

Arthur Yuen: Regtech in the smart banking era - a supervisor's perspective

Remarks by Mr Arthur Yuen, Deputy Chief Executive of the Hong Kong Monetary Authority, at HKIB Annual Banking Conference 2018, Hong Kong, 27 September 2018.

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Financial Secretary, Dr Patrick Fung, Ms Carrie Leung, distinguished guests, ladies and gentlemen, good morning to you all.

1. Let me take this opportunity to congratulate the Hong Kong Institute of Bankers on its 10th Annual Banking Conference. In 2009, banking professionals came together at the inaugural Conference to discuss responses to the Global Financial Crisis. Over the past decade, Conference participants have also examined other important strategic issues, including opportunities arising from RMB internationalisation, transformation of the banking sector amid a rapidly changing macro and regulatory landscape, and the implications of accelerating digitalisation. I am sure you all agree that the Conference is an important flagship event for the industry, and it offers a constructive platform for exchanging views on topical issues.

2. The HKMA has long supported the Conference, because it gives us an opportunity to share our views on significant regulatory issues and policy initiatives, with our seven Smart Banking initiatives being the latest ones. As the Financial Secretary mentioned earlier in his keynote, substantial progress has been made in each of the seven Smart Banking initiatives since they were announced last year. The Financial Secretary has already highlighted the progress made by the HKMA in respect of those initiatives and therefore I won't repeat it. I would nevertheless like to demonstrate how the Smart Banking initiatives are re-shaping the banking sector landscape.

Industry responses to the Smart Banking initiatives

3. I have always looked at the Smart Banking Initiatives as a journey. And I am glad to say that we have made good progress with our relevant policy measures throughout this journey. I am particularly excited about the encouraging responses from the banking industry and tech community, which share a common goal of transforming Hong Kong's financial ecosystem by creating better synergy between banking and technology. Let me highlight some of the positive responses we have observed in respect of these Smart Banking initiatives.

4. First, from the perspective of the banking industry,

- We have seen the launch of more than 70 major digital banking and fintech initiatives from various banks since the announcement of the seven initiatives last year. There were more than 20 projects related to mobile payments; 12 biometric authentication initiatives using different biometric attributes, such as fingerprint, finger-vein, voiceprint and facial features; 7 software security tokens; and 30 others, including chatbots powered by artificial intelligence, and enhanced financial services leveraging distributed ledger technologies and social media platform integration.

- In addition, we already had the successful launch of remote onboarding services in Hong Kong, and more than 10 banks are preparing to launch similar services. Also, around 10 banks plan to launch online personal lending services that leverage machine learning technologies and data analytics. Banks are now able to reach out and deliver more financial services with good user experience to a wider spectrum of customers via mobile phones and other online channels.

5. Secondly, if we take a closer look at the tech community's involvement, it is not difficult to see that many of the initiatives I just mentioned are the result of collaboration between the banking industry and the tech community. Since the upgrade of our Supervisory Sandbox last November,

tech firms have directly accessed the Sandbox's Chatroom in more than 110 cases to seek the HKMA's early regulatory feedback on their projects and ideas. This means they are better prepared to collaborate with banks to launch fintech products and services. These uses of the Chatroom are on top of around 50 cases used by banks. The rollout of the Open API Framework, and the phase one implementation roadmaps submitted by banks to the HKMA, show there will be an even higher level of integration and collaboration between the banking industry and the tech community.

6.Thirdly, more than 70 firms, including local and overseas technology and financial firms, have expressed interest in establishing virtual banks in Hong Kong. As of 31 August, we have received about 30 applications to operate a virtual bank. Some of those applications are already "substantially complete", so we would include them in the first batch of applications for processing. We expect to start granting licences to virtual banks around the end of this year or early next year. I believe establishment of virtual banks will provide further traction to the growth of the Smart Banking ecosystem in Hong Kong.

7.Fourthly, the Smart Banking ecosystem is not complete without support from the general public and customers. I am glad to see that a large number of bank customers have signed up with the Faster Payment System (FPS) since the launch of customer registration on 17 September for registration.

Growing significance of Regtech in the Smart Banking Era

8.As we watch the positive development of the Smart Banking ecosystem, it is also important that we maintain momentum. This year, the conference's theme, "Banking for a Smart Society", reminds us not to be complacent. We should continue to work collectively to further develop the ecosystem.

9.While we naturally pay more attention to new or innovative digital financial services that become available to bank customers as a result of the Smart Banking initiatives, let's not forget that Fintech is not only about the interface between banks and customers. The importance of a key Fintech segment, Regtech – regulatory technology – in supporting and facilitating the interface between banks and the regulators, should not be understated nor overlooked. I would like to therefore provide a supervisor's perspective on Regtech in the Smart Banking era.

10.When we look at Regtech, some may immediately start to envisage the substitution of us, banking supervisors, with technologies such as artificial intelligence (AI) or "robo-regulators". While some of you might indeed prefer a robo-regulator delivering this speech, this is not something that Regtech is intended or able to deliver at this point, unfortunately. Frankly, I hope that you would still prefer listening to my sharing, rather than from a tall and handsome robo-regulator, even if such a robot were a reality today. Joking aside, Regtech does offer a tremendous potential to complete the Smart Banking ecosystem.

11.Before I discuss our plan for Regtech, I would like to reiterate what Regtech means. As I have mentioned, from the perspective of banks, there are two interfaces that they have to address: one between banks and customers, and the other between banks and the HKMA. The general priority of banks under the Smart Banking initiatives so far has been to concentrate on the interface between banks and customers to offer better digital financial services to users. However, some meaningful progress has been made to streamline the interface between banks and their regulators, such as the work under the Banking Made Easy initiative and the Balanced and Responsive Supervision Programme that I explained at this Conference last year. We do see a need to further facilitate banks' use of technologies for compliance with regulatory requirements of the HKMA and other regulators and for risk management purposes. Regtech, which essentially means the use of innovative technologies by banks to achieve regulatory compliance or better risk management in a more effective and automated manner, is well positioned to further enhance the interface between banks and regulators.

12.Regtech developments are growing rapidly particularly in the areas of transaction monitoring, regulatory reporting, risk management and compliance. According to a recent report, investment in Regtech companies reached US\$1 billion globally in 2017. But why is Regtech gaining popularity? I believe there are three key drivers:

1. First is the increase in the complexity and scope of more stringent regulations globally such as Basel III and enhanced standards for combating money laundering. A few recent studies have suggested that the volume of global regulatory changes went up by at least five-fold in the past decade. Hence, there has been a growing desire of the banking industry, particularly in jurisdictions with more daunting regulatory requirements, to explore the use of new technologies to enhance the effectiveness and lower the cost of their compliance efforts.
2. The second driver is the sheer volume of transactions and data that many banks need to handle as the economy and business continue to grow. If we take the mobile wallet market as an example, research predicts cumulative annual growth of 32% in global e-wallet transactions between 2017 and 2022. Such a scale of transactions means it would simply be impracticable for some banks and e-wallet operators to effectively manage the associated risks using traditional or manual risk management approaches.
3. The third and final driver is the higher availability of Regtech solutions. Increasing computing powers, together with accessibility of data and applications of new technologies, have contributed to an increased commercialisation of Regtech solutions available to the banking industry.

13.Recognising the growing need for, and developments of, Regtech solutions, we at the HKMA consider it timely to work with the banking industry and the technology community to further facilitate the adoption of Regtech in Hong Kong. To help develop the Regtech ecosystem here, the HKMA will open the Fintech Supervisory Sandbox to Regtech projects or ideas raised by banks or tech firms. I am also pleased to say that the HKMA will soon launch a series of Regtech-specific projects, through its Banking Made Easy initiative, focusing on four areas:

- (a) AML/CFT surveillance technologies;
- (b) Regtech for prudential risk management and compliance;
- (c) Study on machine-readable regulations; and
- (d) HKMA's exploration of Suptech.

14.Let me explain each initiative in greater detail.

AML/CFT surveillance technologies

15.About AML/CFT surveillance, one should bear in mind that the financial system is the gateway through which criminals must pass to make crime pay. The reality is that financial system is becoming more efficient because of technology. Efficiency brings enhanced services to customers, which are delivered through channels and at speeds we could have only dreamed of a few years ago. But these developments can equally be attractive to criminals.

16.This is where banks should come in. Banks are expected to be on the frontline of combatting financial crimes given Hong Kong's role in the global economy. As our knowledge of the size of the threat improves, expectations of how banks should perform this role have also increased. This also means that managing financial crime risk has become a significant compliance undertaking, particularly in the area of transaction monitoring.

17.But the ability for banks to work in a sea of data and fund flows is indeed very challenging. It is not that our systems do not produce results, judging from an average annual growth of 40% in

the past five years in suspicious transaction reports. Rather, it is the degree of success by which those results contribute to the objectives of our AML system – to deter, disrupt and detect – that are increasingly under scrutiny

18.To improve our work, Regtech solutions are increasingly being recognised as highly applicable in AML. Data analytics and machine learning are seen as having huge potential to complement banks' processes in AML/CFT surveillance, and improve efficiency and effectiveness of the process.

19.For example, the generation of huge numbers of alerts by transaction monitoring systems, which can sometimes require armies of analysts to process, is a pain point for banks. We note that some banks use machine learning and artificial intelligence to help detect and recognise suspicious behaviours and patterns, as well as to facilitate the closing of low-risk alerts. This helps free up precious analysts resources to focus on investigating high-risk cases, and in turn enhance the overall effectiveness and efficiency of the transaction monitoring process.

20.Let me be clear that this is not technology at any cost. We must fully understand the pros and cons of what these changes will mean to banks' AML systems and controls. At the same time we cannot outsource this responsibility to technology firms. Some of you will know from our work with a Regtech firm specialising in testing screening systems that we expect banks to understand why a machine makes the recommendations it does.

21.Going forward, if we are going to address the challenges, we need to be ambitious. The HKMA plans to move in the coming months from a one-to-one type engagement in our Chatroom, to a many-to-many type engagement where banks, stored value facility (SVF) operators, technology specialists and the regulator come together to tackle AML pain points. This will initially target one or two challenges, but will aim to build momentum and turn the successes into mainstream AML solutions that contribute to effectiveness and efficiency.

22.But that perhaps is still not enough. New technology comes at the right time not only for the regulatees, but also for regulators. With the advice from technology experts, we will embark upon a study to enhance the timely retrieval and transmission of AML/CFT related information and data from banks and SVF operators in a digitalised and efficient way, as opposed to the old-fashioned way of regulatory returns and surveys. At the same time, we will also explore data analytics tools for processing the data collected in order to generate useful analyses for furthering our capability to understand and assess the ML/TF risks at the sectoral level, as well as to provide feedback to individual regulatees where appropriate. These will hopefully lead to an evolution and re-shaping of regulatory interface between the HKMA and market practitioners to enhance AML/CFT surveillance capability of all.

Regtech for prudential risk management and compliance

23.Another area of focus is on Regtech for prudential risk management and compliance. The often-analytical nature of prudential risk management has created room for technology to im