Report on the IPS Workshop on Using Regulatory Sandboxes for an Innovation-Led Economy

By R Avinash

Introduction

On 18 November 2021, the Institute of Policy Studies (IPS) hosted a workshop on "Using Regulatory Sandboxes for an Innovation-Led Economy".

The aim of the workshop was to foster dialogue between various public and private sector stakeholders regarding regulatory sandboxes. Specifically, the conversation revolved around the need to balance regulation with the desire to stay at the forefront of innovation and digitalisation.

It featured presentations from the following panellists:

- Mr Frank Phuan, CEO and Executive Director, Sunseap Group Pte Ltd
- Mr Ken Chua, Deputy Director, FinTech Infrastructure Office, FinTech and Innovation Group, Monetary Authority of Singapore
- Mr Jayaprakash Jagateesan, Chief Executive Officer, RHT AlDigi Financial Holdings Pte Ltd
- Ms Yean Cheong, Executive Director, SGTech

The workshop was convened by IPS Senior Research Fellow Dr Faizal Yahya and chaired by Mr Victor Tay, Chief Executive Officer of Global Catalyst Advisory and a member of the Governing Council of the China-ASEAN Business Alliance at the Singapore Digital Chamber of Commerce.

Chairperson: What Lies Ahead, What Must Be Done

Chairperson Mr Victor Tay described how Singapore was moving towards an innovation-based economy. However, instead of celebrating the creativity of first-of-its-kind technologies, Singapore businesses seem to be restrained by regulatory hurdles even when they are absent.

Mr Tay cited the case of a serial entrepreneur for pioneering technology in drone taxis. The entrepreneur had spent a few years dealing with multiple government agencies here when the regulation was yet to be formulated — before ended up experimenting in Nevada in the United States. Either in the presence of existing stringent regulation — which results in much compliance endeavour or business restriction — or in the absence of regulations, pioneers are being slowed down as they await government officials to figure out if their activities are permitted.

In this sense, how would Singapore move towards its goal especially as it transits towards an innovation-based economy?

Mr Tay pointed to a bright spark in the fintech industry: the Monetary Authority of Singapore (MAS) as the central bank erected a sandbox in 2014 for innovative businesses to continue their activities with monitoring. As a consequence, Singapore was able to accelerate the fintech industry to emerge as the top five fintech cities in the world in the 2021 Global Fintech rankings. This may be an effective model for eventual and future innovations and pioneers, he said.

Mr Tay stressed that Singapore should be anchored in innovation-based growth, especially with the rapid digitalisation and evolution of disruptive business models. It has always relied on the export-oriented model where the focus is on manufacturing-related services, skills-centric output, and technical expertise. Knowledge underpins Singapore's economic model. Going forward, however, there should be a greater reliance on future-economy growth. Furthermore, the city-state is facing immense global and technological changes and challenges. There is a need for a balancing act of pioneering innovation with regulation. While regulation is a necessary evil, there should be awareness on how Singapore balances them to guide rather than impede innovation. The Future Economy Plan as outlined by the Ministry of Trade & Industry (MTI) looks at making Singapore a key player in the global digital economy.

In 2020, $19 billion was poured into research, innovation and enterprises. However, Singapore remains keenly aware of its existing challenges — population decline, rising inequality, and competitiveness. Hence, $3.2 billion has been poured into advanced manufacturing and engineering; $4.0 billion into health and biomedical services; $0.9 billion into urban solutions and sustainability; and $0.4 billion into services and the digital economy. These investments are being made to offset the demographic, societal and global challenges that may impede Singapore's future growth.

In terms of Singapore's ranking in innovation, the World Economic Forum (WEF) has placed the city-state in the top 20 for capacity in innovation. In terms of university-industry collaboration, Singapore is ranked number eight. The WEF's commentary on Singapore highlights the latter's emphasis on the same favoured growth sectors, continued commitment to retaining a large manufacturing base, and no change to economic openness. Singapore continues to focus on scaling up and internationalisation. Tax reforms are certainly on the agenda as well.

Mr Tay posed a series of polarised and pertinent questions:

- How does Singapore balance regulations while preserving the ability and speed to innovate?
- How do we permit creative business models while still ensuring consumers are safeguarded?
- What are the balancing market forces, multiple regulators, and considerations that come into play?

In this vein, the demands and implications of regulatory sandboxes may be a useful mechanism for exploration across all industry sectors. This requires a balance between firms, regulatory authorities, markets and consumers. A final point was stated in the context of over-regulation, which can result in market instability. The shadow banking sector, for instance, has been observed as a consequence of a tight-fisted regulatory regime. Some of the regulations strangle innovation, which result in enterprises existing in distorted forms.

In light of these issues, regulatory sandboxes allow most innovation to continue with the application, preparation, testing, and evaluation of new technologies under the regulator's monitoring. This does not impede some players or enterprises, and prevents them from being stuck in the process as they await regulatory approval.

Mr Tay cited fintech as a nascent and highly regulated sector; but MAS has applied the sandbox approach to enable innovation and develop Singapore into a global fintech hub. Mr Tay prompted the forum to discuss if sandboxes could be applied beyond financial industry to help pre-empt regulatory hurdles to catalyse an innovation-led economy. Some of questions he posed were:

- What are the challenges and impediments to innovation in Singapore?
- Are its ecosystems and regulations suitable for innovation?
- What approach will accelerate market or industry policies to adopt innovation?
- Can the other sectors such as the environmental, healthcare and transport industries follow suit?
- What are the lessons and distilling points from industry and enterprise case studies?

Panellists: Regulatory Sandboxes and Insights From Two Sectors

Speaking under Chatham House Rules, the panellists shared insights from various industry domains. These included the energy and fintech sectors and government statutory boards.

Regulatory sandboxes facilitate live experimentation. They also serve four key functions. The first establishes the channel that engages enterprising firms in innovative ideas. This includes informing firms about what is required, regulation-wise. The second relaxes specific regulatory requirements although certain things like money-laundering regulations will not be relaxed. The third conducts live experiments within boundaries. The fourth ensures a level playing field upon exit. In this case, successful enterprises must be able to fully comply with government regulations.

A set of criteria are used to evaluate sandbox applications to strike a balance between allowing innovation to be tested in the market versus ensuring that any failures from the experiments will be well-contained. This includes the use of technology in a fresh way that brings benefits to consumers or industry.

Ultimately, a successful enterprise has solutions that help address existing problems and can be deployed in Singapore on a broader scale. To achieve this, there needs to be an agreement on what needs to be tested, indicators that can be tested, clearly-defined test scenarios and expected outcomes, carefully demarcated boundary conditions, significant risks assessed and mitigated, and a well-defined exit and transition strategy.

Due to the rapid pace of development across various sectors, regulations may impede Singapore's desire to be an innovation hub.

For instance, in terms of standards for EVs (electric vehicles) chargers, Singapore stipulates that certain components need to be included. The scarcity of approved global EV manufacturers means that few chargers can actually make the cut.

Other examples relate to financial regulation. Singapore has strict limits on financing models for government contracts. Looking to solutions in project financing of sustainability projects, an overseas example is a company in Japan that has designed an app that allows investors to invest in Japan-based solar projects by buying units of that project and gaining returns. It is interesting to note that Japan is a regulated market like Singapore. The Japanese company is also looking at regional power grids, G2G, and cross-border projects.

For fintech, the Singapore government has been running regulatory sandboxes and has engaged more than 200 companies to provide clarifications on regulatory requirements. There have been 100 sandbox applications to date — reflecting the growth of start-ups. In terms of innovation and technology, there are interesting technologies emerging in blockchain, machine learning, AI, and APIs.

In addition, to harness technology by powering green finance, the government ran an Industry-Application Mentorship Scheme in 2021 whereby start-ups were paired with corporate champions and Singapore-based financial institutions through the application process for short-listed finalists.

The sandbox framework turned out to be very useful for first-movers and fully customisable for any regulated activity. It included pre-defined environments for low-risk activities and fast-tracked approvals, with pre-consultation with MAS.

However, there have also been challenges coordinating with tax authorities for new innovative concepts and models/infrastructure income from digital assets. Here, a national AI programme to improve public sector service delivery and understand pain points could be the answer. There could also be an expansion of eligibility criteria to include early adopters of technology innovation, streamlined application with financial grants for first-movers of technology innovation, and the participation of eligible applicants.

A specific case study relating to taxation was shared. A proposed amendment to the property tax in 2017 would have taxed machinery used for the provision of the setting/controlled environment whether for human habituation or otherwise. This would have badly affected data centres, which typically have leases that are locked in between five and 10 years. The one-year notice from the tax authorities did not allow operators to prepare to cushion the financial impact.

After some government-led industry engagement with IRAS (Inland Revenue Authority of Singapore) to clarify matters regarding data centre businesses, the proposed amendment was detached. This episode could have been avoided if there was a test/feedback mechanism in place. It also highlights the potential of sandboxes.

Discussion: Intra-Agency Cooperation, Start-Up Funding, and Regulation Culture

During the discussion, speakers and participants described ways in which greater collaboration between the government and enterprises could be fostered such that regulations are understood better. This would help SMEs and start-ups overcome regulatory hurdles so that they may launch their projects successfully. Ultimately, an important goal is to ensure that regulations do not get in the way of innovation; rather, they ought to run alongside technological development and expedite the process.

Would lead ministries take charge in order to help businesses that fell through the cracks? Or does it need to be a multi-stakeholder conversation?

The government itself is in a very natural position to do that as it represents a collective. It is a self-moderating platform that collates different opinions. Ultimately, this involves understanding the agency that is addressing this. It is also about manpower, livelihood, and taking a greater view. This business model emerged as a result of a particular ecosystem. COVID-19 has changed business rules and businesses.

There were differing views as to whether a “lead” agency was needed. When it came to digital tokens and the regulation of cryptocurrencies, emerging technologies needed regulating, as there were no clear guidelines regarding their usage. Here it would be good to have a multi-party roundtable discussion to work through the challenges and kinks.

A past example of such multi-party discussions can be seen in Duck Tours and leisure helicopter services to fly to Sentosa and the economic triangle of Johor, Bintan, Batam and Karimun. In these instances, issues arose around agency responsibility instead of a whole-of-government approach. The Duck Tours business, though supported by the Singapore Tourism Board, found difficulty gaining approval from LTA and MPA (Maritime Port Authority of Singapore) as the amphibian vehicle does not fall neatly into the definition of the agency’s purview. For the helicopter services, owing to their flight paths, they had to consult other authorities like Singapore Customs, MINDEF, Changi Prison and the Singapore Police Force. The regulatory hurdles that such entrepreneurs faced drove home the need for intra-agency collaboration.

Furthermore, there was an acknowledgement that issues often cut across different agencies and it was hard to gain a consensus. Each agency understood its own regulations best. That said, the government is seen to be keen on tackling the challenge by liaising with the relevant agencies directly addressing certain regulations.

A question was posed regarding how much of the investment funds set up by government bodies like Temasek Holdings Pte Ltd and EDB would actually go to start-ups. Would the needle move to lead local start-ups to encourage more SGX listings?

As mentioned earlier, $19 billion had been put up by the government — in the RIE (Research, Innovation, and Enterprise) plan. Temasek Funds had also set aside $2 billion in AUM (Assets Under Management) for ventures. These funds catalysed SME equity financing, capital raising and innovations.

A beneficiary of the grants stated that these helped their company a great deal. Statutory boards had grants to support innovators who wished to experiment or launch technology innovations. While the government did not really co-invest in companies, the government supports companies by providing financial grants to SMEs to come forward instead of worrying about technology, business development, money, and a lack of talent.

For instance, the Financial Sector and Technology Innovation Grant has earmarked more than $200 million for a period of three years to support such innovators in different aspects be it proof of concept, establishing an innovation lab, or industry wide infrastructure ability.

Hence, the government's role is one of "connector" for some of its start-up members when it comes to grants. It uses sandboxes to coordinate the interplay between start-ups and SMEs so that the former can grow into the latter. This includes the deployment of funds to ensure that start-ups survive into the next stage. Private sector administration encompasses how best funds can be leveraged and how start-ups can use them.

It was noted that corporates were moving far ahead of regulators in sectors other than finance. Was there something to be examined regarding Singapore's regulation culture?

A suggestion was to have the various players from government agencies, businesses, and individuals talk to one another — going back to the point on multi-stakeholder conversations. This would bring a great deal of clarity to the nature of certain projects. Self-organising committees were suggested for facilitating government agency-private sector cooperation.

Regulations and innovation have to run alongside each other, to prevent a disconnect in terms of the pace of technological development and the need to account for these changes by regulators. Enterprise Singapore also has an appeal committee made up of private sector and business leaders. Grants that are rejected will be filtered to the committee for review. This allows start-ups to get more opportunities to realise their own products and break into the market.

There was acknowledgment that the government was not best placed to understand what was happening at the forefront of industries. Corporate players will always be one step ahead. Hence, it is about playing catch-up.

The quality of projects would rely greatly on the quality of evaluation. The government has industry panel assessments for the grants it puts out. It also gets relevant experts that are familiar with the various institutions and topics at play. There was also a suggestion that the government employ semi-retirees as contractors to evaluate the feasibility of certain projects. This would take the burden off regulators and delegate the task to experienced workers with decades of relevant expertise. It would also help address the separate issue of employment ageism.

Some players were less keen on revealing their IP and innovations to other competitors. Hence, they would rather MAS looked at their innovations entirely rather than open them to a panel examination. For this reason, one of the regulatory sandboxes has its eligibility extended to first-comers rather than just focusing on the first-movers. This means that the criteria have been expanded to include the early adopters of innovation. Through this, a more conducive environment for innovators can be created.

Conclusion

There is a lot of groundwork that needs to be done before a company can engage regulators or institutions. Before any company or start-up begins its journey, it is very important for them to ensure that they have done the necessary research before embarking on this journey.

The government has a multiplier effect by playing the role of facilitator that manages different players and agency engagement. It wants and needs to be a gamechanger. This is even more salient against the backdrop of changes that COVID has brought about.

Recalling the motto of the FinTech & Innovation Group in 2015 — "dream big, start small, and move fast" — it is important for regulators to transform and innovate if they want to develop the industry. The old ways of approvals and applications will hold Singapore back. So far, the government has transformed in a bid to keep pace with this; the creation of new departments to look into current trends and issues is proof of this. Finally, inter-agency collaboration must evolve as the rate of technological development defines issues that cut across agencies and sectors.

R Avinash is a Research Assistant at IPS.

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If you have comments or feedback, please email ips.update@nus.edu.sg

Lee Kuan Yew School of Public Policy
National University of Singapore