

Ravi Menon: Basics for smart finance – common standards and seamless data

Closing remarks by Mr Ravi Menon, Managing Director of the Monetary Authority of Singapore, at the SIBOS Conference, Singapore, 15 October 2015.

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Mr Yawar Shah, Chairman, SWIFT

Mr Gottfried Leibbrandt, CEO, SWIFT

Ladies and gentlemen, good afternoon.

A. Revolution in communications

“What hath God wrought?” read the first telegraphic message sent by Samuel Morse on 24th May, 1844.

The telegraph marked a revolution in communications at the time.

- Transatlantic telegraph cables cut communications between America and Europe from about 10 days – the time it took for steam ships to sail across the Atlantic – to a matter of minutes.
- In fact, the mid-19th century leaps in transport and communications technologies ushered in the first phase of economic and financial globalisation.

Ground-breaking as the telegraph was, a text message that takes minutes to arrive will be considered glacial by today’s standards. It will certainly not be able to support the frenetic pace of communications in the global financial system.

Thankfully, we have SWIFT. Last year, there were 5.6 billion messages carried globally on SWIFT’s network.

- Close to half the messages related to international payments, which lies at the heart of global banking.
- Technology has transformed cross-border finance.

Smart Financial Centre

It is MAS’s conviction that innovation and technology will be critical to the future growth and success of Singapore’s financial sector. Earlier this year, MAS shared its vision of a Smart Financial Centre: a financial centre where innovation is pervasive and technology is used widely.

It is about pursuing innovation and technology to:

- increase efficiency;
- manage risks better;
- create new opportunities; and
- improve people’s lives.

We are walking the talk.

- We formed a new FinTech & Innovation Group (or FTIG) within MAS.
- FTIG’s mission is to formulate policies and strategies to create a conducive ecosystem for innovation while fostering safety and security.

- MAS has committed \$225 million over the next five years under the Financial Sector Technology and Innovation scheme.

We have been working closely with the industry as well as reaching out to the broader “fintech” community.

- We have been talking to start-ups, software providers, and experts and practitioners in various fields of financial technology, including data analytics, cyber security, blockchains, and digital payments.
- We have learnt much from these interactions.

The response from the industry has been encouraging.

- Insurers such as Aon and Metlife as well as banks such as Citibank, Credit Suisse, DBS, HSBC, and UBS have already set up innovation labs in Singapore.
- Aviva has announced plans for a “Digital Garage” and AXA for a “Data Innovation Lab” here.
- MAS is working with several other banks and insurers on their plans to establish and expand their analytics and innovation teams in Singapore.

At the heart of a Smart Financial Centre must be a progressive information technology architecture. Two key characteristics of such an architecture are:

- common standards; and
- seamless data sharing.

Common standards

Let me begin with common standards. They are key to making systems interoperable and harnessing fully the benefits of new payments technologies.

Lack of standardisation leads to fragmentation, inefficiency, and inconvenience.

- Take for example electronic funds transfer.
- Without a common standard, an application written to effect funds transfer for one group of financial service providers may need to be rewritten to work with another group of financial service providers that operate on different interface standards.

Common standards allow systems and applications to operate efficiently and seamlessly when different financial service operators and solution providers come together.

- The EMV chip is one of the most impactful examples of a common standard. It is all the more impressive as it was an industry initiative without any government involvement.
- NFC, or near-field communications, represents the next big thing in common standards. It is enabling contactless payments on mobile devices like smart phones.

Yet another good example of a common standard is ISO 20022. This is the international standard for electronic data exchange among financial institutions.

- Its growing adoption has helped to make payments platforms interoperable and reduce inefficiency.

Fast and Secure Transfers

A successful example of ISO 20022 adoption in Singapore is “Fast And Secure Transfers” or “FAST”. This is a secure electronic funds transfer service that is available 24/7.

- We started with 14 participating banks in March 2014, we now have 19.
- FAST usage has risen steadily, clocking 18 million transactions since its launch.

FAST offers several advantages for bank customers in Singapore.

- You can pay someone almost instantaneously from your computer or mobile device at any time of the day.
- You can receive confirmation of payment within seconds.
- If you are a company, whether big or small, near-instant payment and confirmation round-the-clock makes a huge difference if you rely on cashflow to pay suppliers frequently. With the whole transaction going electronic, you can look forward to more efficient reconciliation of your payments with your financial accounts.
- In short, FAST is almost as convenient as cash, yet potentially safer and cheaper.

While the take-up of FAST has been encouraging for person-to-person payments, it has some ways more to go for merchant payments.

On the payee side, a barrier to adoption by merchants is the challenge of integrating electronic payments with the existing work flow of confirming and reconciling receipt of payment, which is currently done at the cash register. Two of our banks have come up with solutions for this.

- Standard Chartered Bank has had some success with helping food courts, fast food joints, convenience stores and taxi companies accept electronic payments by Dash.
- DBS has just announced a new product called FasTrack, which lets you order and pay for coffee before you even arrive at the counter.

It is good that there is a proliferation of innovative e-wallets, payment apps and mobile payment solutions in Singapore.

- But just as man is not an island, neither should payment solutions be limited to themselves.
- For widespread take-up and usage of any digital payments solution, interoperability is critical.
- And this is where FAST comes in.

With the common standard provided by FAST, banks can more readily collaborate on innovative payment products that are interoperable, without having to worry about incompatibility.

On the payer side, a barrier to adopting digital payments is the hassle involved in on-boarding payees.

- People should be able to pay each other electronically as simply as writing a cheque or handing over some cash.
- It should not matter which bank that I bank with nor should a payee be identifiable only by his bank account number.
- Few of us can readily recall our own bank account numbers, let alone be familiar with those of our friends and family.

I am pleased to note that the participating banks are studying a mobile addressing system for FAST.

- This means that you will be able to make payments through FAST as long as you know the payee's mobile number.

- May I suggest to the industry to go one step further and explore an “all-in-one” addressing system?
- This means being able to pay someone through FAST using also the payee’s email address, social network account, or other proxies.

Unified Points-of-Sale

Let me move on from card issuance to card acceptance.

In Singapore’s retail payment scene, multiple Points-of-Sale (POS) terminals at the payment counters are a common sight. They are a source of clutter and inconvenience. And as more stores and restaurants introduce self-checkout facilities to improve productivity, these multiple terminals have become a source of confusion as well.

Our vision is a unified POS – a single terminal, preferably mobile, that can read all kinds of cards. This will:

- allow merchants to enhance efficiency by simplifying front-to-back process integration; and
- enhance the shopping or dining experience of customers.

A unified POS requires merchant acquirer systems to be able to communicate with one another. This interoperability can be achieved through standardisation. The technology exists but it requires some effort and some cost.

I am pleased that The Association of Banks in Singapore has formed a working group to look into standardising the POS applications to operate efficiently and seamlessly. I commend them for their resolve to address a long-standing bane in our retail payment scene.

What have we learnt from all these experiences with common standards?

- The technology behind common standards is not all that complicated and is becoming less of an impediment to systems integration.
- What is more important is for operators, subscribers, and consumers to recognise the larger collective benefits from investing in an infrastructure for interoperability and to work out a framework to ensure its commercial viability for all participants.

Seamless data sharing

A second key characteristic of a progressive information technology architecture is seamless data sharing.

By some estimates, the universe of digital information is growing at about 60% each year. It will grow even faster as embedded sensors become more common. How to make sense of all this data?

We must get the basics right in data management.

- First, quality data. Data must be rich in quality, free from error, and commonly understood.
- Second, aggregated data. To extract maximum value, data must be efficiently aggregated. The value of each data point increases as it is connected to other data points.
- Third, intelligible data. Data must be formatted so that it is machine-readable as well as machine-usable.
 - For example, it is much easier for a system to process data provided in simple text formats such as CSV files rather than in a PDF report.

Greater availability and deeper analysis of data helps us understand the world around us with a clarity and depth that was not possible before. In particular, mashing together diverse data sets offers the possibility of new types of insights.

New software algorithms crunch the enlarged Big Data sets to make more reliable predictions on repayment and hence improve performance of loan portfolios.

- For example, a lender to small businesses requires access to the company's bank and credit card accounts, to constantly monitor the company's cash flow and hence ability to repay the loan.

Application programming interfaces

Despite the greater availability of data and the possibilities for harnessing this data opened by technology, financial institutions continue to face challenges on the data front.

- More data means more cost.
- While technology has significantly reduced the unit costs of data gathering, it has ironically also raised the potential total cost of data by opening more possibilities for data mining and analysis.

One way to improve access to data without raising costs significantly would be for the industry to pool relevant data together.

- The benefits of aggregating data across the industry can be seen from our experience with the credit bureau, which has allowed banks to make better credit underwriting decisions.
- However, concerns over confidentiality and market sensitivity have held back data sharing among financial institutions and restricted public access to data.

One effective way to achieve seamless data sharing is through the publication of open Application Programming Interfaces, or APIs, by financial institutions for data submission.

- In essence, an API documents how a system operates, what inputs it will accept, and what outputs the system will provide.
- APIs allow different systems to interact with one another without the need for human intervention.
- In effect, APIs allow users to seamlessly merge multiple data sets from different sources into a single rich data set.

Using APIs, systems can be linked to create a system of systems, where the whole is greater than the sum of the parts. Smartphones are a good example.

- Every notification you receive from Twitter or Facebook comes through an API and is displayed on your screen by another API.

More efficient transactions

Financial institutions are already making use of APIs to enhance efficiency in transactions.

- SWIFT itself is a good example. Previously, international fund transfers were a manual process. Banks sent telex messages to each other to debit funds from one account and credit it to another. The speed of response depended on whether someone was waiting by the telex machine!
- Now, transferring funds only requires banks to send a SWIFT message containing payment instructions to another bank for funds to be moved, at any time in the day.

Some banks are selectively opening up their systems to customers, employees, and others.

- Silicon Valley Bank plans to offer an API for payments by the end of the year. This will allow their tech-savvy customers' systems to process payments without human intervention.
- BNY Mellon has built an internal online API catalogue for services such as pricing, calendars, market and reference data, etc. This has helped its developers to significantly reduce steps to build new innovative apps.

More efficient data submission

Another potential benefit from APIs will be a reduction in the cost of regulatory data submission.

Currently, data submission to MAS is still partly manual. We will improve this process. Our vision is for data to flow seamlessly in both directions between systems in the financial institutions and MAS. This will reduce the ongoing cost of regulatory submissions.

This is not a trivial exercise, given the volume and diversity of financial data. Well-crafted APIs are essential for this vision to work. MAS will closely engage the industry to ensure that these APIs are clear, simple to implement, and extensible.

Conclusion

I spoke earlier about the telegraph. Despite the breakthrough in world travel and communication enabled by the telegraph and other technologies, the globalisation of the late 19th century soon faltered and reversed.

There is a lesson here. Technology alone does not make connections or create better understanding: it merely gives us the means to make those connections.

- What is more important is the spirit of openness and collaboration.
- Common standards and seamless data sharing are in this spirit.
- They will enable us to maximise the benefits of digital and mobile technologies – reap enormous cost efficiencies and extend our reach and understanding.

And it is this spirit of openness and collaboration in innovation that will help create a Smart Financial Centre. We have only just begun.

Thank you.