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## **Regulating FinTech: The Case of Singapore**

Lin Lin

lawll@nus.edu.sg

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# Regulating FinTech: The Case of Singapore

Dr. Lin Lin\*

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## Abstract

This article critically examines Singapore's experience in regulating and facilitating the growth of the FinTech sector. Based on empirical data, this article discusses how Singapore has encouraged financial innovation and mitigated new risks brought by FinTech through institutional improvements and regulatory reforms. It also identifies potential regulatory limitations and challenges, and distils the methods to handle them. This article seeks to provide valuable lessons to other countries on how best to improve the regulatory environment for FinTech.

## 1. INTRODUCTION

Financial Technology ("FinTech") generally refers to new technologies that seek to improve and automate the delivery and use of financial services.<sup>1</sup> More specifically, it has been used to describe technological penetration in various financial areas, including the four main areas<sup>2</sup> of (1) payments, (2) lending, (3) savings and (4) insurance. FinTech investment has increased exponentially in recent years, both globally and in Asia. KPMG's 2018 figures suggest global FinTech funding rose to US\$111.8 billion in 2018, up 120 percent from US\$50.8 billion in 2017.<sup>3</sup> FinTech investment in Asia rose to a record high of US\$22.7 billion in 2018.<sup>4</sup>

In line with its vision as a hub for global trade and finance, Singapore has undertaken to create a financial ecosystem that is facilitative of the digitalisation of its economy and the development of FinTech.<sup>5</sup> Developing the FinTech sector is part of Singapore's "Smart

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\*Assistant Professor, Faculty of Law, National University of Singapore (NUS). I thank regulators from the Monetary Authority of Singapore (MAS), entrepreneurs of FinTech startups, venture capitalists, and researchers of the Cambridge Centre for Alternative Finance (CCAF) for sharing their knowledge and insights with me. I thank Ong Yee Lon Elson and Jinwen Zhu for comments to earlier drafts. All errors remain my own.

<sup>1</sup> The term was coined by Peter Knight in the 1980s. See Marc Hochstein, "Fintech (the Word, That Is) Evolves", *American Banker* (Oct. 5, 2015), online: <<http://www.americanbanker.com/bankthink/fintech-the-word-that-is-evolves-1077098-1.html>>. See also Douglas W. Arner, Janos Nathan Barberis & Ross P. Buckley, "The Evolution of Fintech: A New Post-Crisis Paradigm?", University of Hong Kong Faculty of Law Research Paper No. 2015/047 at 6.

<sup>2</sup> UNSGSA FinTech Working Group and CCAF, "Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offices, Regulatory Sandboxes, and RegTech" (2019) Office of the UNSGSA and CCAF: New York, NY and Cambridge, UK.

<sup>3</sup> Lauren M. Mostowyk, "Global fintech investment hits record \$111.8B in 2018", *KPMG* (13 Feb 2019), online: <<https://home.kpmg/xx/en/home/media/press-releases/2019/02/global-fintech-investment-hits-record-in-2018.html>>.

<sup>4</sup> *Ibid.*

<sup>5</sup> Lee Hsien Loong, "Building One Financial World" (Keynote Address by DPM Lee Hsien Loong at ACI World Congress, 25 May 2001), online <<http://www.nas.gov.sg/archivesonline/speeches/view-html?filename=2001052510.htm>>.

Nation” initiative.<sup>6</sup> Furthermore, Singapore’s financial regulator, the Monetary Authority of Singapore (“MAS”), has undertaken various initiatives to solidify Singapore’s status as a regional “FinTech” capital. These regulatory efforts have generated tangible results, with Singapore attracting the most funding for FinTech within ASEAN in 2018. As of 2018 YTD October, Singapore had attracted US\$222 million in FinTech funding, accounting for 48.5% of funding attracted by the ASEAN-6 (Singapore, Indonesia, Philippines, Malaysia, Thailand and Vietnam).<sup>7</sup> Further, Singapore houses the lion’s share of FinTech startups amongst the ASEAN countries.<sup>8</sup> As of 2017, there were 479 FinTech firms based in Singapore, making up 39% of all FinTech ventures in the ASEAN markets. By 2018 October, this had increased to 756 firms, making up 43% of ASEAN FinTech ventures. As a result, Singapore has been identified as the top ASEAN nation in attracting new entrants and the most conducive FinTech ecosystem in the region.<sup>9</sup>

Existing literature has discussed the various regulatory approaches towards financial innovation.<sup>10</sup> Although there has been literature studying how countries like the United Kingdom (UK)<sup>11</sup> and China have handled FinTech regulations,<sup>12</sup> little attention has been paid to the growth story of Singapore, which created a viable FinTech market and developed into a regional leader in a short time.<sup>13</sup> This paper fills this literature gap by examining Singapore’s experience in regulating its FinTech sector through institutional and regulatory measures: (1) regulatory reforms to encourage financial innovation (such as the regulatory Sandbox); (2) improving the integration of regulatory infrastructure (such as the establishment of the FinTech & Innovation Group); (3) issuing regulatory guidelines and passing laws to provide regulatory clarity in response to the evolving FinTech sector (such as the issuance of the Digital Token Guide); and (4) law reforms (such as the enactment of the Payment Services Act). Singapore’s

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<sup>6</sup> Singapore, Smart Nation and Digital Government Office, *Smart Nation: The Way Forward*, online: <[https://www.smartnation.sg/docs/default-source/default-document-library/smart-nation-strategy\\_nov2018.pdf](https://www.smartnation.sg/docs/default-source/default-document-library/smart-nation-strategy_nov2018.pdf)> at page 7-8.

<sup>7</sup> UOB and Singapore FinTech Association, “FinTech in ASEAN: The Next Wave of Growth” (2019) at 5.

<sup>8</sup> Ernst & Young, “ASEAN FinTech Census 2018” (2018), online: <[https://www.ey.com/Publication/vwLUAssets/EY-asean-fintech-census-2018/\\$FILE/EY-asean-fintech-census-2018.pdf](https://www.ey.com/Publication/vwLUAssets/EY-asean-fintech-census-2018/$FILE/EY-asean-fintech-census-2018.pdf)>.

<sup>9</sup> The Economist, “FinTech in ASEAN: Unlock the Opportunity” (2018) The Economist Intelligence Unit Limited 2018 at 15, online: <[https://eiuperspectives.economist.com/sites/default/files/fintech\\_in\\_asean\\_westpac-austrade\\_final\\_15\\_feb\\_2019.pdf](https://eiuperspectives.economist.com/sites/default/files/fintech_in_asean_westpac-austrade_final_15_feb_2019.pdf)>.

Singapore, Business Review, “Singapore’s FinTech invasion has no end in sight”, (8 July 2019), online: <https://sbr.com.sg/financial-services/in-focus/singapores-fintech-invasion-has-no-end-in-sight>.

<sup>10</sup> Scylla et al., 1982, discussing how financial innovation will always be ahead of the regulators to stay close to the fire without being burned. See also Inutu Lukonga, “Fintech, Inclusive Growth and Cyber Risks: Focus on the MENAP and CCA Regions” (September 2018) International Monetary Fund Working Paper No WP/18/201 at 21, online: <<https://www.imf.org/en/Publications/WP/Issues/2018/09/11/Fintech-Inclusive-Growth-and-Cyber-Risks-Focus-on-the-MENAP-and-CCA-Regions-46190>>; as regards over regulation, see Robin Hui Huang, “Online P2P Lending and Regulatory Responses in China: Opportunities and Challenges” (2018) 19:1 European Business Organization Law Review at 63-92; see also Douglas W. Arner, Janos Nathan Barberis & Ross P. Buckley, “The Evolution of Fintech: A New Post-Crisis Paradigm?”, University of Hong Kong Faculty of Law Research Paper No. 2015/047.

<sup>11</sup> Yang Hyeoun, “The UK’s Fintech Industry Support Policies and its Implications” (17 February 2017), 7:5 World Economy Brief, online: <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2919191](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2919191)>. Jon Truby, “FinTech and the City: Sandbox 2.0 Policy and Regulatory Reform Proposals” (28 November 2018), International Review of Law, Computers & Technology, online: <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3299300](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3299300)>.

<sup>12</sup> Zhou Weihuan, Douglas W. Arner & Ross P. Buckley, “Regulation of Digital Financial Services in China: Last Mover Advantage” (2015), 8 Tsinghua China Law Review 25.

<sup>13</sup> A concerted focus on developing the nation’s technological expertise was only introduced in 2014 via the Smart Nation Initiative. See Smart Nation Progress, <https://www.smartnation.sg/why-smart-nation/smart-nation-progress>; “Transcript Of Speech By Prime Minister Lee Hsien Loong At Smart Nation Launch, 24 November 2014”, *Smart Nation Singapore* (24 November 2014), online: <<https://www.smartnation.sg/whats-new/speeches/smart-nation-launch>>.

experience can be a valuable lesson to be taken by other countries attempting to promote the formation and growth of a FinTech sector.

The rest of this article is structured as follows: Parts II and III detail the various important ways in which Singapore has facilitated financial innovation and mitigated new risks associated with FinTech. Part II focuses on institutional improvements such as the establishment of an innovation office and regulatory sandbox to promote financial innovation, before moving on to how Singapore harnesses technology to improve regulatory frameworks and combat emerging risks. Challenges and impediments faced by regulators are also identified in the course of the discussion. Part III examines the various legal and regulatory reforms. Part IV critically discusses the lessons that can be learnt from Singapore's experience. The discussion raises areas of improvement, highlighting the need to foster a robust entrepreneurial culture and to improve the exit environment. Part V concludes.

## **2. IMPROVED INSTITUTIONAL INFRASTRUCTURE**

At the core of Singapore's FinTech development initiative is the broader policy emphasis on technological development as a key facet of nation-building.<sup>14</sup> This is manifested as Singapore's "Smart Nation" initiative, which aims to prepare its workforce, government and citizenry for the digital era. The "Pillars of Smart Nation" are: Digital Economy, Digital Government and Digital Society.<sup>15</sup> To achieve these broadly-defined ends, the initiative embraces the promise of FinTech and is aimed at building a city-state on the foundation of a workforce that can adapt to new technologies. This is doubly important for a country with scarce natural resources like Singapore.

### **(a) Establishment of FinTech & Innovation Group**

MAS takes a proactive approach as Singapore's central bank and financial regulatory authority, towards creating a conducive environment for FinTech innovation. MAS has set up the FinTech & Innovation Group ("FTIG") as its specialised FinTech office to serve as a primary point of coordination for its initiatives, particularly the development of FinTech-related regulatory policies and the mobilisation of the use of technological innovations in the financial industry.<sup>16</sup> It comprises three offices: the Payments & Technology Solutions Office is in charge of formulating policies and strategies for payment technology and other technology solutions for financial services; the Technology Infrastructure Office deals with policies and strategies for "developing safe and efficient technology enabled infrastructures for the financial sector", such as cloud computing; and the Technology Innovation Lab focuses on searching for innovative technologies which are potentially applicable to the financial industry and facilitates

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<sup>14</sup> *Supra* note 6.

<sup>15</sup> "Pillars of Smart Nation", *Smart Nation Singapore*, online: <<https://www.smartnation.sg/why-Smart-Nation/pillars-of-smart-nation>>.

<sup>16</sup> Rajah & Tann LLP, "MAS Establishes FinTech Office, Announces Upcoming Public Consultation on Regulatory Sandbox and Organises Singapore FinTech Festival", *Rajah & Tann Singapore* (May 2016), online: <[https://eoasis.rajahtann.com/eoasis/lu/pdf/2016-05-06-FinTech\\_Office\\_v2.pdf](https://eoasis.rajahtann.com/eoasis/lu/pdf/2016-05-06-FinTech_Office_v2.pdf)>. See also MAS, Media Release, "MAS sets up new FinTech & Innovation Group" (27 July 2015), online: <<https://www.mas.gov.sg/news/media-releases/2015/mas-sets-up-new-fintech-and-innovation-group>>.

relevant innovation testing.<sup>17</sup> In the course of its regulatory work, FTIG employs a diverse range of talents, including technicians, legal consultants, startup experts and business consultants, to properly discharge its responsibilities.<sup>18</sup> MAS has also increased the level of its internal expertise by hiring experts from the private sector to head FTIG,<sup>19</sup> and attracted technology talents to increase its technological capability.<sup>20</sup>

### **(b) Regulatory Sandbox and Sandbox Express**

The FinTech Regulatory Sandbox (“Sandbox”) initiative is designed to enable financial innovators to experiment with their ideas for a fixed duration in an environment where specific regulatory requirements are relaxed on a case-by-case basis.<sup>21</sup> Upon successful experimentation in the Sandbox, new startups “graduate” and will need to comply fully with all relevant regulations.<sup>22</sup> Hence, regulatory sandboxes are best described as formal programmes that test financial services and business models with actual customers, subject to certain safeguards and oversight. This process can be instrumental in helping regulators evaluate whether particular regulations or policies will impede the development of beneficial new technologies, and is an important tool in managing the inherent risks associated with financial innovations.<sup>23</sup>

The sandbox was first developed by the Financial Conduct Authority (“FCA”) of the United Kingdom (UK).<sup>24</sup> Within a month after the UK model was established, MAS sought public opinion on opening a Singaporean Sandbox.<sup>25</sup> The FinTech Regulatory Sandbox Guidelines<sup>26</sup> were subsequently introduced in November 2016.

Singapore’s Sandbox takes a more innovator-centered approach than the UK model by lowering barriers to entry and has a greater emphasis on industry benefits,<sup>27</sup> This is corroborated by entrepreneurs of FinTech startups, who admitted its highly practical benefits.<sup>28</sup> Most notably, not only are Sandbox entities freed from the administrative and financial burdens imposed under an ordinary compliance process, they are also entitled to a broader testing ground (whereas licensed operators may reach out only to a limited group of clients),<sup>29</sup> which is crucial for refining their core technologies.

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<sup>17</sup> *Ibid.*

<sup>18</sup> Interview with officials from FTIG and SurTech department, 7 October 2018, Singapore.

<sup>19</sup> FTIG will be headed by Sopnendu Mohanty as its Chief FinTech Officer. Sopnendu joins MAS from Citibank, where he was the Global Head of Consumer Innovation Lab Networks & Programmes. He will report to Jacqueline Loh, Deputy Managing Director (Markets & Development).

<sup>20</sup> Interview with SupTech head of MAS, Mr. Li, 7 October 2018, Singapore. See also MAS, Media Release, “MAS sets up new FinTech & Innovation Group” (27 July 2015), online: <<https://www.mas.gov.sg/news/media-releases/2015/mas-sets-up-new-fintech-and-innovation-group>>.

<sup>21</sup> MAS, “FinTech Regulatory Sandbox Guidelines” (16 November 2016) at para 2.3.

<sup>22</sup> MAS, “Regulatory Sandbox”, online: <<http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/FinTech-Regulatory-Sandbox.aspx>>.

<sup>23</sup> Iris H-Y Chiu, “FinTech and Disruptive Business Models in Financial Products” (2016) 21 *Journal of Technology Law & Policy* at 61-63.

<sup>24</sup> *Supra* note 2.

<sup>25</sup> *Supra* note 18.

<sup>26</sup> *Supra* note 21.

<sup>27</sup> *Supra* note 18.

<sup>28</sup> Telephone interview with CEO and founder of a FinTech startup in Singapore, Mr. Li, 7 October 2018, Singapore.

<sup>29</sup> *Ibid.*

Since August 2015, FTIG has received over 3,000 wide-ranging inquiries on regulatory compliance and issues for clarification from various interested parties, such as the media, start-ups, financial institutions, investors and MAS' international counterparts.<sup>30</sup> Sandbox has provided guidance to more than 140 organisations as of July 2018.<sup>31</sup> More than 50 formal applications have been put up,<sup>32</sup> about half were withdrawn; a third proceeded without the need for Sandbox,<sup>33</sup> with the remainder being approved or remaining under review.<sup>34</sup> Interviewed entrepreneurs reported quick responses and a high rate of reply from MAS on questions regarding Sandbox,<sup>35</sup> and a favourable regulatory attitude towards financial innovation.<sup>36</sup> These successes have in part been due to MAS' flexible and efficient approach in addressing inquiries: questions received through various channels, such as MAS' public queries hotline and email, the FinTech Office, Sandbox mailboxes and other departments, both in and outside of MAS, are all promptly addressed. In this respect, FTIG officers work closely with other departments within MAS and other government agencies to formulate responses to the FinTech companies.<sup>37</sup>

Nevertheless, as of 26 July 2019, there are only two active experiments in Sandbox: ICHX Tech Pte Ltd and Inzsure Pte Ltd.<sup>38</sup> Three Sandbox entities have graduated, namely PolicyPal,<sup>39</sup> Thin Margin<sup>40</sup> and Kristal Advisors,<sup>41</sup> which continued to be licensed after graduation,<sup>42</sup> while others like TransferFriend Pte Ltd have exited the sandbox but failed to obtain the relevant regulatory status.<sup>43</sup>

These low figures conform with MAS' view of Sandbox as a last resort to facilitate innovation, with the primary tool being instituting facilitative regulations in the first place.<sup>44</sup> In other words, Sandbox should only be used when it is unclear under current legal regimes as to how to regulate a particular entity. The practical reality in facilitating FinTech development is that an *activity-based* approach may be required, where regulatory thresholds are tailored to specific

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<sup>30</sup> Email consultation with MAS officers, 25 August 2018 (on file with the author).

<sup>31</sup> "MAS Annual Report 2017/18" - Remarks by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at the MAS Annual Report 2017/18 Media Conference on 4 July 2018.

<sup>32</sup> *Supra* note 18.

<sup>33</sup> *Supra* note 18.

<sup>34</sup> *Ibid.*

<sup>35</sup> Interview with a venture capitalist based in Singapore, Ms Ding (anonymity required), 18 August 2018; Interview with an entrepreneur in a startup firm based in Singapore, Mr Pang (anonymity required), 18 August 2018.

<sup>36</sup> Interview with the CEO and founder of a FinTech startup firm based in Singapore, Rosaline Chow Koo, 14 May 2019, Singapore.

<sup>37</sup> *Supra* note 30.

<sup>38</sup> *Supra* note 22.

<sup>39</sup> Insurance Startup PolicyPal Graduates from MAS FinTech Regulatory Sandbox, <https://www.straitstimes.com/business/companies-markets/insurance-start-up-policypal-graduates-from-mas-fintech-regulatory>. It is worth noting that PolicyPal has raised 20 million US Dollars in a recent initial coin offering: see Yon Heong Tung, "PolicyPal raises US\$20M in token sale to develop blockchain-based insurance products", *e27* (15 March 2018), online: <<https://e27.co/policypal-raises-us20m-token-sale-develop-blockchain-based-insurance-products-20180315/>>.

<sup>40</sup> Thin Margin, Terms of Use, <https://www.thinmargin.com/terms>

<sup>41</sup> An Interview with Asheesh Canda, Kristal.AI Co-founder and CEO (2018) *The Silicon Review*, <https://thesiliconreview.com/magazines/an-interview-with-asheesh-chanda-kristal-ai-co-founder-and-ceo-our-motto-is-to-democratize-investments/>

<sup>42</sup> Christopher Chen, "Regulatory Sandboxes in the UK and Singapore: A Preliminary Survey" at 20.

<sup>43</sup> *Ibid* at 20.

<sup>44</sup> *Supra* note 18.



risks.<sup>45</sup> The unclear admission criteria to Sandbox, as raised by many local entrepreneurs,<sup>46</sup> may thus be attributable to regulators still being in the process of calibrating the right balance between encouraging financial innovation and protecting investors. This seems to be corroborated by a plain reading of the criteria of admission of both the Singapore and UK Sandboxes—although certain regulatory tendencies can be detected, Singapore’s criteria appear less rule-based, carry fewer pre-requisites and seem to leave room for deliberation on a case-by-case basis.<sup>47</sup> Local entrepreneurs have also highlighted some salient business considerations which may militate against the use of Sandbox.<sup>48</sup>

Further, a notable feature in the regulator’s use of Sandbox is that its regulatory focus is policy rather than technology. By allowing entities to operate under conditions that, among other things, relax regulatory requirements, Sandbox is designed to provide feedback as to the utility and propriety of current policies.<sup>49</sup> This allows MAS to then revise its regulatory approach where appropriate. This stands in clear contrast with the innovation-focused UK approach, where it has been observed that admission into sandbox was granted to firms which arguably did not fall into any existing regulatory framework so as to require sandbox in the first place.<sup>50</sup>

As will be discussed below, the lack of interpretative power by the regulators may be another reason for the introduction of Sandbox in Singapore.<sup>51</sup>

Nevertheless, the fact that only a very few firms experiment with the Sandbox motivated a recalibration of the initiative to encourage more startups in Singapore,<sup>52</sup> “to allow more room for innovation”.<sup>53</sup> A recent consultation paper on the Sandbox Express has been published, which proposes a more targeted approach.<sup>54</sup> Building on earlier experiences, MAS is proposing a complementary policy known as “Sandbox Express”, where regulatory reliefs are pre-determined.<sup>55</sup> It is further proposed that MAS will assess Sandbox Express applications on two

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<sup>45</sup> MAS, ‘Singapore FinTech Journey 2.0 – Remarks by Mr Ravi Menon’, <http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2017/Singapore-FinTech-Journey-2.aspx>

<sup>46</sup> For the use of Sandbox specifically, interviewees have expressed the view that they were unclear with MAS’ admission standard as to whether to focus on business modules or technology innovation. Interview with a venture capitalist based in Singapore, Ms Ding (anonymity required), 18 August 2018. Interview with an entrepreneur in a FinTech firm based in Singapore, Mr Li (anonymity required), 18 August 2018.

<sup>47</sup> For Singapore FinTech Regulatory Sandbox Guidelines, see *supra* note 21. See also Chen, *supra* note 42 for a comparison between the sandbox admission criteria of Singapore and the UK: for example, the UK Financial Conduct Authority requires the applicant to have some form of consumer protection mechanism and a UK bank account to ensure a higher likelihood of compensation for aggrieved customers.

<sup>48</sup> Some interviewed founders of FinTech startups based in Singapore have highlighted the publicity associated with Sandbox as a double-edged sword: on the one hand, admission into Sandbox may appear as government support; on the other hand, being put on Sandbox means that the business ideas are revealed to potential competitors. Also, the risk of failure as a Sandbox entity, if eventualised, may be fatal to the company.

<sup>49</sup> *Supra* note 22; and Chen, *supra* note 42 at 18.

<sup>50</sup> Chen, *supra* note 42 at 11, 20.

<sup>51</sup> *Infra text accompanying note 151.*

<sup>52</sup> Ministry of Communications and Information, “We need more startups in Singapore”, online: <<https://www.gov.sg/microsites/future-economy/press-room/news/content/we-need-more-startups-in-singapore>>.

<sup>53</sup> *Ibid.*

<sup>54</sup> MAS, “Consultation Paper on Sandbox Express” (14 November 2018) Monetary Authority of Singapore Consultation Paper No P015-2018.

<sup>55</sup> *Ibid* at para 1.3.

criteria:<sup>56</sup> technological innovativeness, and fitness and propriety of the applicant’s key stakeholders. Sandbox Express is conceived to make applications more expedient so as to reduce the resource-cost to applicants.<sup>57</sup>

### (c) Regulation Technology

Regulation Technology (“RegTech”) refers to the use of advanced technology systems and algorithms to enhance risk management and regulatory compliance.<sup>58</sup> It benefits regulators by enabling superior monitoring and improving reporting accuracy, providing close to real-time insights into the functioning of markets. This allows regulators to protect consumers more effectively and pre-empt potential problems, rather than being confined to taking enforcement actions after a breach.<sup>59</sup> Overall, financial market participants benefit from such initiatives in the form of substantial cost savings.<sup>60</sup> Importantly, RegTech may also be a natural response to the increasingly digital nature of global finance and the deepening fragmentation of market participants resulting from the emergence of new FinTech startups.<sup>61</sup>

Singapore has promulgated various RegTech initiatives, including Know-Your-Customer (“KYC”) Utility and Supervisory Technology (“SupTech”).<sup>62</sup> To better inform and implement these far-reaching initiatives, MAS organises RegTech-Financial-Institution dialogues, which are regular closed-door dialogues allowing for mutual sharing. Through such exchanges, MAS can better recognise financial institutions’ pain points and needs, so that initiatives can be designed to address real needs, and financial institutions can at the same time better understand MAS’ regulatory rationales.<sup>63</sup>

Regarding KYC Utility, MAS is currently liaising with various local and foreign banks to explore setting up a shared-service platform of KYC operations using the MyInfo platform.<sup>64</sup> This arose out of MAS’ observations of the duplication of functions and inefficiencies stemming from the banks’ use of individual platforms.<sup>65</sup> If actualised, this integrated platform would harmonise the KYC policy requirements across banks and allow significant systemic efficiencies to be reaped.

In terms of SupTech, Singapore has constantly been scanning the RegTech ecosystem, either through RegTech firms or organisations like the Singapore FinTech Association, to identify

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<sup>56</sup> *Ibid* at para 3.4.

<sup>57</sup> *Ibid* at para 2.3.

<sup>58</sup> MAS, Speeches, “‘Banking Supervision – The Path Ahead’ – Opening Address by Mr Ong Chong Tee, Deputy Managing Director (Financial Supervision), Monetary Authority of Singapore, at 13th Asia-Pacific High Level Meeting on Banking Supervision on 28th February 2018” (1 March 2018) online: <<https://www.mas.gov.sg/news/speeches/2018/banking-supervision>>. Earlier on 14 November 2017 at the Singapore FinTech Festival, Mr Menon emphasised the importance of making regulation conducive to FinTech innovation. See MAS, Speeches, “Singapore FinTech Journey 2.0 – Remarks by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at Singapore FinTech Festival on 14 November 2017” (14 November 2017), online: <<http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2017/Singapore-FinTech-Journey-2.aspx>>.

<sup>59</sup> D. Arner, “FinTech, RegTech, and the Reconceptualization of Financial Regulation” (2017) 37:3 *Northwestern Journal of International Law & Business* 371 at 382.

<sup>60</sup> *Ibid* at 376.

<sup>61</sup> *Ibid* at 375 and 389.

<sup>62</sup> See MAS, media releases, “MAS Sets up Data Analytics Group” (14 February 2017), online: <https://www.mas.gov.sg/news/media-releases/2017/mas-sets-up-data-analytics-group>.

<sup>63</sup> *Supra* note 18.

<sup>64</sup> *Supra* note 45.

<sup>65</sup> Questions and Answers on KYC Utility from the Monetary Authority of Singapore, 9 September 2018.



potential SupTech solutions for complex regulatory issues in a digital economy.<sup>66</sup> MAS is currently working on several projects involving the use of machine learning, natural language processing, data visualisation and big data technology to solve thorny problems including Suspicious Transaction Report network analysis, stock exchange market manipulation detection and creating a dashboard for the banking and insurance industry.<sup>67</sup>

#### **(d) Other Regulatory Initiatives for FinTech Ecosystem**

Singapore has also recognised the need for a comprehensive “FinTech ecosystem” to realise a future where the financial sector is “customised for our needs, invisible to our eyes, and an absolute delight”.<sup>68</sup> This FinTech ecosystem has six components: (1) people, (2) identity, (3) payments, (4) data governance, (5) applied research, and (6) platforms for innovation.<sup>69</sup> MAS has formulated an approach to technological development specific to each of these categories.

MAS regards people as “the most critical part of the (FinTech) ecosystem”.<sup>70</sup> This is unsurprising in light of Singapore’s lack of natural resources and so focus on workforce development. The approach taken by Singapore is a multi-pronged one: institutes of higher learning are adapting their curriculum to develop tech-savvy students,<sup>71</sup> financial institutions are creating programmes to re-skill mid-career professionals and Singapore’s policies continue to be geared towards attracting the top global talents.

The KYC problem of identity verification has posed a great challenge to the industry. Singapore is moving towards building a National Digital Identity (“NDI”), an initiative which allows every resident of Singapore to establish his legal identity in a secure manner when making online transactions. This process is secured using two-factor authentication and a public-private key pair and is built on the existing SingPass system. Crucially, the most important component of NDI is MyInfo, a digital service that “enables citizens to authorise third-parties to access their personal data sitting across many different government agencies”.<sup>72</sup> This has an identity-verification function which allow third parties to base business decisions on government-verified data on the customers, and has met with some success in terms of the uptake – more than 20 FIs are now using MyInfo to provide more than 110 digital financial services.<sup>73</sup>

Singapore’s payments infrastructure has seen rapid developments. A slew of facilities are now available: FAST, a 24x7 real-time funds transfer infrastructure; PayNow, which rides on FAST to enable instant money transfer to natural persons or businesses; unified point-of-sale

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<sup>66</sup> *Ibid.*

<sup>67</sup> *Ibid.* *Supra* note 18.

<sup>68</sup> MAS, Speeches, “‘Singapore FinTech: Innovation, Inclusion, Inspiration’ - Presentation by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore at Singapore FinTech Festival 2018 on 12 November 2018” (12 November 2018), online: <http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2018/Singapore-FinTech.aspx> [*Menon*].

<sup>69</sup> *Ibid.*

<sup>70</sup> *Ibid.*

<sup>71</sup> See also, Skillsfuture, <https://www.skillsfuture.sg/digitalworkplace>

<sup>72</sup> *Ibid.* See also Straits Times, “Collecting NRIC numbers and making copies of the identity card will be illegal from Sept 1, 2019”, online: <https://www.straitstimes.com/singapore/collecting-nric-numbers-and-making-copies-of-the-identity-card-will-be-illegal-from-sept-1>

<sup>73</sup> *Ibid.*

terminals (“UPOS”) which accept all major credit card brands; and SGQR, a standardised QR code that can represent multiple payment schemes.

In the payments context, Project Ubin<sup>74</sup> and MAS’ international approach to “more efficient cross-border payments” bears further mentioning. In 2018, Project Ubin successfully harnessed blockchain technology for the settlement of tokenised assets – essentially, digital currencies and securities assets were tokenised so that they could be simultaneously exchanged, thus achieving final settlement and “DvP” (or “delivery-vs-payment” – completing transactions with concurrent payment and exchange of goods).

Data governance has manifested in, among other things, MAS developing principles to guide the responsible use of data in financial services – the FEAT principles.<sup>75</sup> These principles promote Fairness, Ethics, Accountability and Transparency in the use of AI and data analytics. One emerging area is open banking, a system for sharing data between financial institutions using application programming interfaces (API) and while there is an API playbook produced by the Association of Banks of Singapore,<sup>76</sup> there are no mandatory standards to comply. Some commentators have urged for the development of opening banking standards, but whether this actualises remains to be seen. On the international front, MAS is exploring ways in which data standards may be standardised across countries, with the view that “data connectivity agreements among countries will become as important as today’s free trade agreements” in the future.<sup>77</sup>

Applied research is another key area. To support this area, MAS launched a S\$27 million grant scheme in 2017 with the objective of supporting R&D in AI and data analytics for the financial sector.<sup>78</sup> This scheme has since received more than 30 applications from financial and research institutions. Furthermore, MAS has begun collaborating with MIT Media Lab for the purposes of FinTech R&D, and the Intellectual Property Office of Singapore has established a FinTech Fast Track initiative for patents, potentially shortening the timeline for patent applications to six months, where the industry convention is about two years.<sup>79</sup>

Finally, platforms are being set up to connect people and ideas, problems and solutions, and to foster collaboration and encourage innovation. These platforms include the ASEAN Financial Innovation Network (“AFIN”), which is spearheaded by MAS, the ASEAN Bankers Association, and the World Bank’s International Finance Corporation; Business sans Borders

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<sup>74</sup> MAS, “Project Ubin: Central Bank Digital Money using Distributed Ledger Technology”, online: <<https://www.mas.gov.sg/schemes-and-initiatives/Project-Ubin>>; see also MAS & Deloitte, “Project Ubin: SGD on Distributed Ledger” (2017) at 12, online: <<https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/financial-services/sg-fsi-project-ubin-report.pdf>>.

<sup>75</sup> MAS, Media Release, “MAS introduces new FEAT Principles to promote responsible use of AI and data analytics” (12 November 2018), online: <<http://www.mas.gov.sg/News-and-Publications/Media-Releases/2018/MAS-introduces-new-FEAT-Principles-to-promote-responsible-use-of-AI-and-data-analytics.aspx>>.

<sup>76</sup> See MAS API playbook, available at <https://abs.org.sg/docs/library/abs-api-playbook.pdf>

<sup>77</sup> *Supra* note 68.

<sup>78</sup> MAS, Media Release, “New S\$27 million grant to promote Artificial Intelligence and Data Analytics in Financial Sector” (15 November 2017), online: <<https://www.mas.gov.sg/news/media-releases/2017/new-27-million-grant-to-promote-artificial-intelligence-and-data-analytics-in-financial-sector>>; MAS, Media Release, “Strengthening the AI ecosystem in Singapore’s financial sector” (7 May 2018), online: <<https://www.mas.gov.sg/news/media-releases/2018/strengthening-the-ai-ecosystem-in-singapore-financial-sector>>.

<sup>79</sup> *Menon, supra* note 68.

(“BSB”), a cross-border innovation platform for small and medium enterprises being set up by MAS and the InfoComm Media Development Authority; and the Singapore FinTech Association, a cross-industry non-profit initiative intended to be a platform designed to facilitate collaboration between all market participants and stakeholders in the FinTech ecosystem.<sup>80</sup> To take the AFIN as an example, the network has developed the API Exchange, an online marketplace and sandbox for FinTech-related APIs – the world’s first cross-border, open architecture platform to enhance financial inclusion.<sup>81</sup>

In addition to this comprehensive approach towards building a strong FinTech ecosystem, MAS has also put effort into organising community-based events. The vibrancy of Singapore’s FinTech landscape can clearly be seen through the Singapore FinTech Festival, which is the world’s largest annual FinTech festival.<sup>82</sup> The festival is held on an annual basis and provides a discussion platform for key stakeholders of the FinTech community to share insights and create solutions.<sup>83</sup>

#### **(e) Enforcement**

MAS’ enforcement focus centres on three areas, which are broadly defined as: (1) Market abuse, (2) Financial services misconduct and (3) Money laundering-related control breaches. Under each of these areas, MAS has promulgated key initiatives to address wrongdoing in its various complex and sophisticated forms.

These key initiatives blend technology with enforcement experience in order to manifest sophisticated enforcement tools. For example, Project Apollo is an Augmented Intelligence tool used in conjunction with other analytical frameworks to triage cases (specifically market abuse cases) for investigation.<sup>84</sup> To achieve this, the Project Apollo system automates the computation of key metrics used for trade analysis and predicts the likelihood that an expert will opine that market manipulation has occurred. An interactive dashboard is provided for the visualisation of Apollo's results and predictions.

As regards financial services misconduct and money laundering-related control breaches, MAS has leveraged data analytics in pre-emptively flagging out suspicious cases for further investigation. For example, in order to detect financial advisory misconduct, large datasets pertaining to five categories of information are combined to identify potential misconduct cases using rule-based and advanced analytics. These five categories are: the (i) profile of customers, (ii) investment products, (iii) profile of financial advisory representatives, (iv) compliance conduct of financial advisory representatives and (v) transactional information. Similarly,

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<sup>80</sup> *Ibid.*

<sup>81</sup> MAS, Media Release, “World's First Cross-Border, Open-Architecture Platform to Improve Financial Inclusion” (17 September 2018) (on file with the author).

<sup>82</sup> MAS, Media Release, “World’s largest FinTech Festival taking place in Singapore this week”, online: <<http://www.mas.gov.sg/News-and-Publications/Media-Releases/2017/Worlds-largest-FinTech-Festival-taking-place-in-Singapore-this-week.aspx>>.

<sup>83</sup> Fintechnews Singapore, “Highlights of the Singapore Fintech Festival 2018” (19 November 2018), online: <<http://fintechnews.sg/26301/events/highlights-of-the-singapore-fintech-festival-2018/>>.

<sup>84</sup> Jamie Lee, “MAS builds in-house tool to spot rogue trading early, with 98% accuracy”, (20 March 2019) BUSINESS TIMES, [HTTPS://WWW.BUSINESSTIMES.COM.SG/BANKING-FINANCE/MAS-BUILDS-IN-HOUSE-TOOL-TO-SPOT-ROGUE-TRADING-EARLY-WITH-98-ACCURACY](https://www.business-times.com.sg/BANKING-FINANCE/MAS-BUILDS-IN-HOUSE-TOOL-TO-SPOT-ROGUE-TRADING-EARLY-WITH-98-ACCURACY)

MAS uses data analytics to sharpen and intensify the Anti-Money-Laundering/Countering the Financing of Terrorism policy of supervision over financial institutions and their relevant activities.

However, despite the burgeoning status of RegTech as a go-to regulatory compliance option, it comes with its own set of challenges. For one, there are concerns over its complexity, given that RegTech requires substantial financial resources, access to data, and talented workforce to harness properly. Regulatory authorities must possess both compliance knowledge and technological expertise, and so will have to engage data scientists to augment the technological capabilities of the regulatory team. Further, just as technology can be utilised for good, it can also be used by businesses to evade regulations and frustrate regulators, a phenomenon referred to as anti-RegTech.<sup>85</sup>

The heavy use of technology in the financial sector has also given rise to new challenges in the area of regulatory enforcement. The digital transformation of finance has made the financial services industry far more vulnerable to increased risks of attack, theft, fraud, and other cyber-criminal activity.<sup>86</sup> As the range of financial innovations, the prevalence of their use, and their pace of evolution have increased substantially, regulators face mounting difficulty in developing appropriate regulatory responses. A recently reported enforcement outcome catalogues actions taken on breaches of MAS-administered Acts, Regulations and Notices:<sup>87</sup> 1 criminal conviction for false trading, \$16.8 million in financial penalties and compositions across 42 financial institutions, \$698,000 in civil penalties in relation to 2 insider trading cases and 1 case of unauthorised trading, 19 prohibition orders and 37 reprimands, among other penalties. These figures suggest that the growth of FinTech businesses may have led to new risks emerging and the exploitation of technology in financial crime activities.

### 3. LAW AND REGULATORY REFORMS

Apart from building a conducive regulatory infrastructure for FinTech, Singapore has also enacted and revised relevant legislation in the area of FinTech to provide a more favourable environment for financial innovation and to mitigate the new risks that come with embracing new technologies. This is important because while there is a broad consensus amongst regulators that FinTech poses significant risks, there is generally a lack of comprehensive regulation for this young and evolving market, leading to problems which affect market integrity and consumer protection. More regulation may limit the disruptive impact of FinTech innovations, but this must be balanced against the maintenance of public interest objectives, which may include consumer protection,<sup>88</sup> or other equally important goals. Brummer and Yadav highlight three “foundational objectives” which are “germane to all regulatory agencies

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<sup>85</sup> Nizan Packin, “Regtech, Compliance and Technology Judgement Rule” (2018) 93:1 Chicago-Kent Law Review 193 at 194, online: <<https://scholarship.kentlaw.iit.edu/cgi/viewcontent.cgi?article=4198&context=cklawreview>>.

<sup>86</sup> *Supra* note 59.

<sup>87</sup> MAS, “MAS Enforcement Report July 2017 to December 2018” (20 March 2019), online: <<https://www.mas.gov.sg/-/media/MAS/News-and-Publications/Monographs-and-Information-Papers/MAS-Enforcement-Report.pdf>> at 7.

<sup>88</sup> Iris H-Y Chiu, “A new era in fintech payment innovations? A perspective from the institutions and regulation of payment systems” (2017) 9:2 Law, Innovation and Technology 190 at 195 and 210-211.

and underlie rulemaking in the context of fintech”:<sup>89</sup> (1) market integrity, (2) rules simplicity and (3) financial innovation. Between the three objectives highlighted, regulators can achieve at most two at any given time, since prioritising any two objectives will invariably involve pursuing policies with drawbacks as regards the third objective.<sup>90</sup> It appears that the MAS in Singapore prioritises market integrity and financial innovation as their two objectives and the author is of the view that this approach balances consumer protection well with the need for an environment conducive for financial innovation.

The Trilemma Model itself contemplates shifts in policy depending on which objectives are most important in the circumstances, and Brummer and Yadav suggest that policymakers are currently utilising a “range of approaches” with “varying forms of control, experimentation and guidance”.<sup>91</sup> This is indeed the type of approach MAS takes toward regulation, mixing comprehensive licensing regimes, broad categorisations and more informal guidance, depending on the particular area involved.

#### **(a) Payment Services Act**

The rise of FinTech has led to considerable change in the payment services landscape.<sup>92</sup> To mitigate the new risks brought by the evolving payment sector, there is a strong need to update the currently existing regulatory framework on payments.<sup>93</sup> The Singapore Parliament has recently passed the Payments Services Act 2019<sup>94</sup> (No. 2 of 2019) to address the following key risks: money-laundering and terrorism financing (“ML/TF”); loss of funds owed to consumers or merchants due to insolvency; fragmentation and limitations to interoperability; and technology and cyber risks.<sup>95</sup> The Act takes a risk-based approach and regulations only apply where a licensee conducts an activity that poses an identified risk.

The Act seeks to establish two parallel regulatory frameworks.<sup>96</sup> These are a designation framework for significant payment systems<sup>97</sup> and a licensing framework for payment service providers.<sup>98</sup> The former enables MAS to designate significant payment systems and regulate operators, settlement institutions and participants of these designated payment systems,<sup>99</sup> while the latter relates to the establishment of a single licensing regime.<sup>100</sup>

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<sup>89</sup> Chris Brummer & Yesha Yadav, “FinTech and the Innovation Trilemma” (2019) 107:2 Geo LJ 235 at 244.

<sup>90</sup> *Ibid* at 249.

<sup>91</sup> *Ibid* at 282.

<sup>92</sup> MAS, Speeches, “Explanatory Brief on the Payment Services Bill” (19 November 2018) at para 2, online: <<https://www.mas.gov.sg/news/speeches/2018/explanatory-brief-on-the-payment-services-bill>> (Bill passed by Parliament on 14 January 2019).

<sup>93</sup> MAS, “Consultation Paper on Proposed Payment Services Bill” (November 2017) Monetary Authority of Singapore Consultation Paper No P021-2017, online: <[https://www.mas.gov.sg/-/media/MAS/resource/publications/consult\\_papers/2017/Consultation-on-Proposed-Payment-Services-Bill-MAS-P0212017.pdf](https://www.mas.gov.sg/-/media/MAS/resource/publications/consult_papers/2017/Consultation-on-Proposed-Payment-Services-Bill-MAS-P0212017.pdf)>.

<sup>94</sup> Online: <<https://sso.agc.gov.sg/Acts-Supp/2-2019/Published/20190220?DocDate=20190220>>.

<sup>95</sup> *Supra* note 9292 at para 4.

<sup>96</sup> *Ibid* at para 6.

<sup>97</sup> See Payment Services Act, Part 3

<sup>98</sup> *Ibid*, Part 2.

<sup>99</sup> *Supra* note 92 at para 7.

<sup>100</sup> *Ibid* at para 8.

The licensing regime applies to providers of seven types of payment services.<sup>101</sup> Providers of these services will be required to hold one of three classes of licence in respect of the type of payment service provided: a money-changing license, a standard payment institution license or a major payment institution license. Generally speaking, money-changing licensees can conduct only money-changing services while standard payment institutions may conduct any combination of regulated activities that are below specified thresholds; both will be regulated primarily for ML/TF risks.<sup>102</sup> Only major payment institutions may carry out payment services above certain thresholds,<sup>103</sup> and are therefore subject to more comprehensive regulations.

In addition, applicants must comply with the following requirements: the applicant must be a company; must have a permanent place of business in Singapore or a registered office in Singapore; and must have at least one executive director who is a Singapore citizen or Singapore Permanent Resident, or a person belonging to a class of persons prescribed by MAS.<sup>104</sup> The Act also includes key risk-mitigating provisions to safeguard customer monies from insolvency,<sup>105</sup> reduce fragmentation of widely-used payment solutions,<sup>106</sup> impose technology and cybersecurity risk management requirements on licensees<sup>107</sup> as well as require compliance with ML/TF risk mitigating measures.<sup>108</sup> Finally, there are two categories of carve-outs from the scope of application of the Act.<sup>109</sup> Firstly, it does not apply to services that are not payment services.<sup>110</sup> Secondly, some risk-mitigation measures, in particular ML/TF risk mitigations, will not apply to certain low risk services.<sup>111</sup> Essentially, this new licensing regime is a more comprehensive and robust framework than what previous legislation had provided for.<sup>112</sup>

The Payment Services Act is a key step in the ongoing process of FinTech regulation in Singapore, aimed at facilitating innovation in payment services. The shift to a more streamlined framework has been hailed as giving smaller firms “an opportunity to grow their business

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<sup>101</sup> *Supra* note 93 at para 3.7:

- (a) Activity A: Account issuance services
- (b) Activity B: Domestic money transfer services
- (c) Activity C: Cross border money transfer services (i.e. remittance business)
- (d) Activity D: Merchant acquisition services
- (e) Activity E: E-money issuance services
- (f) Activity F: Virtual currency services/digital payment token services (i.e. virtual currency intermediation)
- (g) Activity G: Money-changing services

<sup>102</sup> *Supra* note 92 at para 9.

<sup>103</sup> *Supra* note 9393 at para 4.7: a) Accepting, processing, or executing a monthly average of transactions (including all payment transactions) above S\$3 million in a calendar year; or b) Holding an average daily e-money float above S\$5 million in a calendar year.

<sup>104</sup> *Supra* note 92 at para 10.

<sup>105</sup> *Supra* note 92 at para 13.

<sup>106</sup> *Ibid* at para 14.

<sup>107</sup> *Ibid* at para 15.

<sup>108</sup> *Ibid*.

<sup>109</sup> PwC, “Strengthening Singapore’s payment services through regulation: MAS’ proposed Payment Services Bill” (January 2018), online: <<https://www.pwc.com/sg/en/publications/assets/mas-payment-services-bill-201801.pdf>>.

<sup>110</sup> Payment Services Act, First Schedule, Part 2, *Services that are not payment services*.

<sup>111</sup> Such as money transfer services used for payment for goods or services funded from an identifiable source.

<sup>112</sup> MAS, Speeches, “Payment Services Bill” - Second Reading Speech by Mr Ong Ye Kung, Minister For Education, On Behalf of Mr Tharman Shanmugaratnam, Deputy Prime Minister and Minister-In-Charge of The Monetary Authority of Singapore on 14 Jan 2019” (14 January 2019) at para 19, online: <<http://www.mas.gov.sg/News-and-Publications/Speeches-and-Monetary-Policy-Statements/Speeches/2019/Payment-Services-Bill.aspx>>.



without being snuffed out by over-regulation”.<sup>113</sup> It is also recognised that consumers would benefit by the “requirement to disclose the risk”.<sup>114</sup> More generally, it is anticipated that the proposed changes would act as a “catalyst” for ongoing development of the payment services industry, with the main focus being on reassessing ways of managing risk.

However, the proliferation of legal jargon is a point of concern, and it remains to be seen whether consumers will sufficiently understand the full extent of risks they will be exposing themselves to when engaging with FinTech. While crypto-currencies can meet the requirement of certainty of subject matter and so considered property held in trust,<sup>115</sup> there is no settled definition of “crypto-currency”, “crypto-payment” or “crypto-assets” in the Payment Services Act. Rather, the Act gives “digital payment tokens” an expansive definition which encompasses the different forms of crypto-currencies.<sup>116</sup> This may result in confusion and uncertainty for those seeking to introduce virtual currency in the course of their business, who will have to grapple with whether such virtual currency falls within the Act, thereby triggering licensing requirements.

The extensive scope of “digital payment tokens” may also potentially encompass digital assets which were not originally intended to be used to make payment, but are used to make payment by the agreement of third parties. This definition appears too wide and practically covers all digital assets that are transferable and fungible. This issue is exacerbated by the absence of any restriction on the identity of the payee, such that the use of a digital asset by any person other than the issuer to make payment can satisfy the definition. Consequently, intermediaries which do not wish to be licensed under the Act may have to closely monitor the digital assets they are dealing with, which will likely result in disproportionate compliance costs even if it is possible to track if a digital asset is being used for payment.<sup>117</sup>

Nevertheless, MAS has the power to prescribe additional characteristics for “digital payment tokens”, providing room for the definition of “digital payment tokens” to evolve timeously. This will be a valuable tool in ensuring the definition keeps up with technological developments.<sup>118</sup>

However, other questions also surround the definition of “digital payment tokens”. For example, it is unclear what constitutes “[acceptance] by the public” and how a “section of the public” should be properly identified. Accordingly, it would be beneficial for regulators to

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<sup>113</sup> Fintechnews Singapore, “What Does the New Payment Services Bill Mean for Singapore?” (15 January 2019), online: <<http://fintechnews.sg/26334/mobilepayments/payment-services-bill-singapore/>>.

<sup>114</sup> *Ibid.*

<sup>115</sup> *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 03.

<sup>116</sup> Chris Holland, “The Singapore Payment Services Act” (26 February 2019) *Medium*, online: <<https://medium.com/@g.chris.holland/the-singapore-payment-services-act-the-curious-case-of-the-computer-power-rental-platform-token-4a9a52e49f60>> (a “digital payment token” is defined as any digital representation of value that is expressed as a unit; is not denominated in any currency, and is not pegged by its issuer to any currency; is, or is intended to be, a medium of exchange accepted by the public, or a section of the public, as payment for goods or services or for the discharge of a debt; and can be transferred, stored or traded electronically).

<sup>117</sup> Gary Tse, “Singapore: Making sense of digital payment tokens under the Payment Services Act” (26 June 2019) *Taylor Vinters Via LLC*, online: <<https://www.lexology.com/library/detail.aspx?g=33ca7d93-7f6d-4753-a244-7258bbbf6011>>.

<sup>118</sup> *Ibid.*

provide further clarifications and guidelines in due course, shedding light on the boundaries of what counts as a “digital payment token”.<sup>119</sup>

### **(b) Guidelines on Digital Tokens**

Another phenomenon that has emerged with the development of technology is the rise of digital tokens and Initial Coin Offerings (ICOs). By mid-2017, ICOs had surpassed angel and venture capital funding as an efficient and inexpensive method of early-stage financing for blockchain tech start-ups.

Notably, in 2017, Singapore grew to become the world’s third-largest ICO launch pad (after the US and Switzerland) in terms of funding raised, and the second-largest in 2018. This is largely attributable to how MAS has sought to strike a fine balance between engaging the industry and fostering entrepreneurial endeavours on one hand, and protecting consumers and addressing ML/TF concerns on the other. This is evident from MAS’s release of ‘A Guide to Digital Token Offerings’ (the Digital Token Guide) on 14 November 2017<sup>120</sup> in order to provide some clarification on the application of securities laws in relation to offers or issues of digital tokens in Singapore.

The Digital Token Guide specifies that offers or issues of digital tokens may be regulated by MAS if the digital tokens are capital markets products under the SFA (i.e. resemble either an ownership interest in a corporation like a share, a debenture, a unit in a business trust, or a unit in a collective investment scheme, among other things).<sup>121</sup> Consequently, an offer of digital tokens needs to comply with the requirements under the SFA, which includes the requirement that the offer be accompanied by a prospectus prepared in accordance with SFA and registered with MAS.<sup>122</sup>

However, MAS indicated that digital token offerings may be exempt from the prospectus requirements if: (a) the total value of the offering does not exceed S\$5 million or the equivalent in foreign currency within any 12-month period; (b) the offering is a private placement offer made to no more than 50 people within any 12-month period; (c) the offer is made to institutional investors only; or (d) the offer is made to accredited investors.<sup>123</sup> MAS stressed that the above-mentioned exemptions are subject to certain conditions, which includes advertising restrictions.<sup>124</sup> Non-compliance with such requirements are strictly policed, as seen when MAS recently warned an ICO issuer not to proceed with its securities token offering in

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<sup>119</sup> Dharma Sadasivan, “Clarifications from the Monetary Authority of Singapore on Digital Token Offerings” (19 December 2018) *BR Law Corporation*, online: <<https://www.brllawcorp.com/news-and-insights/clarifications-from-the-monetary-authority-of-singapore-on-digital-token-offerings>>.

<sup>120</sup> MAS, “A Guide to Digital Token Offerings” (2017), online: <<http://www.mas.gov.sg/~media/MAS/Regulations%20and%20Financial%20Stability/Regulations%20Guidance%20and%20Licensing/Securities%20Futures%20and%20Fund%20Management/Regulations%20Guidance%20and%20Licensing/Guidelines/A%20Guide%20to%20Digital%20Token%20Offerings%20%2014%20Nov%202017.pdf>> (an updated version of the Guide was released on 5 April 2019).

<sup>121</sup> *Ibid.* at paras. 2.1, 2.3 and 2.4 (under section 2(1) of the SFA, “capital market products” means any securities, futures contracts or arrangements for the purposes of foreign exchange trading, contracts or arrangements for the purposes of leveraged foreign exchange trading, and such other products as MAS may prescribe as capital markets products).

<sup>122</sup> *Ibid.* at para. 2.5.

<sup>123</sup> Digital Token Guide, read with references to the SFA, specifically ss 272A, 272B, 274, 275, 302B, 302C, 304 and 305.

<sup>124</sup> *Ibid.* at para. 2.6 (on these exemptions in detail and in the context of crowdfunding, see Hofmann, C., “An Easy Start for Start-ups: Crowdfunding Regulation in Singapore”, 15:1 *Berkeley Business Law Journal* 219 at 236-239).

Singapore.<sup>125</sup> The ICO issuer had intended to rely on the exemption to the prospectus requirements, but had not complied with the advertising restrictions when its legal advisers put out a LinkedIn post accessible to the public calling attention to the offer. Following this warning, the issuer suspended its global offering of securities tokens. The Digital Token Guide specifies that certain intermediaries might be required to hold various licenses or seek approval from MAS.<sup>126</sup>

MAS reiterated the extra-territoriality of the SFA and the FAA: SFA requirements apply to a person that operates a primary platform, or trading platform, partly in or partly outside of Singapore, or outside of Singapore;<sup>127</sup> FAA requirements apply to a person who is based overseas and engages in any activity or conduct that is intended to or likely to induce the public, or a section of the public, in Singapore to use any financial advisory service provided by the person.<sup>128</sup>

While the Guide provides regulatory clarity on the crypto industry, the contents of the Guide are “not exhaustive, have no legal effect and do not modify or supersede any applicable laws, regulations or requirements”.<sup>129</sup>

#### **4. LESSONS LEARNED**

##### **(a) A Streamlined and Integrated Regulatory Approach**

First, the senior management of MAS has bought-in to its FinTech regulatory initiatives, ensuring smooth implementation. This can be seen from the presence of a unified vision regarding the desired outcomes of FinTech innovation activities within MAS, namely: (1) increasing the efficiency of the financial industry; (2) creating new economic opportunities; (3) managing risks better; and (4) improving customers’ lives.<sup>130</sup> The various initiatives that came after were carefully designed around these general principles to preemptively secure strong management support.<sup>131</sup> Senior management in MAS took the lead of going through internal technology literacy trainings, such as basic Python sessions, to show their active support of MAS’ technology innovation stance,<sup>132</sup> which informally conveys institutional buy-in as well.

Second, MAS’ integration with other related institutions helps facilitate effective regulatory planning. MAS has been working closely with multiple governmental agencies including the Economic Development Board and SPRING Singapore<sup>133</sup> in the area of FinTech innovations

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<sup>125</sup> MAS, Media Release, “MAS halts Securities Token Offering for regulatory breach” (24 Jan 2019), online: <<http://www.mas.gov.sg/News-and-Publications/Media-Releases/2019/MAS-halts-Securities-Token-Offering-for-regulatory-breach.aspx>>.

<sup>126</sup> *Supra* note 120 at para. 2.9, 2.10, and 2.11.

<sup>127</sup> *Ibid* at para. 2.12, section 339 SFA.

<sup>128</sup> *Ibid* at para. 2.13, section 6(2).

<sup>129</sup> *Ibid.* at para. 1.4.

<sup>130</sup> MAS, Speeches, “‘A Smart Financial Centre’ - Keynote Address by Mr Ravi Menon, Managing Director, Monetary Authority of Singapore, at Global Technology Law Conference 2015 on 29 Jun 2015” (29 June 2015), online: <<https://www.mas.gov.sg/news/speeches/2015/a-smart-financial-centre>>.

<sup>131</sup> *Supra* note 2 at page 62.

<sup>132</sup> *Ibid.*

<sup>133</sup> MAS, “MAS’ Role in a Smart Financial Center”, online: <<http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/MAS-Role.aspx>>.

and to streamline the creation of a conducive regulatory environment. To take FTIG as an example, it often engages other related regulators within or outside MAS to formulate appropriate regulatory responses.<sup>134</sup> It also connects with various associations, innovation hubs and law firms in Singapore to seek their professional assistance when needed.<sup>135</sup>

Third, MAS has also developed collaborative internal organisational rules together with related government agencies that ensure efficient handling of tasks. Key to this is the manner in which information and queries have been managed, such that the most relevant office can provide a quick regulatory response. FTIG officers also engage with the FinTech companies and work closely with other departments within MAS and other government agencies to formulate tailored responses to company queries.<sup>136</sup> MAS (and the Singapore government) adopts a “no wrong-door policy”<sup>137</sup> which requires that the officer receiving the query should ensure that the enquirer is provided a response within the stipulated timeline (usually seven working days),<sup>138</sup> regardless of whether the query had been directed to the most appropriate agency.

Fourth, MAS’ internal Technology and Innovation Steering Committee (“TISC”), chaired by MAS’ managing director and consisting of MAS’ top senior management, discusses, reviews and approves regulatory and policy decisions monthly on a balance of supervision needs and developmental value further reflects regulator’s commitment to engaging deeply and timely with FinTech development.<sup>139</sup> The deliberations are intended to ensure broad-level soundness of these initiatives, bearing in mind the overarching balance between necessary supervision and beneficial development –dual policy objectives.<sup>140</sup> With such periodic institutional checks in place, approved initiatives are more likely to achieve smooth implementation with strong internal support.

### **(b) Building a FinTech Ecosystem**

First, with the rapid development and great uncertainty of the market, MAS has adopted an activity-based approach in its regulation of FinTech-related issues.<sup>141</sup> Regulations catch up as and when specific risks and trends arise in the FinTech industry. This shift from an institution-based regulatory approach to an activity-based one is founded on the realization that risks are increasingly correlated with the nature of the relevant activities rather than the labels of the relevant entities.<sup>142</sup>

Second, providers of capital with appetites for FinTech investments is another key. MAS has increased capital supply through various governmental programs. Various grants have been designed for FinTech companies at different developmental stages, and for foreigners and

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<sup>134</sup> Email interview with MAS officers in charge of FTIG, 24 August 2018.

<sup>135</sup> *Ibid.*

<sup>136</sup> *Ibid.*

<sup>137</sup> The “No Wrong Door” policy was introduced in 2004 as a means for the Public Service in Singapore to deal with misdirected feedback or cross-agency issues from the public effectively.

<sup>138</sup> *Supra* note 134.

<sup>139</sup> *Supra* note 18.

<sup>140</sup> *Infra* note 18.

<sup>141</sup> *Supra* note 147.

<sup>142</sup> *Ibid.*

locals alike.<sup>143</sup> Nevertheless, whether these public funding has effectively supported entrepreneurial businesses remain to be proved by future research.

Third, MAS has played a significant role in creating a conducive environment for Singapore's FinTech innovation. FTIG's various initiatives, including the Singapore FinTech Festival, the global FinTech Hackcelerator,<sup>144</sup> FinTech deal day, ASEAN financial inclusion network,<sup>145</sup> and FinTech directory<sup>146</sup> have attracted a variety of companies, industry figures and talents to congregate in Singapore.

Fourth, international cooperation is essential in the ecosystem building as well. Singapore has tapped on resources from other countries to bring in more talent and to strengthen FinTech cooperation with other governments. An example of this practice is Singapore's agreement with Thailand to link both countries' electronic payment systems.<sup>147</sup>

### (c) Regulatory Limitations

Lack of regulatory capacity in terms of adequate resources, staff, expertise, and tools is a major challenge faced by FinTech regulators.<sup>148</sup> "Regulators with limited expertise in technology may find it difficult to understand FinTech and assess its implications for regulation",<sup>149</sup> subjecting the various innovative regulatory initiatives (such as innovation offices, regulatory sandboxes and RegTech for regulators)<sup>150</sup> to inherent limitations. Moreover, regulatory support in the form of sandboxes and innovation offices may also not be feasible in certain jurisdictions due to a lack of financial capacity. The effectiveness of such measures is constrained by whether countries have the financial capacity to attract talent to work in the government sector (especially multidisciplinary officials who versed in both law and technology) and to set up sandboxes and innovative offices. A top-down approach to engineering the FinTech sector may be impracticable if countries lack the budget to properly execute developmental initiatives in large countries; in this respect, Singapore is unique in how it is a small yet wealthy city-state.

Second, Regulatory Sandbox may be unnecessary in certain jurisdictions where the regulators have the power to interpret existing laws and rules, which are in any case not so uncertain as to deter innovation. This may be contrasted with Singapore, where MAS generally does not have any inherent powers to interpret legislation, and therefore requires recourse to the courts to interpret the limits placed on financial innovation by existing legislation.<sup>151</sup> The result is that

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<sup>143</sup> Setting up Your FinTech Business in Singapore, online: <<http://www.mas.gov.sg/Singapore-Financial-Centre/Smart-Financial-Centre/Setting-up-your-Business.aspx>>.

<sup>144</sup> The Global FinTech Hackcelerator is an opportunity for the industry to submit their problem statements to be solved by the Fintechs (i.e. matching demand with supply) in a 12-week experiment.

<sup>145</sup> *Supra* note 30.

<sup>146</sup> Together with the Singapore FinTech Association, MAS has also published the FinTech Directory, which is a free-to-use listing of FinTech in Singapore.

<sup>147</sup> *Supra* note 45.

<sup>148</sup> Ivo Jenik and Kate Lauer, Regulatory Sandboxes and Financial Inclusion Working Paper, (Oct 2017)

<https://www.cgap.org/sites/default/files/Working-Paper-Regulatory-Sandboxes-Oct-2017.pdf> at 2.

<sup>149</sup> *Supra* note 2 at page 7.

<sup>150</sup> *Ibid.*

<sup>151</sup> Hans Tjio, Wai Yee Wan & Kwok Hon Yee, *Principles and Practice of Securities Regulations in Singapore*, 3<sup>rd</sup> ed (Singapore: LexisNexis, 2017) at 160-161 and 164 (the authors consider that regulators must not merely have powers of enforcement, but that it is crucial that regulators be given the power of interpretation; however, MAS does not generally have this power of interpretation, except in the context of the securities market pursuant to section 321 of the SFA; another notable

where there is uncertainty as to whether a new financial product service or process complies with existing legal and regulatory requirements, financial institutions (amongst others) are deterred from pursuing innovation.<sup>152</sup> In Singapore's case, the operation of a regulatory sandbox, which allows MAS flexibility to, among other things, test the functioning of regulations, is important to facilitating innovation. Given Singapore's unique circumstances, it must be borne in mind that establishing sandboxes may not always be the ideal or optimal option, since the success of taking this step depends on the country's specific circumstances.

### **(a) Challenges from the Social and Economic Makeup**

The current social and economic makeup of Singapore makes it challenging for the development of FinTech innovations. Singapore's economy is strongly reliant on human capital, but there has been a dearth of tech entrepreneurs and professionals. Top talents gravitate towards and bring their investments and expertise to global technology innovation centers like Silicon Valley instead of Singapore.<sup>153</sup> Many of the brightest local minds do not consider entrepreneurship as a desirable route especially due to the stability enjoyed in Singapore's employment market and the unwillingness to endure the overtime work associated with startup businesses.<sup>154</sup> For foreign talents, the strict quota for employment of foreign skilled labour makes any human-intensive business highly costly.<sup>155</sup> This is aptly illustrated by the stringent requirements that have to be fulfilled before an Employment Pass is issued: a foreign professional needs to earn at least \$3,600 as a fixed monthly salary, have good qualifications and work in a managerial, executive or specialised job.<sup>156</sup> Also, a foreign professional needs to earn a minimum fixed monthly salary of \$6,000 in order to apply for a Dependent's Pass for their family.<sup>157</sup> These factors may be a deterrent to aspiring FinTech talents and entrepreneurs, local or foreign, choosing Singapore as their home base. In order to address this issue, Singapore government has recently launched a pilot scheme to help tech startups in applying employment passes for their foreign talent under more flexible requirements.<sup>158</sup> Accommodating the mobility of foreign talent through simple and flexible

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exception is section 337(1) of the SFA, which grants MAS "the general power to exempt any or class of person, capital markets product, matter or transaction from all or any of the provisions of the Act").

<sup>152</sup> MAS, "Consultation Paper on FinTech Regulatory Sandbox Guidelines" (6 June 2016) Monetary Authority of Singapore Consultation Paper No P005-2016 at para 1.4, online: < <https://www.mas.gov.sg/-/media/MAS/News-and-Publications/Consultation-Papers/Consultation-Paper-on-FinTech-Regulatory-Sandbox-Guidelines.pdf>>.

<sup>153</sup> In fact, many locals gravitate overseas to Silicon Valley as well: Nirmal Ghosh, "Singaporeans in Silicon Valley urged to consider growing opportunities at home" (20 April 2019), online: <<https://www.straitstimes.com/world/united-states/singaporeans-in-silicon-valley-urged-to-consider-growing-opportunities-at-home>>.

<sup>154</sup> Interview with the founder of a FinTech startup based in Singapore, Mr Andy Li, 18 August 2018; Interview with the founder and CEO of CXA, a FinTech startup based in Singapore, Ms. Rosaline Chow Koo, 17 May 2019. (Both entrepreneurs opined that the operation costs of running a FinTech startup in Singapore is much higher than that in China, especially in terms of the costs in hiring talented technician).

<sup>155</sup> See, for example, quota for the number of Work Permits issued to foreign workers: see Ministry of Manpower, "Services sector: Work Permit requirements", online: <<https://www.mom.gov.sg/passes-and-permits/work-permit-for-foreign-worker/sector-specific-rules/services-sector-requirements>>.

<sup>156</sup> Ministry of Manpower, "Eligibility for Employment Pass", online: <<https://www.mom.gov.sg/passes-and-permits/employment-pass/eligibility>>.

<sup>157</sup> Ministry of Manpower, "Eligibility for Dependent Pass", online: <<https://www.mom.gov.sg/passes-and-permits/dependants-pass/eligibility>>.

<sup>158</sup> Hariz, Baharudin, "Pilot scheme to facilitate hiring of foreign talent in tech firms" Straits Times, (31 July 2019) <https://www.straitstimes.com/tech/pilot-scheme-to-facilitate-hiring-of-foreign-talent-in-tech-firms>



immigration policies and programmes will allow regulators to further promote the sector and ensure that the right skills are available.<sup>159</sup>

Moreover, a current lack of exit options for venture capital (“VC”) funds may limit the amount of funding available, creating a real obstacle to the development of the FinTech industry. As VC funds have a limited life span, successful exits are critical to venture capitalists in ensuring attractive returns to the investors, and in turn securing subsequent capital from investors for future VC funds. Among the various exit options, IPOs serve as one of the most crucial VC exit vehicles.<sup>160</sup> However, IPOs do not seem to be an attractive exit for VC funds that have invested in FinTech startups in Singapore. There were only 11 IPOs by Southeast Asian tech startups between 2005 and 2015;<sup>161</sup> of these, none involved a listing on SGX.<sup>162</sup> On the other hand, the region saw 127 tech acquisitions over the same period.<sup>163</sup> This suggests that an exit on SGX is currently an unpopular option.<sup>164</sup> Arguably, policy reform can be carried out in order to render IPOs for VC-backed companies on the SGX a more attractive prospect. Such reforms to improve the exit environment will increase the level of VC investment activity in Singapore<sup>165</sup> and increase the supply of funds available to fledging FinTech firms.

While SGX recently approved rules surrounding dual-class share (DCS) structures in 2018, allowing companies with such share structures to seek primary listing on its mainboard with immediate effect, Singapore only allows the DCS structure on the Mainboard, but not the Catalist board, which is targeted at younger companies with growth potential that do not yet meet the Mainboard’s stringent listing requirements. It is thus recommended that the DCS structure be introduced for the Catalist board in order to increase its attractiveness to VC-backed FinTech companies.<sup>166</sup>

Further, the fact that many existing FinTech giants, such as Alibaba and Tencent, have been testing their waters in Singapore, intensifies competition in an already small market. Laudable efforts have been made by Singapore to address the difficulties posed by its unique social and economic features, but it may take years before the effects of such policies are felt. In response to the difficulties highlighted above, more public consultations and focus group discussion with regard to novel issues should be encouraged.

## 5. CONCLUSION

The promise of FinTech is a financial sector with its backbone in technology and innovation. With interest and investment in FinTech growing exponentially worldwide, regulators will

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<sup>159</sup> Ernst & Young, ‘ASEAN FinTech Census 2018’ (2018) at page 30, online: <[https://www.ey.com/Publication/vwLUAssets/EY-asean-fintech-census-2018/\\$FILE/EY-asean-fintech-census-2018.pdf](https://www.ey.com/Publication/vwLUAssets/EY-asean-fintech-census-2018/$FILE/EY-asean-fintech-census-2018.pdf)>.

<sup>160</sup> Lin Lin, “Venture Capital in Singapore: The Way Forward”, (2019) 5 Journal of Business Law 363 at 381.

<sup>161</sup> *Ibid.*

<sup>162</sup> *Ibid.*

<sup>163</sup> Golden Gate Ventures, “The Bamboo Report” (2016) at 9.

<sup>164</sup> Golden Gate Ventures, “Southeast Asia Offers Big Exits (Just not through IPOs)”, *Golden Gate Ventures* (10 November, 2016), online: <<http://goldengate.vc/news/southeast-asia-offers-big-exits-just-not-ipos/>>; See also Marissa Lee, “Listing turf wars: Can SGX do more?”, *The Straits Times* (5 June 2017), online: <<https://www.straitstimes.com/business/listing-turf-wars-can-sgx-do-more>>.

<sup>165</sup> *Supra* note 160.

<sup>166</sup> *Ibid.*

have to consider the interplay between innovation, new risks, and the current regulatory landscape.

In seeking to grow a robust FinTech sector, a number of elements need to be simultaneously maintained and integrated effectively. These are: (1) infrastructure to support innovation, such as innovation offices and regulatory sandboxes, (2) entrepreneurs who are willing to set up start-ups and employees willing to work in those start-ups, (3) venture capitalists who can add value to the start-ups, and (4) an ecosystem where there is sufficient venture funding and a healthy exit environment.

However, regulators must also mitigate the new risks brought by the development of FinTech and to achieve the regulatory objectives of financial stability, integrity and consumer protection. The case study of Singapore shows that these can be achieved through: (1) statutory reforms and rule-making, issuing regulatory guidelines to provide greater regulatory clarity; and (2) issuing regulatory warnings and strengthening enforcement actions to mitigate the risks of new technological applications.

However, to further cement its place as the leading FinTech market in Asia, Singapore should note that rules cannot but be applied sub-optimally by those unversed in the nuances of FinTech. Regulatory bodies have to tap into technological expertise in order to be effective in the regulations that they promulgate and implement.<sup>167</sup> More substantive efforts need to be made to encourage young entrepreneurs and investors to take risks in this new and rapidly evolving sector,<sup>168</sup> to attract skilled workers to enter the startup industry.<sup>169</sup> As the FinTech and venture capital market is relatively young, venture capitalists and entrepreneurs may become more sophisticated given time. Keeping all this in mind would put Singapore in better stead to realise the promise of FinTech.

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<sup>167</sup> *Supra* note 149.

<sup>168</sup> *Supra* note 160.

<sup>169</sup> *Supra* note 154.