries and obtain an integrated output of that analysis, without seeing any actual data.
 - ♦ MAS and Bank of Thailand are very keen on this project and are participating as observers of the project.

We need common data standards across countries so that data can flow freely in environment of trust and security.

- ♦ In the digital economy of future, **data connectivity agreements among countries will become as important as today's free trade agreements.**

Applied Research

Another important element of FinTech ecosystem is applied research.

Last year, MAS launched the **S\$27 million grant scheme to support R&D in AI and data analytics for the financial sector.**

- ♦ We have received **more than 30 applications** from financial and research institutions.
- ♦ We have now put out five calls for applied research proposals:
 - ♦ in econometrics and data science,
 - ♦ back-testing methodologies,
 - ♦ quantum computing for the financial sector, and
 - ♦ explainable AI.

Last year, MAS and the industry also began **collaborating with MIT Media Lab to do serious FinTech R&D.**

- ♦ MAS, industry professionals, and MIT researchers have come together towards developing prototypes that look into **applications of AI and distributed ledger technology in the financial sector.**
- ♦ They include use cases in smart contracts, trade finance, and central bank digital currencies.

And earlier this year, the Intellectual Property Office of Singapore established a **FinTech Fast Track initiative for patents.**

- ♦ Under the Fast Track, **FinTech patents can be granted in as quickly as six months**, compared to the industry convention which can be up to two years.
- ♦ Once patented in Singapore, applicants can leverage on our global patent highways to expedite the registration of their patents in more than 30 overseas markets.

Platforms for Innovation

The final piece in FinTech ecosystem - platforms for innovation.

- ♦ Innovation does not occur in isolation.
- ♦ We need platforms to connect people and ideas; problems and solutions; and foster collaboration.

One such platform we are excited about is **AFIN – the ASEAN Financial Innovation Network**. Let's begin with the problem statement.

- ♦ There are about 1.7 billion adults globally who are unbanked.
- ♦ One out of three of the unbanked come from just four countries in Asia – China, India, Pakistan, Indonesia.
- ♦ It is a shame that in this day and age, so many do not have access to a bank account, secure and efficient means of payment, or insurance protection.

The root of this problem is two-fold.

- ♦ Banks face high costs in reaching out to customers in remote villages.
 - ♦ And frankly, many of their mainstream financial services may not be suited to the needs of these customers.
- ♦ FinTech firms, on other hand, are able to create agile and mobile digital solutions to access and serve these underserved segments.
 - ♦ But they lack the resources to scale and penetrate new markets.

This is where AFIN comes in, to bring banks and FinTech firms together to develop solutions to penetrate these hard-to-reach markets.

- ♦ AFIN is spearheaded by MAS, the ASEAN Bankers Association, and the World Bank's International Finance Corporation.

This Wednesday, AFIN will launch **API Exchange**, or APIX.

- ♦ It is the **world's first cross-border, open architecture platform to enhance financial inclusion**.
- ♦ APIX is both an online **FinTech Marketplace** and **FinTech Sandbox**.
 - ♦ As a marketplace, it will enable FIs to discover and connect with FinTech firms through APIs on a globally curated platform.
 - ♦ As a sandbox, it provides a platform for FIs and FinTech firms to collaborate and experiment on solutions in a contained environment.
 - ♦ Please step forward to participate in this exciting enterprise to deepen financial inclusion in ASEAN and the Asia-Pacific region.

Next, MAS and the InfoComm Media Development Authority (IMDA) are working together to create a **cross-border innovation platform for SMEs called Business sans Borders**.

Business sans Borders will do two things:

- ♦ It will enable SMEs to connect in a global services marketplace, where they can explore synergies in digitalising their business processes and mutualise costs.
- ♦ It will allow solution providers to more effectively reach out to SMEs who tend to be highly dispersed and are sometimes hard to reach.

Business sans Borders will begin with a proof-of-concept next year, with three features:

- ♦ first, a sandbox where start-ups and established players come together to experiment and build relevant solutions;
- ♦ second, an “app store” where SMEs can access a wide range of services, from finance and logistics to human resources; and
- ♦ third, an AI engine to match SME suppliers with buyers for products and services, across ASEAN and beyond.

Conclusion

Let me end where I began.

FinTech is not just about technology – though technology is very important in all that we do and will help to solve many real problems.

FinTech is not just about finance – though we want to create a world where financial services are built around us, and we want empower hundreds of millions of people to participate in the modern economy.

FinTech is about what Saqid Shaikh reminded us of earlier today – a spirit of enterprise that is infused with empathy and lifts us to be better people.

It is about innovation, inclusion, and inspiration.

Everything we do in FinTech must always have a larger purpose – to improve the lives of individuals, to build a more dynamic economy, to promote a more inclusive society.

This is the FinTech spirit. And over the next five days of this Festival, may you find that spirit and may you be inspired to break new ground, and seek a better, newer world.

Thank you all for your support. Have a great FinTech Festival!