Report Excerpt: Regulatory Sandboxes

Drawn from: "Enabling Agile Assurance of Drones in Queensland Project Milestone 4: Other Regulatory Sandbox Design Case Studies" by Cameron Downey, Dan Hunter and Kieran Tranter, Queensland University of Technology, for Trusted Autonomous Systems, 9 June 2021.

Background

This report focusses on six emergent regulatory innovations. Three are examples of 'regtech', which is not the focus of this excerpt. The three other examples are of regulatory sandboxes in finance, telecommunication and urban transport. Sandboxes are a general regulatory approach that allow limited deployment and commercialisation of a complex emerging technology without requiring full compliance with existing regulation. The advantage of regulatory sandboxes is that they provide a less restrictive regulatory zone to encourage innovation and development while still ensuring regulatory outcomes. The examples in the report are from Australia, Thailand, Japan and Singapore.

The key findings of this report relevant to regulatory sandboxes are:

- Sandboxes are now a well-developed regulatory structure that can allow for the cheaper and faster development of innovative products that otherwise would have faced high regulatory compliance costs.
- Sandboxes, common in relation to fintech, are being used by regulators in other contexts such as telecommunications and transport.
- Sandboxes do not create zones of no regulation. Rather a sandbox is a specific site for different regulations. A state regulator usually remains responsible for the design, admission and compliance checking of a sandbox. The remaining role of the regulator and the bass of the sandbox in law is shown in The Australian Enhanced Regulatory Sandbox.
- Sandboxes have been used to encourage innovation and trialling in other sectors including telecommunications (Thailand) and transport (Japan and Singapore).

Regulatory Sandboxes

Regulatory sandboxes are an umbrella form of regulatory structure that enable piloting or testing of services or products, that would otherwise be unable to operate under existing rules, or at risk of regulatory penalty.[1] Typically employed by regulators to promote innovation in a specific industry or sector, sandboxes are designed to attract innovators by offering an environment where they can trial new products with actual consumers, reduced regulatory constraints and receive continual guidance from state regulators.[2]

The first regulatory sandbox was established by the FCA in 2016[3] to 'deliver innovation in the ... financial services market.'[4] It has been credited with making London a leading fintech incubator.[5]

[1] Hilary J Allen, "Regulatory Sandboxes," *George Washington Law Review* 87, no. 3 (2019).
[2] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation.".
[3].Deloitte, *A Journey through The FCA Regulatory Sandbox: The Benefits, Challenges, and Next Step*, Centre for Regulatory Strategy (2018), https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/financial-services/deloitte-uk-fca-regulatory-sandbox-project-innovate-finance-journey.pdf.
[4] '"Regulatory Sandboxes," (Web Page), updated 6 January 2021, 2015, accessed 5 June, 2021, https://www.fca.org.uk/firms/innovation/regulatory-sandbox.
[5] Allen, "Regulatory Sandboxes.", 580.

Fintech sandboxes have since been established in over 20 countries[6] including Australia, Canada, Denmark, Switzerland, and Mauritius.[7]

Described as a form of 'structured experimentalism'[8] sandboxes are formal and defined mechanisms.[9] Their formality results from the need to strike a balance between guaranteeing consumer protections and promoting innovation. With consumer safeguards varying by jurisdiction, there is accordingly no standardised or one-size-fits-all formula for creating a sandbox, and their structure and scope can differ greatly even within jurisdictions.[10] However, at their core, sandboxes tend to share common features and objectives.

Dirk Zetzsche and others[11] identified in the fintech context that regulators usually consider four criteria when establishing a regulatory sandbox:

1. **Entry Test** – the legal preconditions that must be satisfied for an innovator to 'play in the sandbox.' The test generally examines whether a product or service is a 'genuine innovation' and benefits consumers.[12]

2. **Scope** – what sector the sandbox is limited to and what institutions have access; whether existing entities can access the sandbox; which customers are allowed to participate; and the time and size of the sandbox.[13] In practice, while some national sandboxes impose no limits, others restrict access to authorised institutions working independently or in partnership with fintech firms, or limit access to their central bank or securities and investment commission.[14]

3. **Mandatory provisions waiver –** what mandatory provisions or rules, such as licensing fees and requirements, leadership requirements, credit rating, may be lifted under the sandbox.[15]

4. **Grounds to remove the privilege** – the rules that determine whether a participant or its product or service should be withdrawn from the sandbox.[16]

Sandboxes can therefore be identified by three core attributes. First sandboxes are not a surrendering of regulatory power. They are not spaces of no regulation, rather they are highly regulated and structured, although differently from established, orthodox regulatory forms. Foremost, sandboxes are established and maintained by a regulator that oversees the admission of applicants to the sandbox. Participants must often meet stringent eligibility requirements (the entry test), and their actions are continually monitored and evaluated to ensure consumer protections are guaranteed. The regulator

[6]United Nations Secretary-General's Special Advocate for Inclusive Finance for Development and Cambridge Centre for Alternative Finance, *Early Lessons on Regulatory Innovations to Enable Inclusive FinTech: Innovation Offces, Regulatory Sandboxes, and RegTech*, Offce of the UNSGSA and CCAF (New York, 2019), https://www.unsgsa.org/sites/default/files/resources-files/2020-09/UNSGSA_Report_2019_Final-compressed.pdf.. 26.
[7] Allen, "Regulatory Sandboxes.", 580.
[8] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation.", 31-104, 64-90.
[9] Gabriel Jorge Jiménez and Margaret Hagan, *A Regulatory Sandbox for the Industry of Law* Thomson Reuters Legal Executive Institute (2019), http://www.legalexecutiveinstitute.com/wp-content/uploads/2019/03/Regulatory-Sandbox-for-the-Industry-of-Law.pdf.3.
[10] Jiménez and Hagan, *A Regulatory Sandbox for the Industry of Law* 3.
[11] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation."
[12] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation."69-71.
[13] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation."71-73.
[14] See Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation.". Zetzsche provides a useful comparison between sandboxes in the United Kingdom, Hong Kong and Thailand.
[15] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation."76-77.
[16] Zetzsche et al., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation."77.

establishes the dimensions and scale of the sandbox (scope) and determines whether an admitted participant should be removed from the sandbox (grounds to remove the privilege). Second, sandboxes involve the suspension, relaxation, or exemption from the existing regulatory ecosystem to allow the trialling and testing of a new product or service (mandatory provisions waiver). These are usually directed towards decreasing the regulatory cost and liability risk of participants. However, often participants will still need to confirm to a basic set of rules. Third, the sandbox is open, in some form, to the public allowing participants to test products and services with consumers. The role of the regulator as gatekeeper of the sandbox might limit consumer access to specific categories of consumer.

Three sandboxes are considered in this report. The first is the Australian Enhanced Regulatory Sandbox (ERS). The ERS is considered as it is a good example of a contemporary 'second generation' sandbox for fintech products. The second is the 5G sandbox which expands the sandbox idea from beyond the financial products and services space to the telecommunication sector. The third are the mobility as a service (MaaS) sandboxes in Japan and Singapore that further expand the deployment of the sandbox ideas to transport systems and services.

Australia: Enhanced Regulatory Sandbox

In September 2020 Australia introduced the ERS. The ERS allows the testing of innovative financial services or credit activities without first obtaining an Australian financial or credit services licence.[17] The administering agency is the Australian Securities and Investment Commission (ASIC). The ERS replaces the earlier Fintech Regulatory Sandbox that was established in December 2016.

The objective of the Australian Government by introducing the ERS is to enable Fintech and other firms to achieve 'innovative services and products to market faster and at lower cost, while still providing for important consumer outcomes such as dispute resolution and consumer compensation arrangements.'[18] The ERS is formally established by the *Corporations (FinTech Sandbox Australian Financial Services Licence Exemption) Regulations 2020* (Cth) and the *National Consumer Credit Protection (FinTech Sandbox Australian Credit Licence Exemption) Regulations 2020* (Cth).

The previous Fintech Regulatory Sandbox enabled fintech companies to test products and services for up to 12 months without the requisite licence.[19] Australian businesses and locally registered foreign companies were eligible to use the sandbox and had to notify ASIC prior to testing their product.[20]

[17] "Enhanced Regulatory Sandbox," (Web Page), accessed 3 June, 2021, https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox.

[18] Financial Services and Financial Technology ssistant Minister for Superannuation, and Parliamentary Secretary to the Treasurer;, Explanatory Statement: Issued by authority of the Assistant Minister for Superannuation, Financial Services and Financial Technology, and Parliamentary Secretary to the Treasurer; Corporations Act 2001; National Consumer Credit Protection Act 2009; Corporations (FinTech Sandbox Australian Financial Services Licence Exemption) Regulations 2020; National Consumer Credit Protection (FinTech Sandbox Australian Credit Licence; Exemption) Regulations 2020 (Canberra, 2020), https://www.legislation.gov.au/Details/F2020L00632/5c3b89fd-4., 1.

[19] Australlian Securities and Investiment Commission, *Comparison of Key Features of the ASIC Sandbox and the Australian Government's Enhanced Regulatory Sandbox*, Australlian Securities and Investiment Commission., (2020), https://download.asic.gov.au/media/5763135/comparison-asic-sandbox-enhanced-regulatory-sandbox-published-25-august-2020.pdf.

[20] Australlian Securities and Investiment Commission, *Comparison of Key Features of the ASIC Sandbox and the Australian Government's Enhanced Regulatory Sandbox*..

However, applicants could only use the sandbox once, and could not rely on the licensing exemption if they had acted poorly or had engaged in misconduct.[21]

A key feature of the new ERS is that entities can test a broader range of products for up to 24 months.[22] Eligibility has also expanded to include existing licensed entities wanting to test new services they are currently not authorised provide, and entities can use the sandbox multiple times provided they are testing different products each time.[23] The regulations place a financial upper limit of a $10,000 for a single consumer and an aggregate $5 million total exposure limit for all financial and credit services provided.[24] ASIC remains the gatekeeper of entry to the sandbox. Entities applying for entry must satisfy two tests. The first is the 'net public benefit test' where entering entities must argue that benefits from exempting the product from licensing requirements will outweigh any detriments to the public, what problem the product address to consumers in Australia, how it will benefit consumers (such as reduce cost, improve efficiency, provides provide a better user experience and increases consumer choice), risks involved and how they will be managed.[25] The second test is the 'innovation test' detailing how the product is either new or an improvement of an existing product, what makes it distinct from existing products available in Australia, and what comparable products (if any) are currently available in Australia.[26]

Having gained entry to the ERS, participants are still subject to a range of regulations and requirements. Participants must provide potential clients with a highly prescribed product disclosure notice, notify clients and ASIC when a particular event occurs (such as when a participant materially changes its offering), provide a dispute resolution process and maintain an adequate compensation fund.[27]

As at 19 May 2021 the ERS has five participants.[28] The first participant offers clients a suite of ethical and Shariah-compliant equity investment models orientated on the NYSE that they can select via their website and app. The second participant offers a digital wallet to consumers. Users of the wallet have access to digital payment and remittance services. The third participant provides software combined with behavioural analytics to produce better cashflow outcomes for customers and businesses. Using their product, customers can set up payment plans and make flexible payments towards bills. The participant is authorised to issue, vary, or dispose of non-cash payment facilities. The fourth participant proposes to provide zero touch payments service between clients via a mobile app by QR Code or mobile phone number. The final participant proposes to provide a single hub for personal investment, saving, payments, budgeting / analytics, digital wallet, currency transfers and borrowing.[29]

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[21] Australian Securities and Investiment Commission, *Comparison of Key Features of the ASIC Sandbox and the Australian Government's Enhanced Regulatory Sandbox*.
[22] Australian Securities and Investiment Commission, *Comparison of Key Features of the ASIC Sandbox and the Australian Government's Enhanced Regulatory Sandbox*.
[23] Australian Securities and Investiment Commission, *Comparison of Key Features of the ASIC Sandbox and the Australian Government's Enhanced Regulatory Sandbox*.
[24] *Corporations (FinTech Sandbox Australian Financial Services Licence Exemption) Regulations 2020* (Cth) s 13; *National Consumer Credit Protection (FinTech Sandbox Australian Credit Licence Exemption) Regulations 2020* (Cth) s 10.
[25] "INFO 248 Enhanced regulatory sandbox," (Web Page), 2020, accessed 27 May, 2021, https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox.
[26] Australian Securities and Investment Commisson, "INFO 248 Enhanced regulatory sandbox."
[27] Australian Securities and Investment Commisson, "INFO 248 Enhanced regulatory sandbox."
[28] "Enhanced Regulatory Sandbox Exemption Users," (Web Page), accessed 26 May, 2021, https://asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox/enhanced-regulatory-sandbox-exemption-users/.
[29] Australian Securities and Investment Commisson, "Enhanced Regulatory Sandbox Exemption Users."

The ERS represents a maturing of sandbox architecture in the fintech space. Based within delegated legislation, it provides a delineated and controlled space for trialling and testing. While exempt from the full requirements of Australian financial services and credit provider regulation, participants remain subject to close ASIC oversight and detailed entry and reporting requirements.

Thailand National Broadcasting and Telecommunications Commission) 5G Sandbox

In August 2019 National Broadcasting and Telecommunications Commission (NBTC) announced a sandbox for 5G innovators. Utilising the low range of 5G, five defined geographic areas within Chiang Mai, Khon Kaen, Bangkok, the Eastern Economic Corridor (EEC) and Songkhla were demarked for 5G sandbox participants.[30] The sandbox was limited to research and development and trialling of 5G applications. Commercialisation was prohibited. Licences were granted for 360 days with an option of a further 360 days renewal.[31] The conditions on participants seem quite minimal, maintenance of appropriate cybersecurity and data protection measures and 3 month reporting to the NTBC. The minimal content of the conditons possibly reflected that the sandbox did not allow for direct engagement with consumers.[32]

There is limited available assessment of the uptake and effectiveness of the NTBC 5G sandbox beyond some anecdotal claims of automated 5G based orderly beds being developed and trialled in Thailand.[33] The Thai 5G sandbox at least in concept demonstrates the applicability of some forms of a sandbox regulatory architecture applied to complex digital applications beyond fintech. However, it is arguably not a 'true' sandbox. Central to the fintech sandboxes such as the ERA is trial and testing through structured engagement with consumers in the market. The Thai 5G allowed testing in real world environments and infrastructure but not commercial interactions.

Japan and Singapore Mobility as a Service Sandboxes

One area where several Asian nations have established regulatory sandboxes is to encourage development and deployment of mobility as a service (MaaS) systems. Unlike the Thai 5G sandbox which was limited to trial and testing, these allow MaaS operators lower entry criteria to providing trial services. The barriers to MaaS are twofold. The first relates to the ambiguity of hybrid personal mobility devices (e-bikes, e-scooters) as a vehicle under traffic regulations and whether they should share dedicated peddle and pedestrian areas. The second relates to the physical infrastructure required for MaaS.[34]

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[30] Office of the NTBC, *5G Preparation in Thaliand*, NTBC, (Bang, 2019), https://www.itu.int/en/ITU-D/Regional-Presence/AsiaPacific/SiteAssets/Pages/Events/2019/RRITP2019/ASP/Thailand%205G%20preparation.pdf.

[31] "The Ministry of Economy, Trade and Industry (METI) newly approved four demonstration plans under the Regulatory Sandbox Scheme.," (Web Page), https://www.meti.go.jp/english/press/2019/1017_002.html. "Thailand's NBTC Introduces Regulatory Sandbox," 2019, accessed 18 May, 2021, https://www.bakermckenzie.com/en/insight/publications/2019/09/thailands-nbtc-introduces-regulatory-sandbox.[32]

[33] "Global 5G Success Stories: Thailand to Be a Model in 5G-Enabled Smart Healthcare," CIO (Web Page), 2021, https://www.cio.com/article/3614613/global-5g-success-stories-thailand-to-be-a-model-in-5g-enabled-smart-healthcare.html.

[34] Zhanhe Ryan Jin and Anna Zhi Qiu, "Mobility-as-a-Service (MaaS) Testbed as an Integrated Approach for New Mobility-A Living Lab Case Study in Singapore" (paper presented at the International Conference on Human-Computer Interaction, HCI in Mobility, Transport, and Automotive Systems. HCII 2019. Lecture Notes in Computer Science, 2019); Göran Smith and David A Hensher, "Towards a Framework for Mobility-as-s-Service Policies," *Transport Policy* 89 (2020), https://doi.org/https://doi.org/10.1016/j.tranpol.2020.02.004.

In Japan MaaS were an early focus of the umbrella regulatory sandbox regime[35], the 'Demonstration Scheme for New Technologies' that was established in 2018.[36] Several e-bike manufactures, hire providers and city council have partnered to run trials under the sandbox permission.[37] The data generated by the trials has led to reforms to national and local traffic ordinances to facilitate MaaS providers in Japanese cities.[38]

The Japanese approach of using a sandbox to encourage trialling and introduction of MaaS has been followed by other Asian nations but with mixed results. In Singapore the Land Transport Authority established a dedicated sandbox for hire e-bike operators in 2019.[39] However, it seems that it has not be successful with several sandbox licences returned.[40] The reasons for the return appear to relate to the narrow parameters of the dedicated sandbox on e-bikes with the operators wanting to pivot to e-scooters.[41] There are two ways to view this. First the sandbox environment was successful for the operators to develop and refine their systems and determine an alternative MaaS model. Second, the Land Transport Authority's sandbox was conceived too narrowly and was not sufficiently flexible to allow developments over the duration of the licence.

Conclusion

Regulatory Sandboxes present an important opportunity for regulatory development and innovation in fields experiencing rapid change via technology development. This report considered three examples in finance, telecommunication and urban transport. The advantages identified included that Sandboxes allow limited deployment and commercialisation of a complex emerging technology without requiring full compliance with existing regulation. Sandboxes are able to provide a less restrictive regulatory zone to encourage innovation and development while still ensuring regulatory outcomes.

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[35] Ministry of Economy, "The Ministry of Economy, Trade and Industry (METI) newly approved four demonstration plans under the Regulatory Sandbox Scheme.."

[36] "Act on Special Measures for Productivity Improvement Enforced," (Web Page), https://www.meti.go.jp/english/press/2018/0606_001.html#:~:text=The%20Act%20is%20to%20take,the%20productivity%20of%20local%20businesses.

[37] ' How the Japanese Government's New "Sandbox" Program Is Testing Innovations in Mobility and Technology', *Harvard Business Review* (Web Page, 11/02/2020) https://hbr.org/sponsored/2020/02/how-the-japanese-governments-new-sandbox-program-is-testing-innovations-in-mobility-and-technology.

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[40] "E-Scooter Sharing Firm 'Lime' To Withdraw Application For Sandbox Licence With LTA," (Web Page), 2019, https://vulcanpost.com/670545/lime-escooter-license-singapore/.

[41] "GrabCycle gives up sandbox licence for bike-sharing services," Channel News Asia (Web Page), 2019, https://www.channelnewsasia.com/news/singapore/grabcycle-gives-up-sandbox-licence-for-bike-sharing-services-11087320.

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