Accelerating Innovation through Public Sector Innovation Labs and Vertical Industry Development Models

Susann Roth, Yazeen Bawa Mohamed Asmi , and Arndt Husar

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ACCELERATING INNOVATION THROUGH PUBLIC SECTOR INNOVATION LABS AND VERTICAL INDUSTRY DEVELOPMENT MODELS

Susann Roth, Yazeen Bawa Mohamed Asmi, and Arndt Husar[1]

Key Messages

- A traditional mechanism can take a long time to develop and advance national innovation ecosystems and can be expensive.
- New approaches to innovation in the public sector are needed, including public sector innovation labs.
- Such labs provide a space for public servants to drive innovation in policy making. The labs are "islands of experimentation" within rigid bureaucracies and are agile and lean rather than complex.
- The proliferation of the labs reflects the new emphasis on evidence-based policy making by public agencies and the need to test new technologies in the public sector.
- While there is no one fixed model for the labs—they vary greatly in their governance structures and mandates—what distinguishes them from other forms of government teams or organizations is how they adopt experimental models to tackle social and economic challenges.
- The labs provide a platform to apply innovation tools such as futures strategic thinking and foresight, human-centered design thinking, and innovation challenge design to solve complicated public sector problems.
- The labs allow close collaboration with diverse stakeholders, including civil society, academia, and the private sector.

A.   Background

Many countries are establishing innovation labs or centers to tackle policy and public sector challenges in a new and different way.[2] The proliferation of such labs demonstrates that governments recognize that it is difficult to innovate and drive innovation within existing bureaucratic structures and with public servants' existing skills and capabilities.[3] However, innovation labs are not completely new to the public sector. They can be traced back to the 19th century, when Robert Owen created a lab bringing together cooperatives, schools, and health care providers, and to the 20th century, when Wilbur Philips created the national social laboratory, where he aimed for civic participation in public policy making and public services.[4]

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[2] https://www.nesta.org.uk/feature/innovation-methods/public-and-social-labs/.

[3] Interest in and awareness of the potential value of government innovation is on the rise, signalled, for instance, by it being the central theme in the 2015 Government Summit, and by the creation of an Organisation for Economic Co-operation and Development platform: The Observatory of Public Sector Innovation.

[4] Geoff Mulgan. 2018. *Big Mind: How Collective Intelligence Can Change Our World*. Princeton, NJ: Princeton University Press; and Zaid Hassan. 2014. *The Social Labs Revolution: A new Approach to Solving our Most Complex Challenges*. San Francisco, CA: Berrett-Koehler Publishers, Inc. Hassan analyzes the rise of such platforms, which have developed during the last 2 decades. Despite the great interest they generate, social experimentation and citizen participation are not recent approaches, but are deeply rooted in the beginning of the 20th century.

The labs provide government a space to experiment, develop models, and future-proof them to avoid making shortsighted policies or investments. The labs often aim to mainstream innovation in governance and promote a culture of entrepreneurship and ownership in government, to encourage public servants to experiment.

Innovation labs across the world serve different objectives, depending on the country context and challenges the public sector faces.

Two examples of innovation labs in developing Asia and the Pacific, which have different focus areas but also commonalties, are in Armenia and Sri Lanka. Both labs are supported by United Nations Development Programme (UNDP) and serve as models for UNDP's accelerator lab program.[5]

Both labs
(i)   provide a safe space as new agencies without red tape,
(ii)   facilitate public–private sector dialogue and collaboration,
(iii)   serve as learning centers where public servants can develop innovation capabilities, and
(iv)   provide foresight and futures strategic thinking skills to government planning agencies.

B.   Two Innovation Labs in Asia and the Pacific

1.   Armenia: Sustainable Development Goal Lab[6]

The lab was established in 2017 as a joint venture of the Government of Armenia and the United Nations Office in Armenia, with support from the UNDP. The lab's objective was to accelerate the achievement of the 17 Sustainable Development Goals (SDGs) set by the United Nations, which the government agreed in 2015 to accomplish by 2030. The lab is set up like a start-up, with a lean structure of 14 staff members and a budget of around $1.5 million for the first years. The lab recognizes that the government needs disruptions outside traditional public sector agencies and space to experiment and develop policies that are future oriented and maximally human centered. The lab insures the government from the risks—including failure and loss of large sums—of trying out new policies and approaches on a large scale.

The lab uses innovation tools and runs experiments to provide evidence-based recommendations to the government on what would work or not work, thereby stimulating the introduction of impactful solutions to development issues. The lab follows steps 1–5 of an innovation process (figure)

(i)   **Behavioral experimentation.** The center was inspired by examples from France and Italy to perform behavioral experiments to inform policies. One experiment was related to tax collection. One reason people and businesses do not pay taxes in Armenia is that they do not know what the government spends the taxes on. To change this behavior, the lab prepared 13 types of letters and sent them to 39,000 small and medium-sized enterprises. The letters explained where taxes go by percentage. One letter asked where the firm would like 10% of its taxes to be spent

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5 https://acceleratorlabs.undp.org/.
6 http://kolba.am/en/.

and offered to try to make this happen. Another letter invoked social norms, stating that 90 out of 100 pay their taxes and highlighting that the business should not be an exception. The experiment indicated which communication approach would work best to make businesses pay their taxes. Another project—Edu2Work—will provide real-time data from analysis of job advertisements, including skills demanded and wages offered, and help bridge the gap between the worlds of education and the employment market. Behavioral interventions based on the results will help direct youth to choose the fields most in demand, and guide informational campaigns. This program is being carried out within the framework of the Work Armenia program, together with the United Kingdom innovation foundation Nesta[7] and the United Kingdom Behavioural Insights Team.[8]

(ii) **Data science application.** The lab was the first in the world to create a platform providing real-time analysis of tourists' positive and negative experiences, revealing issues in the industry and showing points of intervention for policy makers (https://www.travelinsights.ai). The lab continually analyzes social media and websites such as TripAdvisor, Airbnb, booking.com, and Facebook to gain insights from three main categories (hotels, restaurants, and attractions) and show compliments and complaints based on insights from 27 subcategories. The Tourism Committee of the Ministry of the Economy constantly receives this information to be used for marketing campaigns and for addressing issues. The lab is carrying out a variety of other big data projects, such as the creation of a farm registry, to learn what farmers produce and in which capacity. There are some 272,000 farms in Armenia today. Real-time satellite and drone imagery will be supplemented with on-the-ground information. Artificial intelligence (AI) will help monitor crop growth. With greater information, the efficiency of agriculture can be maximized.

(iii) **Learning and development.** The lab offers programs to train public servants to apply innovation methods such as foresight and futures thinking, human-centered design thinking, systems thinking, and innovation challenge design. Policy makers use the most advanced public policy tools to experiment and drive change.

The main criteria for the lab's success are the ability to change and influence policy to be more innovative, citizen centric, and results oriented, and to help meet critical development challenges.

2. Sri Lanka: Citra[9]

Citra is Sri Lanka's first social innovation lab. It was jointly established 2017 by the Ministry of Science, Technology and Research, and UNDP, Sri Lanka. Modeled after the lab in Armenia, it brings together partners such as Nesta and Alberta CoLab[10] of Canada to design the overall program approach, train staff, and adapt innovation methods and processes (figure) to the Sri Lankan context. The lab is supported by the Government of Denmark, which has experience in setting up public sector innovation labs and mainstreaming innovation capabilities across government.[11] Like the Armenia lab, Citra's main client is the government. The Citra team works with innovation champions in government and helps them test innovative ideas and approaches, find new solutions, and bring in expertise that is not at hand in government agencies. Experts

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[7] https://nesta.org.uk.
[8] https://www.bi.team/.
[9] https://www.citralab.lk/.
[10] https://thecolab.ca/.
[11] https://apolitical.co/solution_article/mindlab-2-0-denmark-establishes-its-next-generation-innovation-lab/.

include data specialists, design and system thinkers, foresight experts, and research analysts. The team has 10 members.

The lab is working on several projects, which the government experts brought in. The following examples provide good insights into the nature of engagements:

(i) **Dengue prevention program**. Staff members from the municipal councils came to Citra to find a way to manage the increasing dengue outbreaks. Citra brought together stakeholders, including from the health sector, and developed an approach that involved communities. Stakeholders and communities contribute to a dengue risk platform, which provides the municipal councils with information about potential mosquito-breeding grounds and dengue cases. Community members upload photos of potential breeding grounds in real time, which can be immediately inspected by the local government.

(ii) **Parliament entry process registration**. Parliament administrators asked Citra to help them improve the Parliament registration system, which was cumbersome and often delayed visitors' access. Citra developed a real-time registration platform.

(iii) **Tracker platform to monitor progress of SDGs**. The government has difficulty monitoring all the SDGs and getting data quickly. Citra piloted an automated tracker system for SDG 3 (on health) and is expanding to nine more SDGs. The platform visualizes the data and progress and allows decision makers to use the data for evidence-based policy and program development. Citra is working closely with the Office of Statistics and Census.
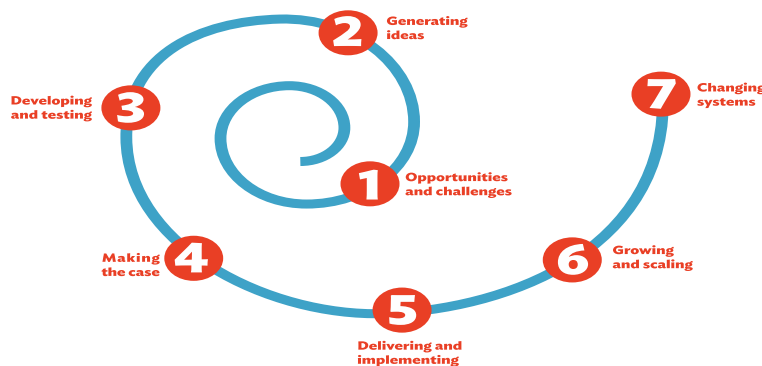
These projects may seem small, but they influence public sector staff to think differently and to innovate. The private sector mentality of improving services to clients should drive the government. To increase visibility and reach the youth, the lab runs the National Youth Social Innovation Challenge, which held the first National Youth Software Competition in 2017.[12]

One of the greatest achievements of Citra is that it has gained the government's trust. One of its biggest projects is to develop government officials' capacity to think differently. It offers innovation capability training and, instead of calling for nominations, it publicly invites applications, then interviews candidates. The program runs for over 3 months, with 5 days of residential training, 3 months of mentorship, and access to a network of innovation champions within the government. The program is supported by Nesta and its State of Change program.[13] The feedback from participants has been outstanding.

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[12] https://citralab.lk/content/citralab/en/home/projects/project4.html.
[13] https://www.nesta.org.uk/project/states-change/.

Innovation Process

Source: NESTA, adapted by authors.
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C.   Singapore: Moving Toward Private Sector–Oriented Innovation Labs

While Singapore has a long experience in public sector innovation, the latest trends veer toward private sector labs concerned with solving big (traditionally public sector) challenges:

(i)   specific tech areas such as AI,
(ii)   subsectors such as digital banking and financial technologies (fintech), and
(iii)   smart cities or smart health.

Singapore has an emerging ecosystem that supports innovation and provides services for innovation, incubation, and acceleration. The latest project is the Innovation Enablers Network,[14] hosted by the Action Community for Entrepreneurship. The network has an entrepreneurship and private sector feel to it, but many of the actors involved depend on government funds being pumped into the ecosystem for start-up and innovation support.

Under the government-supported AI Singapore,[15] Singapore universities are partnering with the private sector in advancing AI capabilities. The partnership between ride-hailing, food order, and payment platform app Grab with the National University of Singapore is one such example. In July 2018, the partners announced an initial investment of approximately $4.4 million into a joint research lab focused on mobility and livability in Southeast Asia. In February 2018, Alibaba co-established a research institute with the Nanyang Technological University to explore AI in healthcare and city planning. Local telecom company Singtel committed around $31 million to a corporate lab for AI and data science at the National Technological University in December 2017, to develop apps for public safety, smart urban solutions, transportation, health care, and manufacturing.

Government agencies collaborate closely with vendors in test-bedding frontier technologies. The Ministry of Home Affairs, for example, in partnership with Japan's tech conglomerate NEC, set up a smart command center in 2017, tapping the nationwide network of closed-circuit surveillance cameras and, potentially, drones. NEC has since opened the Advanced Centre for Experimentation research and development lab (the first outside Japan) to develop proofs of

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[14] https://epic.ace.org.sg/ien
[15] https://www.aisingapore.org/

concept for customers and partners, including governments and enterprises, in areas such as public safety, transportation, and health care. This investment was soon followed by the launching of the NEC Open Innovation Centre in 2018, which enables demo and engagement with biometrics, AI, and digital ID technology. The Open Innovative Centre received funding from the Economic Development Board. Similar innovation labs exist in many private sector companies, some directly linked to government projects, and others, such as the Samsung Product Innovation Team or Manulife Lab of Forward Thinking, focused on research, product development, and marketing.

D.   Summary

Armenia, Sri Lanka, and Singapore show that, independent of countries' income level, governments are tapping into private sector approaches to innovation and following problem- and issue-oriented approaches to bring stakeholders across sectors together to innovate and find new solutions. At the same time, the public sector is looking into experimental schemes, such as regulatory sandboxes and test beds, to better learn how to test, implement, and regulate new technologies and services before scaling them.

AUTHORS

Susann Roth, Yazeen Bawa Mohamed Asmi, and Arndt Husar, Asian Development Bank

Informed by interviews with Stepan Margaryan from KOLBA, and Yasas Thalagala Citra and Brenton Caffin from NESTA.