Economics and Environmental Policy Research Network
Research Symposium

February 27th – 28th, 2020

Session Notes for Parallel Session #3:
Designing Regulatory Institutions & Enabling Experiments for Innovation

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1. State of Existing Research and Discussion Context

This session sought to explore how regulatory institutions enable or promote experimentation and innovation.

Key themes discussed in the session include:

- **History of Regulations:**
  - **Context:** It used to be assumed (from the 1950s to 1980s) that private entities and regulators understood the full risk of any activity, like nuclear power. Understandably, that is untrue – neither can fully understand all the risks of a project.
  - **Challenges:**
    - This lack of understanding of the risks of a project can include hidden hazards and flaws in the design of the material, or the interaction of sub-components that nobody could have feasibly anticipated given the testing period and conditions.
    - The transition to flexible regulations is challenging, and its future and success largely depend on the first steps taken within a specific sector. The regulator has to verify if the plans are workable and if monitoring will be effective, ensure that any deviations from the control values are reported, and tell others about hazards so they can respond to them, etc.
    - We have to sound a note of caution about the risks flowing from an excessive focus on "flexibility" and "agility" in the realm of public goods regulation at the expense of the core purposes of those rules with respect to public safety, public health, and the environment. There have been several examples of very serious consequences, including major losses of life, flowing from that happening.
      - E.g. the Lac-Mégantic rail disaster, the Boeing 737 Max situation, and the Grenfell Tower Fire.

- **Regulatory Gaps and Barriers:**
  - **Context:** Regulatory barriers exist, including technological barriers, lack of rules, etc.
    - The case of the emerging issue of post-consumer management of EV batteries was highlighted as an example of an emerging regulatory gap to which regulators in Canada and the US have been slow to respond. The situation not only raises risks around improper handling and disposal but is also a major challenge for those looking to build businesses around the reuse and recycling of post-consumer batteries.
  - **Challenges:** It can take a long time to create new regulations.

- E.g. It can take six months just to engage with the public, and two years can go by before the regulation has been officially published. A significant part of the problem is not the regulation itself but the implementation of the regulation.

- **Human Qualities:**
  - **Context:** The culture and qualities of people themselves must also be considered. While focusing on the execution of regulations is important, we must also take into account the human dimensions.
  - **Opportunities:** Strong leadership is key: modeling new behaviors, new competencies, hiring, and growing competencies can lead to a successful organization.

- **Approaches to Regulatory Experimentation:**
  - **Context:** There are several approaches for regulatory experimentation support:
    - *Advisory Approach:* A concierge service, where a developer works with a regulator to adapt products to comply with regulations.
    - *Sandbox Approach:* Where the regulator may exempt developers from certain requirements to gain more information; this also allows for trial runs.
      - **Opportunity:** There are sandbox experiments already underway in the UK (flying high programs), Japan (hybrid bikes), Singapore (AV trials), and Canada (drones and electronic shipping documents).
    - *Iterative Approach:* This is a co-development process that allows the regulator to learn about technology and adapt regulations based on interactions with the developer; this allows for assessment of the technology.

- **Regulations in Canada:**
  - **Context:**
    - For the Canada Zero Plastic commitment, it was assumed that regulations were the problem. However, upon further investigation, it became apparent that the barriers were in fact the use of sandbox terminology and the lack of developer understanding of the terminology.
    - It was thought that baseline performance wastewater effluent regulations were the barrier for improvement. Again, the regulation was not the significant challenge, rather funding and capacity were.
  - **Challenges:**
    - It can be difficult to determine what elements are prohibitive.
    - Innovation involves embracing uncertainty, which may not be appealing to distributors who must recover costs.

- **Sandboxes:**
  - **Challenges:**
    - Sandboxes are often linked with experimentation, which implies that failure is possible.
    - Regulator knowledge, capacity, and culture is restrictive.
    - Some feel that new frameworks will distract from current work on a seemingly successful regulatory path.
    - Sandboxes are sometimes perceived as a solution that is looking for a problem.
  - **Opportunities:**

- There is a need to educate people about sandboxes: that sandboxes are not as advertised but are instead a window to conversation.
- Regulators can wrap their head around the idea of a regulatory permit.
- The aim of sandboxes must be related to the organization's mission.
- If organizations pick the issue first, then they can consider whether a sandbox is applicable and whether it is the most suitable tool.
- Sandboxes can provide temporary relief from regulatory requirements.
- Flexibility can be key – there are no pre-conditions for engagement, no deadlines, no filing requirements.

- **Case Study: California Air Resources Board:**
  - **Context:** The California Air Resource Board is the primary state agency for air pollution control, and it regulates emissions from mobile sources. The Board generally uses a performance-based approach – allowing industry to choose how they want to meet the requirements. The state also uses technology-forcing approaches by using both regulations and incentives.
  - **History:**
    - 1990s: California set legislation and regulations to deal with smog (before the federal government). Standards for cleaner burning gasoline, zero-emission vehicles, and low-emission vehicles were implemented. As a result, air quality significantly improved.
    - 2000s: California created a Statute to decrease greenhouse gas emissions as well as other pollutants.
    - 2016: California hit their target to reduce emissions (the goal was for the year 2020), and they now have new reduction standards in place.
    - 2018: Legislation was passed requiring 100% of electric power to come from renewable and zero-carbon emitting sources by 2045.

2. Research Questions Identified

- **How much stringency is required for proper regulation?**

- **How will the Canada-United States-Mexico Agreement affect regulations in Canada?**

- **How would you go about trying to change the nature of an organization?** E.g. Even in a risk-averse hierarchical organization you can't eliminate discretion because it is impossible to write rules that cover every situation. As such, staff at the ground level (like inspectors) can exercise discretion on a per basis situation.

- **Who are sandboxes for?**

- **What examples of cultural shift are being experienced?** E.g. policing vs. cooperating; co-learning.

- **What is the nexus to having conversations between regulators and Small and Medium-Sized Enterprises (who have little capacity)?**

- **Are regulatory policies well understood? (By regulators? The public? Other?)**