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Innovation for Better Management

The Contribution of Public Innovation Labs

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Sebastián Acevedo and Nicolás Dassen

Abstract*

The technological, economic, and social changes of recent years have required governments to adapt to new challenges and growing demands from civil society. In many countries, and at different levels of government, this has led to the creation of innovation labs that aim to promote policy innovation in diverse ways. This paper analyzes the roles of innovation labs in Latin America, examines their challenges, and compares them to best practices and characteristics that current literature associates with higher levels of innovation in the public sector and in other organizations. Based on a survey of lab directors and the undertaking of two case studies, this paper describes the scope of innovation labs in Latin America and discusses the challenges they face to (i) work on central issues, (ii) achieve the adoption and scale up of their innovations, and (iii) ensure their sustainability. There are four key factors that determine the success of innovation labs in overcoming these challenges: two of these are of a political and institutional nature, namely leadership support and policy networks, while the other two relate to lab methodologies, namely the technical adaptation of their innovations and the building of a shared meaning. Additionally, two major differences have been identified between the innovation labs discussed herein and those of other regions, as described by the existing literature: a greater focus on issues of open government and less rigorous testing of their innovations, such as randomized experimentation and impact evaluation. Lastly, this study provides the relevant conclusions and recommendations on how to establish innovation labs as effective channels to manage innovation in government, along with its inherent risks, and modernize public administration.

JEL Code: H11

Keywords:

- digital government
- innovation labs
- state modernization
- open government
- public innovation

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Foreword

In a new era marked by the digital economy, innovation is a tool that is indispensable to the private and public sectors. The pressing need to innovate comes with many challenges and creates numerous opportunities to increase public service efficiency, enhance confidence in government, and improve the quality of democracy. Over the past decade, economic growth in Latin America and the Caribbean (LAC) has created a new middle class, as well as increasingly better connected societies that demand quality public services, more transparency and state integrity, as well as mechanisms for the co-creation of public value. The increasing digitalization of societies and economies has led to the rise of a better informed and digital citizenship than ever before.

Today, Latin Americans—especially the millennials born under democratic governments—reasonably demand more state transparency and greater involvement in public policy. The growth of a digital economy and of open government, as well as the consequent large volume of data, has created numerous opportunities for innovation in the search for solutions to issues of public policy that were seemingly insolvable until now. It is therefore necessary to have a government in place that is capable of adapting to technological change. Many of the reforms in progress intend to improve the agility of government and a rethink of the relationship between the state and its citizens by way of open data, the simplification of administrative procedures, and the digitalization of services offered. The digital revolution provides not only an opportunity for reform; it also provides the opportunity to rethink the role of the state in a way that will serve its citizens and not the other way around. In other words, the digital revolution aims to reduce bureaucracy and promote state transparency. To this end, national governments and local governments of large cities in Latin America have begun to establish innovation labs to leverage the opportunities brought by technological innovation and big data analytics.

The authors of this paper examine government innovation labs as mechanisms to promote public sector innovation in LAC. A survey of lab directors was undertaken, as were interviews held with key stakeholders in the performance of labs. Given the timely rise and evolution of innovation labs in LAC, it is possible to draw from these early experiences, as well as from those in other regions. Innovation labs in Latin America represent a part of a broader agenda of state modernization that calls for open and digital government in

a context where citizens demand greater effectiveness, efficiency, and transparency. As labs are able to encourage experimentation, co-creation, data generation, and data use, they become a mechanism to modernize and innovate public administration.

This study aspires to enrich the dialogue on public sector innovation and aims to encourage the adoption of new mechanisms, such as innovation labs, open government data, and big data analytics. The study was conducted to support of the Regional Policy Dialogue on Open Government, organized by the Inter-American Development Bank (IDB), and coordinated in conjunction with the Secretary of Transparency of the Government of Colombia (Secretaría de Transparencia del Gobierno de Colombia) in Bogotá in October 2016. The study is part of the knowledge agenda of IDB's Institutional Capacity of the State Division on state modernization in the new digital economy. This agenda focuses on innovation in public administration and the delivery of services to citizens. It also includes research on digital government, service quality, open government, and transparency. In particular, the IDB invests in rigorous evaluations to assess the impact of digital solutions and measure the costs and benefits of government innovation. For more information, please visit http://www.iadb.org/en/sector/reform-modernization-of-the-state/overview,18347.html and the "Gobernarte" blog http://blogs.iadb.org/gobernarte.

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Introduction

In recent years, countries in Latin America and the Caribbean (LAC) have undergone remarkable change. Sustained economic growth has led to the rise of a new middle class, social demands for better public services, and more participatory mechanisms in the decision-making process of government.

Meanwhile, the growing digitization of social, economic, and political activities has given rise to a new, better connected and informed digital citizenship than previously.[1] The participation of citizens in digital platforms and the consequent large volumes of data pose a challenge to governments in terms of managing more and better information in an effort to effectively resolve issues of public policy.[2] Driven by new technology in the realm of communications and information, digital citizens expect public institutions to open channels for co-creative value and participation in policy design, implementation, and monitoring processes. Faced with these demands for more effective administration under budget constraint, LAC governments are compelled to increase efficiency.

Governments are now expected to be able to innovate and modernize so as to adapt to technological change, budget constraints, and the demands of civil society. To achieve this, national and subnational administrations in the LAC region have begun to create labs for government innovation. At a global level, most labs have flexible resource management, knowledge of design methodologies, capacities for low-cost experimentation, and are able to implement pilot projects in controlled environments. Lab methodologies also include the involvement of citizens in the decision-making process or promote the collaboration between various state and non-state actors. As innovation in government involves high risk and can have significant consequences in the event of failure, innovation labs have begun to position themselves as entities that are able to absorb those risks and promote the adoption of new practices in public administration.

(1) Latin America has the highest level of social media usage in the world; it is also the region with the fastest growing penetration rate of social media and smart phones. In 2015, the number of internet users in LAC surpassed 344 million, representing a penetration rate of 55.9 percent; 95 percent of these users are also social media users. The penetration rate of mobile phones in Latin America has reached 112 percent, while the global median rate is 85 percent (Tufts, 2016; Fosk, 2015).
(2) Currently, data is generated at a rate of 2.5 quintillion bytes per day (Yankelevich et al., 2016).

This study examines the contribution of labs to the innovation ecosystem in the Latin American public sector. In order to promote effective, scalable, and sustainable policies that will modernize the state, it is of vital importance to understand the characteristics, strengths, and weaknesses of these labs. Given the recent rise in innovation labs in Latin America, it is timely to draw lessons from new experiences, including from other parts of the world, and to discuss the roles, characteristics, challenges, and the ways to maximize their value addition in government operations.

This paper highlights the difference between innovation labs and traditional government agencies, discuss the advantage of labs as promoters of innovation, and analyze the potential challenges they face in terms of effectiveness. Among the challenges that will be examined are the (i) capacity of labs to innovate the issues and processes that are of importance on the agendas of other government institutions; (ii) effective adoption, scaling up, and replication of innovative models by and among government agencies; and (iii) the sustainability and continuity of developed and implemented solutions.

In comparison to other regions, the increase in the number of public innovation labs in LAC is a consequence of a swelling open government agenda. From an in-depth study of labs in LAC, including their objectives, ventures, institutional status, and rhetoric, the majority have been found to concentrate on issues of citizen participation, open data, transparency, and co-creation, in an effort to improve the interrelationship of the state and civil society, the latter of which feels disenfranchised from government. In contrast, a brief review of innovation labs around the world suggests that a broader range of public sector issues are being addressed, such as government expenditure efficiency and revenue collection effectiveness.

Moreover, labs in Latin America have not considered pilot testing in controlled environments a priority, as have those in other regions. The cases under review in this study demonstrate that there have been less instants of testing (e.g., randomized experiments and impact evaluations of pilot projects). This not only compromises the ability of a lab to manage the risks of public sector innovation; it prevents them from effectively absorbing the risks in support of other government institutions. Rather, many innovation labs in LAC position themselves as entities that support government agencies by implementing projects relating to citizen participation and public co-creative value. Many of these labs, however, do not conduct rigorous impact evaluations of their projects, giving rise to a strong case for labs in LAC to develop the capacity to brand themselves as entities that are able to channel the most risky innovations of government.

The study of the labs falls within the broader research agenda on public sector innovation, its drivers and impact on state

modernization. Thus, the characteristics—based on the literature—are presented in terms of greater levels of public sector innovation. In addition, a hypothetical discussion will be made of the aspects that promote the diffusion of innovations among government agencies and different governments.

The empirical component of this study consists of a survey of innovation lab directors,[3] as well as interviews held with directors and members of labs, public employees who have interacted with labs, nongovernment (NGO) stakeholders, citizens, and members of civil society organizations. A total of 24 people were interviewed (Annex I). Also reviewed were public and private documents relating to the characteristics of labs, the legislations that regulate them, their projects, and the impact assessments they undertake.

The labs that participated in the survey include Lab.Rio (Rio de Janeiro); PENSA, Sala de Ideas, Rio de Janeiro; Laboratorio de Innovación de Quito, or LINQ; Laboratorio para la Ciudad, Mexico City; LabProdam, São Paulo; Laboratorio de Innovación Social, or LIS, Uruguay; Laboratorio de Gobierno, Chile; Laboratorio Hácker, Chamber of Deputies, Brazil; Laboratorio de Innovación y Gobierno Abierto, Buenos Aires; iGovSP, São Paulo; Mobilab, São Paulo; Vivelab, Bogota; Laboratorio de Innovación de Xalapa and Laboratorio de Datos, Mexico.[4]

In addition to profiling the labs based on the survey of their directors, the paper presents two case studies. The first relates to LIS, administered by the Government of Uruguay, and the second examines three agencies that promote public innovation in Rio de Janeiro: Lab.Rio; PENSA Sala de Ideas; and the Rio Operations Center. These studies include an in-depth analysis of lab management processes and they identify the way the contextual characteristics can impact on the effectiveness in promoting innovation in their respective governments.

The second section of this paper presents a theoretical framework for public sector innovation that is based on a review of the literature. It addresses five factors that are usually associated with this type of innovation, namely, the (i) input of stakeholder views, (ii) creation of internal and external policy networks, (iii) support from political leaders in favor of innovative activities or their implementation, (iv) flexibility in the utilization of resources, and (v) risk management with specific instruments. The third section contains a general description of innovation labs, highlighting

(3) The survey did not focus on public perception or opinion; nor was it conducted to deduce the characteristics of a larger population from only one sample. Rather, the survey systematically gathered specific information on each case by relying on trustworthy and informed sources. For a more detailed rationale of the methodology, see Gervasoni (2010).

(4) The Data Lab of Mexico has been excluded from the data analytics, since it was not in operation when this study was conducted.

their key value additions vis-à-vis traditional public institutions and identifying their distinct features in Latin America.

The fourth section discusses the risks and potential challenges that labs face, and it analyzes them as initiatives created to promote government innovation. Their difficulties to intervene into key public agendas and to ensure that innovations are effectively adopted, scaled up, and sustained over time are discussed throughout the paper. The key factors for success are identified and suggestions are made on methods to overcome the barriers, based on the survey and case studies.

Theoretical Framework

The public sector is often viewed as being significantly challenged in terms of innovation, based on a myriad of regulations and complex processes. In part, this is because governments rely on tax revenues and must be accountable to the taxpayer while guaranteeing a standard of integrity and transparency. Moreover, risk-taking in the public sector differs from that of the private sector, where many companies have to take risks and innovate in order to remain in the market and where companies competing in innovation will generate higher profit margins before being replicated by others. Public entities, however, face a different scenario whereby their continuity is neither completely nor directly related to the innovation and where the effectiveness of the innovation depends on effective scale and replication.

Since earlier times, modern bureaucracy continues to base itself on maintaining a stable public administration; effectively implementing the concepts of political leaders in a top-down approach; and embedding a sense of predictability for stakeholders within civil society and in the private sector (Weber, 1964). Governments around the world, nevertheless, continue to face the challenges of behavioral change among their constituents and the use of new technologies, with social issues for which they seek resolutions changing and evolving each day. Modern challenges, such as globalization and climate change, are so complex that they need a multi-sectoral approach, requiring collaboration between various public policy areas and stakeholders. Such collaboration needs the input of civil society, public service users, and other key non-state actors. Public sector innovation, therefore, is the product of a delicate balance between maintaining regulatory stability and a certain degree of predictability for private sector stakeholders, as well as to come up with new ways to tackle challenges in an increasingly complex and constantly changing society.

Current times both demand innovative governments and bring relevant opportunities and technological tools. Today's digital citizenry requires a more open and transparent government that is able to understand its demands as well as allow it into the public policy process (Valenti et al., 2015). In light of this, ICT is able to create new ways for citizen participation and co-creation, opening the process of public policy design and implementation to an increasingly more connected and better informed society (Castells and Cardoso, 2005). The past few years have seen the development of a wide range of interfaces between state and citizen. These are based on bidirectional, interactive, and more equal ways of communication, providing governments a greater capacity to listen to civil society and involve it in the decision-making and implementation processes. Likewise, the use of ICT in e-government services allows for greater access to

administrative procedures and government information; this, in turn, leads to more efficient public institutions, improves accountability, and encourages citizen participation. Among government agencies, ICT enables new ways of interoperability and inspires a holistic perspective of citizens and their needs. In the LAC region, the rapid growth of mobile phone and social media usage has created favorable conditions for public sector innovation.

The shift of people's social and economic activities to the digital realm entails a massive growth of data about civil society. As a result, there has been a rapid development in the capacities for data processing and analytics. Associated with the term big data, this change also has created opportunities for governments in the region. The analysis of massive and diverse data sets leads to new ways of understanding social phenomena in real time, with levels of precision and details that were previously unthinkable. This allows for an improved design, monitoring, and impact evaluation of public policies.[5] The new tools also will increase the precision and robustness of predictive models, enabling preventive management in areas such as citizen security, urban survey, and tax inspection,[6] while optimizing government resource allocations.[7] The rapid growth of data and the development of ICT, therefore, can bring about opportunity and challenge for innovation in almost every area of public administration.

These and other trends require governments that are capable of continually adapting and evolving, and of innovating not only in terms of their policies and regulations but also in their processes, organizational structures, and methods of communication. This lends particular importance to the questions about which factors are associated with higher levels of innovation in the public sector: *how can incentives be aligned to stimulate the creation of new policy solutions while maintaining an acceptable level of regulatory stability and predictability? How can public institutions be encouraged to integrate human capital and new methodologies in data science, design, and the experimentation necessary for innovation? What types of institutional arrangements are the most effective at promoting public innovation in a given government? How can public sector innovation become the rule and not the exception?*

(5) The analysis of big data can support management decisions by monitoring and predicting various social phenomena speedily and with a high level of detail. For example, the Rio Operations Center overhauled its transportation policy by using mobile phone data containing geographic and timely information on the location of residents, information on accident reports on social media, and the location of inspectors.

(6)These types of examples are found in institutions such as the Chilean Police and Uruguayan National Police, which are able to anticipate the incidence of crime by geographic area and time of day. This enables the automatic dispersement of police officers to the field and enables preventive security management. Similarly, big data solutions, adopted by tax authorities such as the General Directorate of Taxation in Uruguay, are more likely to detect tax evasion and more effectively target evaders for inspection.

(7) For example, the Government of Colombia has identified 654,000 cases of inconsistency in SISBEN, the main database for social programs, by cross-referencing information with other databases.

Factors that Impact Public Sector Innovation

Although nascent, the literature on public sector innovation has made progress in addressing the aforementioned questions quantitatively and qualitatively. Quantitatively, there are studies and research projects aimed at systematically measuring the levels of innovation in the public sector (Bloch and Bugge, 2012; Bloch, 2011; Hughes, Moore, and Kataria, 2011; Australian Government, 2011; Bloch et al., 2009; Hughes, Farren-Handford, and Baker, 2009; Nesta, 2009). Some of these authors have developed their methodologies based on the Oslo Manual, a guide for measuring innovation in the private sector. Moreover, qualitative research has focused on case studies and comparative analyses to identify common characteristics and different innovative models (Daglio, Gerson, and Kitchen, 2015; European Commission, 2013; Lewis, Considine, and Alexander, 2011; Mintrom and Vergari, 1998).

A segment of the literature concentrates on the innovation-friendly environment—one that encourages new ideas, effective prototype implementation, and appropriate risk management. Various issues should be taken into account, such as nonpublic sector stakeholder inclusion in the public policy process, systematic analyses of public service user opinions, a certain level of flexibility in the utilization of resources, and an understanding of failure as an inevitable consequence of the innovation process. The following sections will discuss the key factors in the literature.

1 Integration of nongovernment stakeholder opinion

One of the driving forces of innovation is the integration of external perspectives in the process of public policy design, implementation, and monitoring. It concedes a departure from the traditional logic of government institutions and facilitates the dissemination of new ideas to each government area. One method is to involve citizens in the public value co-creation process[8] or to execute citizen feedback

(8) For example, the action plans of the Alliance for Open Government have been designed and implemented through the process of public consultation and citizen participation. Other examples relate to open budgets or public consultation in the legislative process.

systems such as complaint hotlines and apps and exit surveys.[9] For example, a few bureaucratic attempts to overhaul processes have relied on the participation of civil society to arrive at a user-centered approach (Totorica et. al., 2016).

Another way to promote innovation with a new perspective in government is to create teams that include people of diverse backgrounds and profiles, and associate them with public sector professionals with experience from outside of government and at different levels of public sector experience. This will enrich the input into the public policy process and overcome sectoral barriers (Daglio, Gerson, and Kitchen, 2015).[10] Other authors suggest concentrating on the opinion of government agency employees, considering that they are known to desist within hierarchical structures (Kohli and Mulgan, 2010).

The concepts of empathy and human-centered design are especially important in this context. This is because an in-depth and detailed understanding of citizens will improve the design of public services by adjusting them to people's needs. These concepts advocate the involvement of users in the policy design process and the implementation of mechanisms observation and dialogue.[11] In recent years, the growth of the digital footprint has instigated government agencies to implement active listening projects to gather citizens' views by monitoring social media.[12] This helps to identify the issues that citizens care most about, as well as who the influential stakeholders are in each network, and to provide input to setting the governmental agenda. Furthermore, the Internet of things now permits a more in-depth analysis of citizens' behaviors than was previously possible without the need to pose questions directly.

Box 1: **Monitoring Social Media to Generate Input for IDB Agendas**

Subsequent to the challenge of promoting the gender agenda in regional development, the Inter-American Development Bank (IDB) escalated the issue to social media, listening to citizens from five countries (Argentina, Brazil, Colombia, Guatemala, and Mexico). An analysis of the feedback on Twitter, Facebook, and blogs enhanced the IDB's understanding of people's concerns. The Bank was able to identify the main themes and subthemes being discussed around gender, as well as the main social networks and the most influential stakeholders. The information gathered serves as input into the design of gender projects and for the inclusion of the gender topic on institutional agendas.

2 Internal and external organizational networks

An environment for public innovation requires "policy networks" that are based on trust and the free exchange of best practices, information, and ideas (Bekkers, Edelenbos, and Steijn, 2011; Klijn, Edelenbos, and Steijn, 2010; Koppenjan and Klijn,

(9) See Goldsmith and Crawford (2014).

(10) For example, in 2007, the United States Transportation Security Administration launched IdeaFactory, an online community for its employees, to suggest and comment on proposals for improving their work. Another example is the wiki manual of the United States Navy. The soldiers submit ideas for change for consideration, which are analyzed by a central team. Allowing stakeholders to write and edit rules within certain protocols can promote compliance with and adaptation of such rules. (Kohli and Mulgan, 2010).

(11) Examples of this are found in labs in other regions, such as Mindlab, Behavioural Insights Team, and La 27e Región, among many others.

(12) Active listening refers to the ability to listen attentively to the message of an originator and to respond appropriately. The expression is used in this case to refer to the capacity of a government to incorporate the opinions of citizens and adapt its communication and decision making accordingly.

2004; Mintrom and Vergari, 1998). Trust reduces uncertainty over the opportunist behavior of stakeholders in a network, and promotes a ready exchange of strategic information, data, and experiences (Bekkers, Edelenbos, and Steijn, 2011; Nooteboom, 2002; Zand, 1972). Likewise, a trusting environment will facilitate the flow of ideas by trial and error and fearlessness (Barnsley, Lemieux-Charles, and McKinney, 1998). Therefore, the creation of networks will promote collaborative and multisectoral approaches to public policy issues, and will lead to more adept solutions by combining various viewpoints.

Lewis, Considine, and Alexander (2011) state the usefulness of network analysis in understanding the innovation process in a way that demonstrates a positive and statistically significant association between the involvement of public employees in informal networks and their levels of innovation.[13] In particular, participation in strategic information exchange networks and in professional communities are good predictors of the level of innovation for public employees. Other authors have demonstrated how external networks enable the entry of fresh ideas from external sources that may be useful in one's own context (Fuglsang and Storm Pedersen, 2011; Borins, 2000; Mintrom, and Vergari, 1998).[14] In addition, internal networks allow ideas to be adapted to the requirements of an entity and framed in way as to cater to the needs of key stakeholders, rally support, and build credibility for implementation (Lewis, Considine, and Alexander, 2011; Mintrom and Vergari, 1998).[15]

3 Leadership support

The support of political leaders is vital to change in the status quo, since it enables the allocation of resources necessary for innovation activities, promotes collaboration between institutions, and fosters the exchange of information and data (Daglio, Gerson, and Kitchen, 2015; Mulgan, 2014; Bekkers, Edelenbos, and Steijn, 2011; Kohli and Mulgan, 2010). A policy entrepreneur's support for a specific change is key to opening a "policy window" for change (Kingdon, 1995). There is evidence that leadership support can help break the tendencies to thinking routine or the groupthink phenomenon, typical in large organizations (Greenhalgh et al., 2004; Van de Ven et al., 1999).

4 Flexibility in budget and human capital

The innovation process requires flexibility and adaptation to changing needs. Additionally, many innovative tasks require time and funding in addition to routine operations in an institution. These tasks include prototype implementation, impact assessments, and early-stage processing, such as analyses of best practices and the preparation of proposals (Daglio, Gerson, and Kitchen, 2015; Mulgan, 2014; Kohli and Mulgan, 2010). Rarely, however, is there a budget that is specifically earmarked for innovation in the public sector portfolio (Daglio, Gerson, and Kitchen, 2015). Budgetary and human resource flexibility is particularly important for promoting what been called a "learning institution"

(13) Perception indices have been used to measure the innovation level of public employees. The indices are obtained through surveys conducted within municipal governments.

(14) In their analysis of public innovation, Fuglsang and Storm Pedersen (2011) have demonstrated that for one out of every four senior public officials, the main source of innovation comes from the exchange of information with other public institutions.

(15) Network analysis also allows for an understanding of the power dynamics that influence the adoption of innovation and the distribution of resources (Lewis, Considine, and Alexander, 2011; Lin, 2001; Rogers and Kincaid, 1981).

(Bekkers, Edelenbos, and Steijn, 2011) by gaining and creating knowledge from research, prototype testing, and impact evaluation.

5 Risk management

Risk-taking in the public sector is difficult and expensive; a policy failure can affect numerous people or have a significant impact on government budgets. For this reason, the ways in which risk is managed can significantly impact the level of innovation of an institution (Mulgan, 2014; Kohli and Mulgan, 2010). One way to manage risk is to reduce the scale of innovations to prototypes or controlled experiments. By limiting innovations within the confines of a controlled test environment, their impacts can be adequately assessed. Subsequently, decisions can be made over whether they should be scaled up and adopted by other government agencies or applied to all the users of a certain service. This methodology can reduce the risk of potential failure and enable in-depth research on the effects of each innovation (Daglio, Gerson, and Kitchen, 2015).[16]

Another way to mitigate risk is to involve key stakeholders in the process of policy design and implementation. This approach improves the adaptation of innovation to the needs and interests of key stakeholders, increasing the chance of being effective once they are implemented. Likewise, the participation in the co-creation process of a given policy by key stakeholders can increase the sense of ownership and help convey a particular way of interpreting policy.[17]

The inherent risk of innovation can also be managed incrementally. This can be done initially through quick wins and progressing gradually towards riskier projects once the innovation has gained the confidence of leaders and their peers within or outside government.

Faced with these risks, governments and multilateral organizations around the world have begun to establish government innovation labs. These labs are usually equipped with the characteristic that the literature has found to be associated with public sector innovation: a diverse human resource portfolio; seamless relationships with representatives of various government areas and with external actors; flexibility in budget and accountability; specific innovation methods; ability to use new technologies and conduct data analytics; and State-citizen interface tools, among others. The following section discusses the characteristics of innovation labs and their role in stimulating innovation in the public sector.

(16) The concept of failure is central to the perception of risk. A large part of the literature proposes approaching failure as an inevitable byproduct of any process involving discovery and innovation. While failures cannot be eliminated, their impact can be limited within the confines of pilot projects (Mulgan, 2014; The Rockefeller Foundation, 2014; Torjman, 2012; Kohli and Mulgan, 2010; Rodrik, 2004).

(17) Co-creation refers to the act of involving citizens in general or various groups with specific interests (public service users, entrepreneurs, academics) in a creation process. This can lead to better adaptation of the product to the needs of users and stakeholders involved in the creation process. It also fosters a sense of ownership, which can facilitate the adoption and use of innovations by said users and stakeholders. Co-creation is a more robust concept than citizen participation, as the latter is limited to public consultation, while the former involves the citizens in contributing to the design and in implementing solutions on some occasions.

Innovation Labs:
A Response to Challenges in Public Sector Innovation

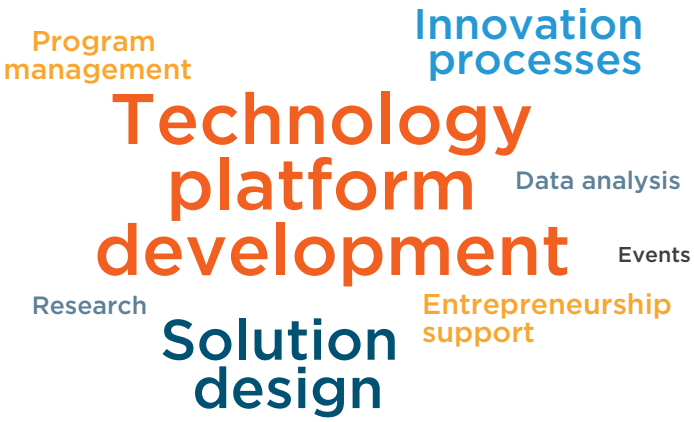
Government innovation labs are dynamic places that stimulate creativity for the design of public policy solutions. These labs usually have multisector teams and approach issues collaboratively. Amid traditional government agencies in which processes and policy changes can imply risk and significant difficulty, innovation labs that do take risks have burst onto the public policy arena in LAC and around the world with the objective of taking risks and making the public sector more dynamic. As discussed later in this paper, some labs run experiments to test their innovations and conduct rigorous impact evaluations, establishing themselves as places for controlled testing of innovative management methods. Meanwhile, other labs center less on direct innovation and more on strengthening the innovation ecosystem in other areas of public administration.

The landscape of innovation labs is rather diverse.[18] Globally and regionally, attempts to standardize the "ideal type" or an exhaustive classification of labs run the risk of being more confusing than clarifying, given their diversity and lack of covariance among many of their attributes. Despite being neither necessary nor sufficient

Infographic 1:

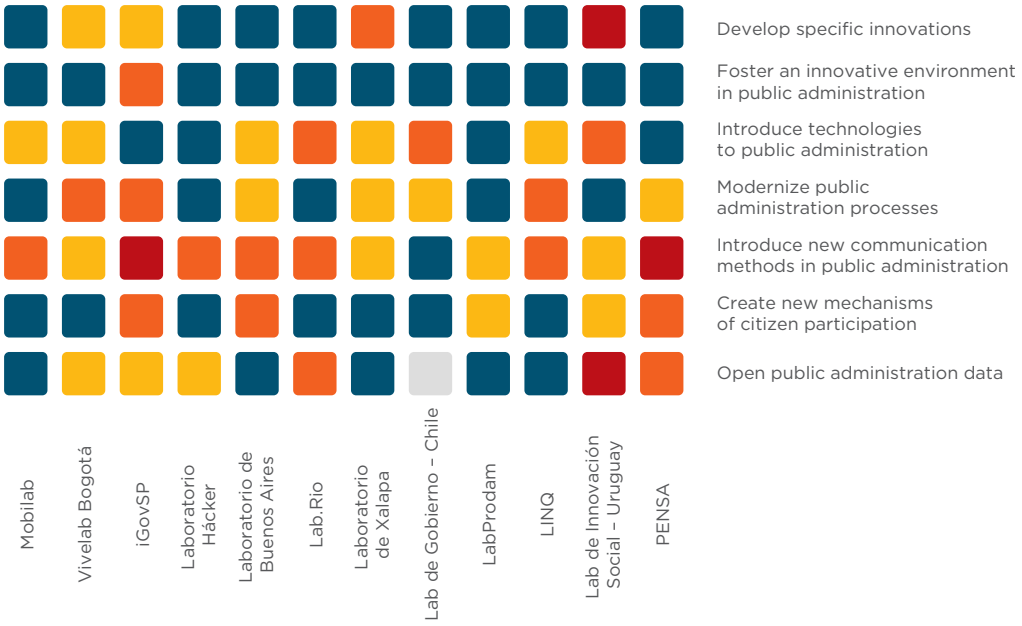
Objectives of the Labs Surveyed

Main activities of the Labs Surveyed

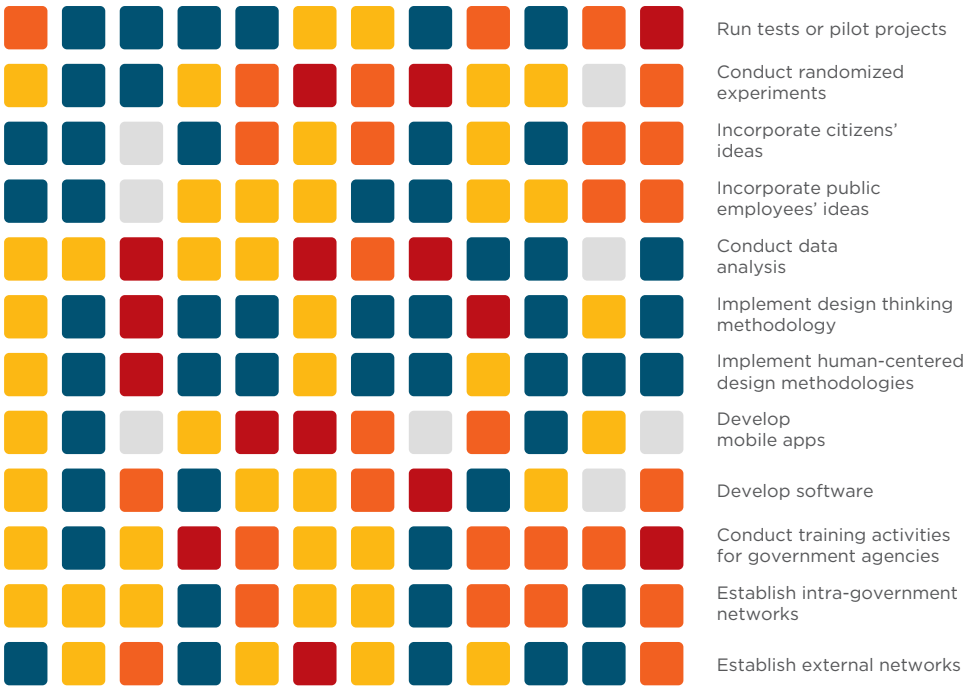


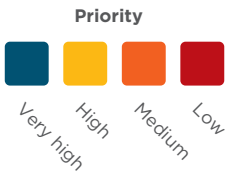
(18) The term "lab" has been conceptually stretched in its use by various types institutions. The labs discussed in this paper are not necessarily self-proclaimed labs, nor is every public entity with the word "lab" in its name included here. Among the innovation labs identified, focus is cast on the ones that promote government innovation and only the ones that are in operation during the time of this research.

Objectives of Innovation Labs



Activities of Innovation Labs





conditions to identify a government innovation lab, some characteristics do aptly describe existing labs and pinpoint their value addition vis-à-vis other "traditional" government agencies.

1 Absorption of innovation-related risk

Public sector entities are known to be highly risk averse and inflexible in their use of resources (Bekkers, Edelenbos, and Steijn, 2011). In this context, innovation labs have emerged as smaller and more dynamic alternatives, which are relatively more independent and have more room for failure than their traditional counterparts. In the survey, some of the lab directors in LAC

reported having mechanisms that explicitly or tacitly accept trial-and-error practices. These labs include LINQ in Ecuador, LIS in Uruguay, Laboratorio de Gobierno in Chile, and Laboratorio Hacker of the Chamber of Deputies of Brazil.[19] They therefore acknowledge that innovation testing can result in failure, and they treat it as an inevitable byproduct of an experimentation process. This view thus influences other government institutions to rely on labs to pilot innovations and mitigate the risk of possible failure.[20]

2 Methodologies of experimentation, swift adoption of pilot projects, and impact evaluation

Many innovation labs have established themselves as spaces for risk-taking and where failure is acceptable. This is largely due to the fact that labs conduct randomized experiments, carry out small-scale, low-cost, and short-term pilot projects, and assess the impact of these initiatives. Experimenting and testing innovations in controlled environments help labs to gauge the impact of these initiatives prior to scaling up, thus reducing the cost of potential failure as a result of trial-and-error practices. The feasibility of experimentation relates to the capacity of the lab and its staff to assess the impact of each project. Hence, those aptitudes are key characteristics of many labs.

This is distinct from most innovation labs in LAC and those of other regions. On the one hand, labs, such as Behavioural Insights Team, Fonds d'expérimentation por la jeunesse, Investing in Innovation Fund, and Nesta, carry out randomized experiments or impact evaluations of their innovations; LAC labs, on the other hand, do not emphasize these activities.[21]

3 Digital technology and data science know-how

The majority of innovation labs have specialized teams for data analytics, programming, and the handling of digital technology. The scarcity in the labor market of specialists in these areas makes it difficult for public entities to engage a larger staff with these skills. This justifies the concentration of experts in one cross-cutting support agency, as is the case with many labs. This practice is especially common among labs that focus on big data processing and analytics, given that the skills necessary are in high demand and are thus well remunerated in the private sector.

A paradigmatic case is the one of PENSA, and Rio Operations Center (Rio de Janeiro). These institutions have implemented new management methods by analyzing data from a variety of government and nongovernment sources. Other labs in the region, such as LINQ and the Data Lab of Mexico (currently under development), also focus on data analytics

(19) In Chile, in particular, the lab is a commission within CORFO (the government innovation agency) that allows for greater budget flexibility than other national government agencies.

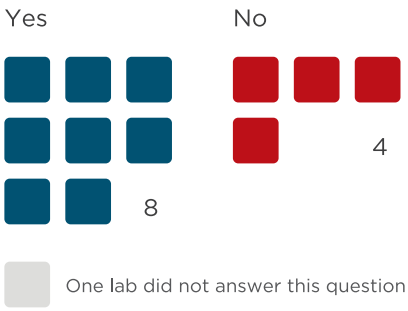
(20) An interview with employees of one institution supported by the Social Innovation Lab (Ministry of Education and Culture of Uruguay) was very clear on this point. The employees described the core value of the lab as "supporting" and "building confidence", as it uses a methodology for citizen participation, which was initiallyquestionable to them. A methodological failure would have been attributed to the lab and not to the recipient organization it supports, which mitigates the potential negative consequences that can occur by undertaking innovation.

(21) So far, a few entities have used these methodologies in a less intensive way. Laboratorio de Gobierno (Chile) assessed the impact of one of its initiatives and LIS (Uruguay) is carrying out a technical cooperation project with IDB, and will assess the impact of its methodologies used for redesigning and putting online administrative procedures.

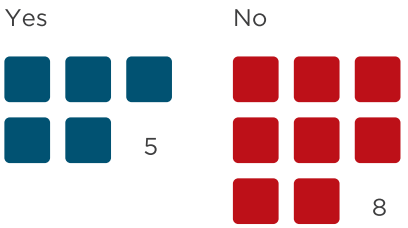
and recruit staff that specializes in statistics and programming. Digitization skills are fundamental to the work of LIS in Uruguay, whose main task is to support other government agencies in the digitalization of complex administrative procedures and their online implementation.

Infographic 2: Working with Data

Is there a team specializing in data processing or data analysis in your lab?



Does the lab conduct big data analysis in-house?



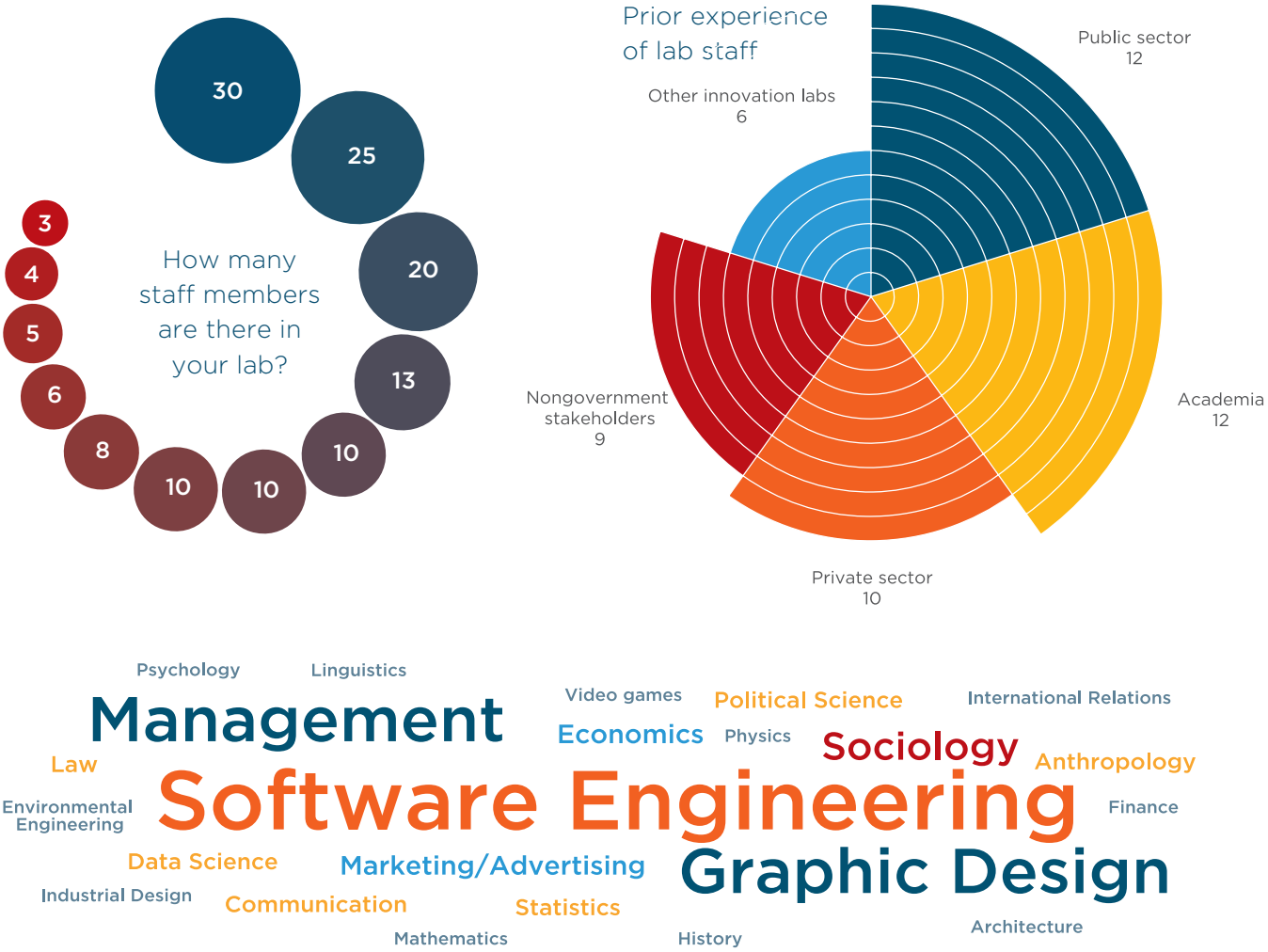
4 Multidisciplinary staff

The objectives assigned to innovation labs have an impact on their structure, since labs are usually composed of staff members from various professions—some with public sector experience and with experience on different sectors. This mix can broaden the otherwise traditional vision of a government institution, realistically combine approaches and methods, and enhance the institution's understanding of civil society and the private sector.

A multidisciplinary nature is one of the most common characteristics of innovation labs in the region. These labs have a mix of staff members trained in various areas of expertise such as engineering, anthropology, psychology, data science, law, economics, sociology, design, history, advertising, journalism, among others. Many labs have a combination of staff members with experience gained from the public sector, business sector, NGOs, and academia.

The inclusion of different points of view and external opinions is associated with a higher level of organizational innovation. Nonetheless, the experiences documented herein indicate that the mix of staff members with and without public administration experience can impact the ability of an innovation lab to effectively engage with other government agencies. Labs with too many staff members that have not previously been in government may run the risk of being marginalized by the government agencies to which they offer support. Further in this paper, the importance for policy entrepreneurs to understand the incentives and concerns of key public sector stakeholders is made clear.

Infographic 3: Lab Composition



5 Collaborative space

Some labs stimulate cooperation between different government agencies, as well as between the government sector, private sector, NGOs, and academia. This allows labs to re-conceptualize public issues by using comprehensive approaches, adopting a holistic approach to identify the fundamental cause of an issue, co-creating solutions that are less encumbered by sectoral barriers within government, and mobilizing the necessary networks to implement public policy effectively and sustainably (The Rockefeller Foundation, 2014:4). In many cases, collaborative practices are complemented with design thinking[22] and co-creation methodologies.

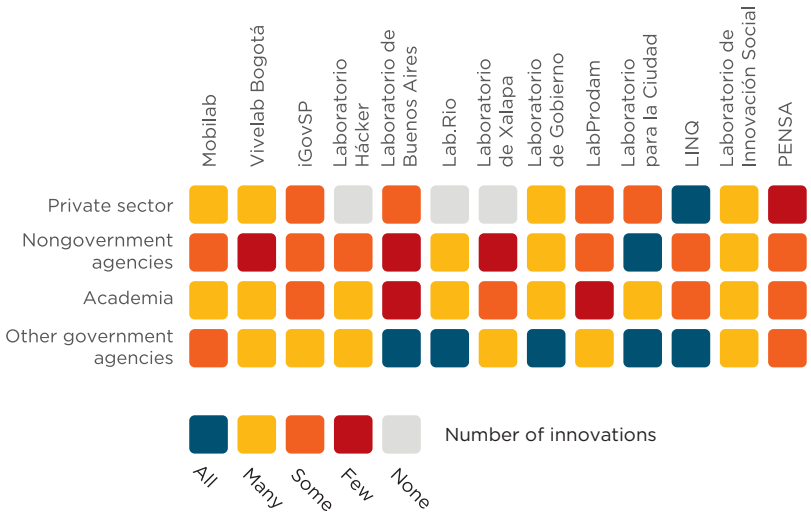
Figure 1 shows that innovation labs in LAC tend to operate as spaces for collaboration among various stakeholders. The labs surveyed work in conjunction with other government agencies, NGOs, and academia, while more than 75 percent of labs have collaborated with private sector

(22) Design thinking is a methodology based on a series of stages, including empathizing with users, defining the problem, ideating, implementing prototypes, and testing. 82 percent of the labs surveyed reported using this methodology.

companies.

A distinct feature of the innovation labs in LAC is their focus on community building and networking. This is especially true of labs with a local presence, such as LINQ, in the innovation lab in Buenos Aires, and Medellin Ciudad Inteligente. These labs undertake initiatives build networks with the entrepreneurial community, taking on the role of coordinator, and focusing on the points of interaction between the government and nonpublic sector stakeholders with regard to social issues. In specific cases where the role of the labs, among other things, is to promote open access to and the use of government data, working with the community is a key component to motivating citizens to use such data.

Figure 1: Innovations Developed in Conjunction with other Sectors



6 Involve civil society in public policy design processes

Examples of this kind include co-creation for participatory citizens and human-centered design.[23] These methods aim to learn as much as possible from the target population and their particular challenges, and leverage their perspectives as a key component at the design stage of policy.

Close to 91 percent of the labs surveyed consider human-centered design activities to be a high and very high priority in terms of the survey. In addition, co-creation is the building block of the methodologies used in some of the labs examined in this paper, such as Laboratorio de Gobierno, LIS, and the Laboratorio para la Ciudad de México. Co-creation consists of getting together all stakeholders of a single policy or social issue in a strive to include diverse profiles and involve citizens, service users, public employees, private sector representatives, or academia. These are examples of how labs seek to more actively leverage the participation of citizens in the policy design and implementation processes. At the same time, new technologies allow for the use of online platforms for the co-creation of public value and debate. These platforms include mimedellin.org, mi.quito.gob.ec, bogotaabierta.co, and Ágora Rio.[24]

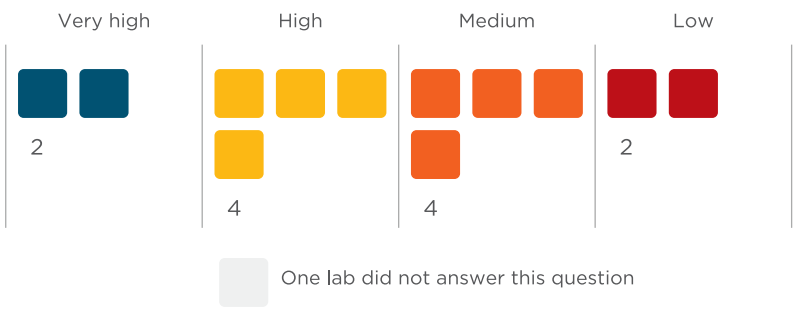
(23) Human-centered design is based on the principle that solutions to people's problems must be designed from an understanding of how they experience the problems. It is a process that begins with modeling the behavior of potential users of a given innovation so that it can be adapted to their actual needs and be made more user-friendly.

(24) GobAPP, IDB's ideas lab, developed a platform in 2014 known as Gob247—the first virtual and collaborative open government manual to have been published. This platform has gathered the contributions, suggestions, and comments of government employees and civil society members in LAC on issues for debate.

7 Create an environment for innovation within public administration

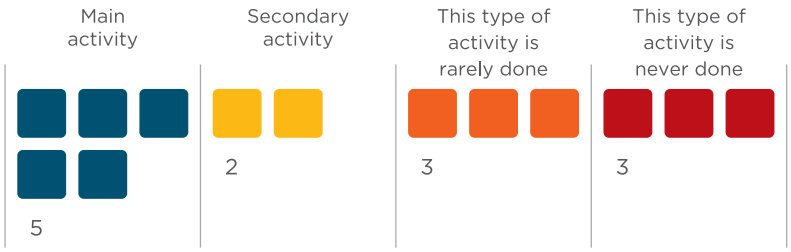
Not all innovation labs focus directly on innovation. Rather, some support other government agencies to stimulate their implementation of innovation activities or methods. In this case, the labs organize training activities for public employees, conduct research and disseminate design, experimentation, and co-creation methodologies. The innovation labs of LAC consider this objective to be near the top of their priorities (close to 91 percent of labs report so in the survey); and yet, a closely related activity—training of other government agencies—was not considered a top priority activity, having been rated as low or medium priority by half of the sample (Figure 2). Examples of training and other mechanisms for innovation methodology transfer are found in some labs of the region, such as LIS, LCMX, PENSA, and Laboratorio de Gobierno, the last of which operates the Experimenta program. In this case, public sector employees develop and spearhead innovation projects of their own selection with the help of labs and in the form of training.

Figure 2: Priority Level Assigned by Labs to Training for Government Agencies



Five of the 13 labs surveyed reported that one of their main activities is to provide incentives for innovation by other government agencies.

Figure 3: Allocation of Incentives to Innovation by Government Agencies



Box 2:

Design Thinking

Design thinking is a problem-solving methodology, developed at Stanford University and popularized among business communities and innovation labs around the world. Initially applied to industrial design projects, this methodology has included various fields, such as business, education, and citizen participation, as it has proved to be a useful tool in the innovation process. Since then, research and development teams of large companies around the world now adopt it or its components. Design thinking has five stages that seek to ensure, among other things, an adequate definition of the problem it aims to address, and to continually improve upon it through prototype testing.

1 -- Empathize

This stage involves learning about the users, their feelings, perspectives, and needs. To do this, a variety of qualitative research tools are applied, including (i) observing users in their day-to-day activities; (ii) engaging them in conversations, and asking "why" extensively to identify the underlying cause of issues, and (iii) combining observations and conversations by way of interactive activities, such as having users verbalize their thoughts in carrying out an action.

2 -- Define

This stage involves arriving at a clear and concise definition of the challenge, based on the context. By identifying the users, their needs, and the knowledge gained from them, better focus can be placed on the evaluation criteria for competing ideas, while also providing motivation for the team and their potential partners.

3 -- Ideate

Ideas are sought at this stage—as many and as broad as possible. Value judgment and the screening of ideas for prototypes should only be undertaken following unlimited brainstorming sessions. While at the definition stage, the intent is to eliminate distrust and identify a narrower range of users and issues, this phase seeks to generate as many ideas as possible. This is the time to combine rationality and creativity in search of potential solutions to the issues identified.

4 -- Prototype

Iterative generation of prototypes allows for a gradual approach to finding the final solution. Prototypes should be quick, inexpensive, and capable of generating user feedback. Prototypes can help answer questions about preliminary ideas from the perspective of potential users and colleagues. This stage allows one to "fail early, and fail cheap", compare different ideas, and encourage creativity along the way.

5 -- Test

Prototypes should be user-tested in real-life contexts as much as possible. The objectives of this stage include fine-tuning prototypes, finding final solutions, and continuing to learn about users.

The process is iterative, which involves going back to previous stages to refine the product. This implies, for example, that after testing, the prototype may need to be recreated, or that the problem or the users may need to be redefined.

Despite its sweeping popularity and its accepted value in empathy-related activities and prototype testing, design thinking has been questioned for standardizing a process with an excessive focus on ideation. Design thinking has also been critiqued as lacking the mechanisms to address the technical or regulatory restrictions that organizations face; rather, these issues tend to be left outside the process (Malbon, 2016).

Using design thinking for government innovation requires an adaptation of the methodology to the context from which innovation is sought, and an account of the factors, such as the multidisciplinary nature of public administration and the legal, administrative, and political restrictions of each case. Mechanisms for accomplishing this are building teams with expertise in different areas of public administration (technical, legal, administrative) and the incorporation of internal and external veto actors in co-creation processes that involve design thinking and, in particular, instances that focus on the needs of end users and prototype testing. "Empathize", "Prototype", and "Test" are the most appropriate stages at which to involve these stakeholders.

Source: Description based on Plattner (2010).

Note: Gratitude is expressed to Edgar Barroso, Sergio Moreno, and Enrique Rubio for their contribution to the reflections on the role of design thinking in the entities involved in public policy.

Innovation for Open Government

Government innovation labs in Latin America have unique characteristics that differentiate them from their peers in other regions. An analysis of recently established innovation labs in LAC shows that a majority of these have begun to emerge and evolve as players in the open government agenda in their respective countries or cities—fundamentally different from labs in other regions. Unlike the latter, labs in LAC are conceived as the main mechanism to enable the implementation of open government initiatives in public institutions—by defining a concept that may appear too abstract to government. It is therefore no wonder that the objectives and main working methodologies of these labs differ from those in other parts of the world.

> "Whenever we talk about innovation, we are focusing on citizen participation"
>
> **Luiz Guedes, Director, Lab.Rio**

This characteristic in Latin American labs reflects a broader phenomenon—the rise of open government policy. For several decades, the citizens of Latin America have lacked confidence in government institutions. The surveys conducted by Latinobarómetro in 2015 indicate that 33.3 percent of respondents have "low confidence" in their government, while 31.7 percent have "no confidence". Likewise, the public sectors in the region are perceived to be highly corrupt: the Corruption Perceptions Index score is 37 points (Transparency International, 2015), and 65.3 percent of respondents in LAC consider corruption to be a serious problem within the public sector (Global Corruption Barometer, 2013).

In recent years, this scenario has been compounded by the digital revolution, driven by the Internet, mobile phones, smart phones, and social networks. Consequently, there is increasing participation by civil society in areas of public debate with a demand for more transparency in the management and quality of public services. This represents a recent actuality that calls for the effective response of governments. Driven by ICT, digital citizens demand public institutions to create channels that enable them to participate in decision-making processes. As such, the Open Government Partnership that was launched in 2011 and has 15 LAC countries as members, promotes the creation of initiatives through citizen involvement.[25] In consultation with civil society organizations, the member countries of this partnership draft Action Plans for implementation within the following two years. The plans ouline specific commitments in five areas: (i) improve public services; (ii) strengthen public integrity; (iii) increase efficiency in public resource management; (iv) build safer communities, and (v) enhance corporate responsibility.[26]

(25) The OGP should be regarded as a platform for ordinary citizens, representatives of civil society organizations, academia, and the private sector to collaborate, as a team, with political authorities and public officials. The member countries of OGP are Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, the Dominican Republic, Trinidad and Tobago, and Uruguay. See http://www.opengovpartnership.org/.

(26) For an analysis of the commitments of and challenges faced by the Open Government Partnership in the region, refer to Ramírez-Alujas and Dassen (2016).

The notion of open government is a means to change the way in which public institutions make decisions and relate to the new citizen. The purpose of open government is to restore public confidence, build more robust democracies, improve government efficiency, effectiveness, and transparency in order to support the processes of government reform and the modernization of public services.

In this context, innovation labs in the region have emerged for the primary purpose of responding to this need to modernize and expand the range of interfaces with citizens. Frequent contributions of these labs are to encourage citizen involvement; adopt participatory methodologies that incorporate public service users into policy processes; and open up government data or introduce new digital means to engage with citizens. Seventy-five percent of the labs surveyed consider the creation of citizen participation mechanisms to be a high priority or a substantially high priority, and 66 percent consider open government data at the same levels of priority. A paradigmatic case in this regard is Buenos Aires, home to a lab that has played a key role in opening the data of the city administration.

The focus of these labs on open government is also reflected in their efforts in community building, collaboration, and establishing networks with nonpublic sector stakeholders.[27] This focus is clear from the data in Figure 1. The dialogue with lab directors has reflected some degree of consensus on the use of methodologies that rely more on informal work and more people-oriented approaches to building understanding among different stakeholders. Additionally, as previously mentioned, the high priority given to tasks such as the use of human-centered design methodology, is also key.

> "When we talk about the definition of public innovation, we are essentially talking about more participation, collaboration, and transparency"
>
> **Juan Felipe López, Executive Director, Laboratorio de Gobierno de Chile**

The same focus is reflected at other levels. At the institutional level, some of these labs were created in divisions that are closely linked to the open government agenda, or by public employees responsible for this area. A few cases in point include LINQ, which emerged within the context of open innovation plans; the innovation lab of Buenos Aires (General Directorate of Information and Open Government); LIS, which is part of the agency responsible for e-government and the information society; and Lab.Rio, which began by implementing projects for citizen participations and later became institutionalized as a lab.[28] This focus is also reflected in the narrative adopted by labs and their active participation in open government communities, such as the Open Government Partnership.

(27) Interviews with Silvia Da Rosa (June 1, 2016), Patricia Totorica (June 3, 2016), Rudy Bormann (June 2, 2016), and Carolina Pozo (June 2, 2016).

(28) Although Laboratory for the City of Mexico (CDMX) started out as an independent project under a new municipal mandate, it was structured as a "space for experimentation, for exploring other forms of collaboration with citizens, and for facilitating interaction with public institutions" (Gómez-Mont, 2015).

Case Study: Laboratorio de Innovación Social (Uruguay)

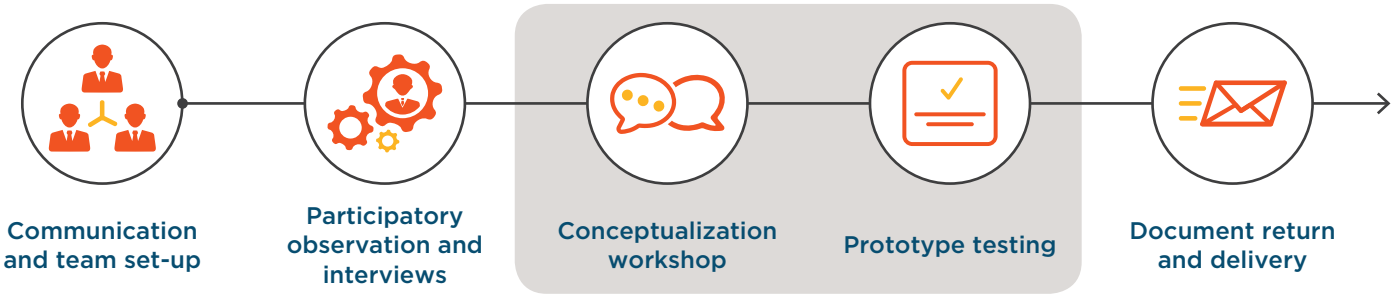
Laboratorio de Innovación Social (LIS) was established in 2015 to support the Agency for e-Government and Information Society (Agencia para el Gobierno Electrónico y Sociedad de la Información, or Agesic) in the implementation of a new presidential objective: 100 percent availability of administrative procedures and government services online and in digital format. The new objective was formalized through presidential decree in July, 2015[29] and Agesic was put in charge of its implementation.

In this context, LIS was officially established within Agesic to support government agencies in the digitalization and online availability of complex procedures. The methodology of the lab is based on the principles of human-centered design and co-creation of public value, with the aim of designing procedures from a user perspective and adapting the finished product to the user's needs and preferences. To achieve this, the lab conducts participatory observations, interviews, and co-creation activities that involve interactions between public employees responsible for administrative procedures and the users.

To ensure the effective implementation of its innovation methodology by other government agencies in Uruguay, the lab begins its work on each procedure by seeking the agency's commitment, from the top of the hierarchy and descending to the level of the public employees who are involved. Thus, the first point of contact with other government agencies is initiated by the senior executives of Agesic. As such, the institutional positioning of the lab has a fundamental advantage in that the lab is regarded as part of a cross-cutting agency that has networks with other government organizations, and is viewed as an effective and trustworthy support entity.[30] This allows the lab to work with other government institutions, build a shared narrative on the need for its innovations, and begin the collaborative process of development.

Once the lab obtains the commitment of the various institutions with which it will collaborate, it carries out participatory observation activities and conducts interviews with users and public employees to better understand the nature of the procedure in

Figure 4. The Innovation Process in the Social Innovation Lab



(29) Decree 184/015. Text available in Spanish at https://www.impo.com.uy/bases/decretos/184-2015.

(30) Interview with employees of the Ministry of Education and Culture (June 3, 2016); interview with the lab director and the coordinator for the online procedures program (May 30, 2016).

question and the user experience.[31]

The next stage relates to co-creation, opening up the space for discussion on procedure redesign. Known as a "conceptualization workshop", this phase involves those public employees responsible for each procedure, as well as the users. Activities are carried out for decontextualization, integration, and empathy to stimulate a discussion on the existing format of the procedure and the potential formats that will benefit stakeholders. In particular, decontextualization activities take stakeholders out of their regular position for interaction, allowing them to question their roles and reconsider the components of each procedure in a setting that is less influenced by the hierarchy and practices of the institution.[32]

The participation of stakeholders is a key component of lab methodology. Moreover, involving the users helps to adapt new procedures and services to the needs of the citizen, while taking into account their experiences. From the perspective of the government agency, to consider the opinion of employees contributes to the adaptation of innovations to the institutional process systems in place, thus increasing implementation effectiveness. Interviews with lab members and with representatives from one of the government institutions that received lab support—the Ministry of Housing in this case—has highlighted the importance of the lab product to adapt to the technical and procedural characteristics of each ministry. This requires a high level of flexibility on the part of the lab. In this case, part of the innovation process includes a test of the compatibility of new processes with the systems used by the ministry.

In conclusion, the process not only enables a higher degree of innovation adaptation, but it also fosters a sense of ownership among public employees who are

Box 3: **Human-Centered Design in the Social Innovation Lab**

Human-centered design is a problem-solving approach, in which the creative process begins with an in-depth and detailed understanding of the users' situation to build empathy. This is how it assures that the resultant "solutions" are in line with users' real needs. Immersion in the user experience is a fundamental component of this approach, as it is the primary way of ensuring the effective adoption of the products developed by the labs.

In these shared workshops with the Ministry of Industry and Mining, the lab discovered that users of a procedure to obtain mining exploitation permits strongly prefer doing so in person. The users are of a homogeneous profile, primarily older people who prefer lining up in a ministerial office to ensure that there are no irregularities in the allocation of mining exploitation rights. By going in person, users can ensure the institution in question follows the "first-come, first-served" rule, which is the main criteria for allocation.

The co-creation workshops helped identify these characteristics. Consequently, although incompatible with the current legislation on the procedure, the lab decided to follow the concept of human-centered design and maintained the in-person mode of the procedure, as the users continue to choose in-person service as their preferred mode of interaction with the State in this particular case.

(31) Likewise, the knowledge of each procedure is gathered from a quantitative analysis conducted by the lab prior to the operation of the procedure.

(32) Interviews with employees of the Ministry of Education and Culture (Ministerio de Educación y Cultura, or MEC) and the Ministry of Housing, Land Use, Transportation and the Environment (Ministerio de Vivienda, Ordenamiento Territorial, Transporte y Medio Ambiente, or MVOTMA) (June 3, 2016).

responsible for the procedures that were included in the workshops. This increases the chance for the new system to effectively be implemented and operate sustainably over time.[33] Another positive externality of the co-creation instance relates to the perception of citizens that they are involved in public decision making.[34]

After the conceptualization workshop, the lab creates prototypes, which it then validates in a second workshop. The resulting process flow chart of the procedure is used in the modeling phase, and subsequently in an adoption phase, during which other teams at Agesic (i.e., legal and development areas) and computer programming companies come into play. To ensure effective implementation of the components of the procedure, the lab provides training to government agencies. This takes place after the design phase and addresses the issues of system use and change management.

The lab began with a pilot project to digitalize and make available online the first of a series of procedures of various government agencies, and now develops networks with the other government agencies. These networks are key to the effective implementation by such agencies, and can help labs publicize their efforts and advocate the usefulness of their work.[35] Interviews with lab members and employees of government agencies suggest that the good reputation gained through the pilot project was fundamental to the adoption of the lab's methodology by participating institutions, and can encourage new agencies to work in tandem with the lab. So far, 33 procedures of 10 government agencies have been redesigned, with the participation of 154 public employees and 83 citizens in 39 workshops.

In addition to its recent progress, the lab can also overcome certain institutional deficiencies, as it has a simple setup of a five-person team with a place to work. In the absence of an administrative act to formalize it or an institutional structure to designate specific officials and skills, the IDB launched a technical cooperation project to provide technical and financial support for its institutionalization as a lab.[36] Through the project, IDB provided support to Agesic, with the aim of creating a regulatory framework that can determine its institutional structure, define its functions, and allocate human resources.

Reflections on LIS in Uruguay

In line with the trend observed at a regional level, LIS has emerged as part of an agenda that strives for open government in the country. Specifically, LIS has been launched with the objective of creating new digital interfaces between the State and its citizens, and of facilitating access to procedures and online services. The principles of open government are also reflected in the lab's methodology, which is based on human-centered design and on instances of public-private co-creation to encourage citizen participation in the design of public services.

(33) Interviews with users and government employees (June 3, 2016).

(34) This was reflected in an interview with two users who participated in the lab workshops. Their disability-related mobility subsidy claims had been rejected for two decades. "It was great that the lab opened. Nico was elated because he felt that there were young people who understand him, listen to him, and don't think he's imprudent."

(35) Interview with employees of the Ministry of Education and Culture (MEC) (June 3, 2016); interview with the lab director and coordinator of the online procedures program (June 30, 2016).

(36) The documents of the Technical Cooperation Project UR-T1122 are available at: http://www.iadb.org/es/proyectos/project-information-page,1303.html?id=UR-T1122.

The potential of the lab to contribute to the core issues of ministerial agencies is clearly defined by a legal mandate requiring it to focus on digitalization and making procedures available online. Nevertheless, the lab's effectiveness lies in the clear definition of its objective. Thanks to a combination of contextual factors, the lab positions itself as a support mechanism to the rest of the State's institutions in fulfilling a key presidential objective.[37]

The effectiveness of the lab, or of the adoption of its innovations by other government agencies, depends on the existence of networks between the institution to which it belongs (Agesic) and the other government entities. These networks are characterized by trust and by a perception that Agesic provides important support for state modernization. This highlights the significance of the institutional positioning of the lab, which gives it access to the decision makers in the other government agencies.

In this regard, thanks to the first pilot project with other institutions, the lab has caught the attention of various government stakeholders. Subsequently, the lab has been able to leverage the understanding of its usefulness towards developing its own networks.

As mentioned by almost all respondents, there is a third factor for the lab's effectiveness: leadership support in its many aspects. In one case, the support comes from the Office of the President, whose decision to digitalize 100 percent of the procedures was a highly important message for the public employees in charge of this work. This framework provides a constructive environment for advocating the lab's work vis-à-vis other government agencies and within Agesic itself.[38] Furthermore, the employees of various government agencies see leadership support from their institutions as key to making headway in the implementation of innovations and/or to committing part of their resources to developing innovations.[39]

From a governmental and a ministerial level standpoint, leadership support has played a more significant role in the initial phases of the lab and of its projects. After the first pilot program, the working methods of the lab were made known to most of the national government agencies, and the network and credibility of the lab began to grow.

In addition, the legal framework—defined in the decree on online procedures— was conducive to the management of the lab. In the future, giving additional legal prerogatives to the lab will facilitate the expansion of its faculties to cover innovations other than making procedures available online. These may include experimentation practices within the State and promoting innovation in open

(37) A similar example, albeit with characteristics of a government center, is Malaysia's PEMANDU, whose objective is to implement the key points on the presidential agenda. Although the lab in Uruguay has been focusing exclusively on the issue of online procedures, there are conceptual similarities, as its role is to fulfill a key presidential objective.

(38) When asked how she began the digitalization work, an employee of the Ministry of Transportation said, "the president announced a mandate (in his inauguration speech) that all administrative procedures must be made available online" (interview conducted on June 3, 2016). Similarly, the dialogue with the employees of Agesic stressed, on several occasions, the importance of complying with the presidential objective and having all administrative procedures online.

(39) Interviews with employees of MVOTMA and MEC have highlighted the importance of leaders to show political will for the digitalization of procedures and for the use of the lab methodology in other instances. An example of the latter can be found in MEC, where one of the directors proposed using the methodologies of co-creation and decontextualization in the management committee of the ministry at the time a new minister—who was more open to this type of initiatives—was appointed (interviews conducted on June 3, 2016.)

data use and big data.

As shown by the working methodology of the lab, involving citizens in the design process can help improve the interfaces between the State and its citizens and adapt these interfaces to the latter's needs. Likewise, involving public employees in the process can ensure compatibility of innovations with the organizational culture, processes, and information technology systems of the ministry in charge of the procedure. Additionally, the participatory process inspires a greater sense of ownership among public employees, and makes citizens feel included. The lab neither conducts randomized experiments nor does it have strong support in data analytics to generate innovations. As stated before, here lies a difference with innovation labs of other regions and others such as PENSA and Rio Operations Center, which are also discussed in this study.

The innovation methodologies used to digitalize and make procedures available online have been replicated by other government organizations, including for tasks that are different than the process of procedure design.[40] In this regard, the lab has established itself as an effective actor in diffusing innovation methodologies throughout the central government.

In line with the point made in the previous section, although the Social Innovation Lab is still in the early stages of development, it is regarded as an entity whose objectives and activities are more closely linked to the principles of open government than to the general characteristics of innovation labs in other regions. This is reflected in the lab's objective, which is to enable the State and its citizens to interact with each other over the Internet. This is also reflected in the co-creation activities in terms of participatory citizenship and in its multidisciplinary team that relies primarily on skills based on user experience, accessibility, process redesign, and human-centered design.

Case Study: Lab.Rio, PENSA, and Rio Operations Center (Rio de Janeiro)

In June 2013, a wave of protests in Brazil made it clear to the political class that it was time to rethink the relationship between the State and its citizenry. In response to citizens' discontent, the municipal government of Rio de Janeiro carried out projects to take advantage of the technological progress and craft new mechanisms of interaction with civil society.[41] The first of these mechanisms, known as Ágora Rio, was a platform for citizen proposals and open debate on public policies to manage the legacy of the Olympic Games.

After this first experience, the municipal government established an innovation lab, Lab.Rio, in order to scale up and continue with the projects on citizen participation and public innovation. Since then, Lab.Rio has carried out 11 projects, most of which focus on bringing the State closer to civil society, creating mechanisms of citizen participation, conducting digital

(40) Today, MEC has the lab's methodology in place in the management committee of the ministry. Since then, MEC has launched an institutional restructuring process. As a result of an ideas contest, the Central Bank of Uruguay also has sought the support of the lab in the co-creation of innovation. In both cases, the lab has provided support in the replication of their methodology.

(41) Interview with Luiz Guedes (May 7, 2016).

public debate on public policy, and engaging civil society in the day-to-day work of the government. Out of its 11 projects, seven were developed for implementation by other government agencies, and four of them were adopted by secretariats. The lab launched pilot programs to test three of these projects.

Currently, the lab has a staff of eight members with expertise in the fields of design, law, computer programming, and communications. The profile of the staff includes experience in the public and private sectors, NGOs, and academia. The lab has an annual budget of US$185,000 and is fully funded by the Treasury.

Lab.Rio has mainly focused on promoting citizen participation in public policy projects. In this regard, the lab's initiatives can be classified on a scale of participation with stages of information, consultation, engagement, collaboration, and empowerment. So far, more than 165,000 people have interacted with the lab through its various platforms.[42]

Public innovation management in Rio de Janeiro is split between government agencies with different roles. In addition to Lab.Rio, there are two other entities: PENSA Salas de Ideas and Rio Operations Center. These are in charge of data analysis projects to monitor public problems. Unlike Lab.Rio and the majority of innovation labs in the region, these entities focus less on open government initiatives and more on data use for management decision making in municipal government agencies.

PENSA Sala de Ideas (PENSA) focuses on using big data for research and the monitoring of relevant issues in city management, by cross-referencing data from various sources within and outside of the governmen.[43] Institutionally speaking, PENSA is part of Rio de Janeiro's cabinet. With access to 400 terabytes of raw data from the municipal government (Schreiner, 2016), PENSA undertakes strategic planning, research, and public policy development forecasting. So far, PENSA has carried out more than 40 innovation projects, 10 of which were created for implementation by other municipal government agencies. PENSA's staff of five have educational background in environmental engineering, social sciences, physics, and data science; all have previous experience in academia, and some have worked in the public sector, private sector, or in NGOs.

Similar to PENSA, Rio Operations Center manages data projects for the city. Rio Operations Center centralizes the bulk of the information on the city, including databases from external sources, thanks to alliances with academia and companies. In recent years, Rio has forged alliances

Box 4: **The Ágora Rio Challenge: Citizen Participation in Digital Media**

The Ágora Rio challenge is a citizen participation initiative that operates through an online platform. In its latest cycle, the issues proposed have focused on the discussion of urban mobility. As a first step, a call for proposals was announced for areas of public transportation, walking, motorized private transportation, and nonmotorized transportation.

Subsequently, an executive board, consisting of the members of the municipal government and mobility experts from civil society, reviewed the 460 ideas received and narrowed them down to 20. These proposals were then published through an online platform, receiving more than 1,400 comments and 18,300 votes from citizens.

(42) See Lab.Rio (2015).

(43) Decree No. 37.215 of 2013, Rio de Janeiro.

for data access with the Massachusetts Institute of Technology to obtain metadata on telecommunications. It also has established an alliance with Waze (Google) to exchange information on traffic and motor vehicle accidents in Rio.

Rio Operations Center was established with the initial objective of providing a space for centralized municipal management during crises and natural disasters. In light of this, Rio Operations Center consists of more than 30 local entities and public service suppliers (Schreiner, 2016:32).[44] Its institutional structure consists of four units: technology, resilience, infrastructure, and operations.

PENSA and Rio Operations Center work as interlocutors between a variety of public and private entities. The projects have focused on many areas such as urban mobility, natural disaster management, dengue reduction, and citizen security. In these cases, coordination with other secretariats is vital for the development of the innovations. Centralized data management offers advantages, such as efficient use of technical resources and human capital, as well as a broader and more dynamic view on management challenges.[45] Furthermore, contact with the secretariats is key to gaining access to specialized knowledge in each area. In many cases, the adoption of the innovations for management-related data use by other secretariats of the municipal government entails organizational change in terms of decision-making processes.

To ensure interoperability among various government agencies, the municipal government relies on an information platform called GeoPortal, through which georeferenced data is shared with public institutions and with NGO partner.[46] The platform is connected to various data sources and provides various services to users. Some of the data is automatically uploaded to the platform, including Waze alerts and the location of buses and vehicles of government agencies; electrical transformers; and rain gauges. The integrated system allows for data input by other stakeholders, coordination of operative procedures among government agencies, task assignment, and metadata generation (Schreiner, 2016).

Through these entities, the city of Rio has set up new mechanisms to connect with its citizens. Besides the participation platforms and public debates launched by the lab, Rio Operations Center communicates with citizens through data release

Box 5: **Reducing Dengue in Rio de Janeiro**

PENSA's big data analysis has helped reduce the dengue infection rate by 98 percent and has trimmed the total expenditure from US$13 million in 2013 to US$300,000 in 2014. The centralization of hospital data has facilitated the georeferencing of dengue. As a result, some areas of the city were declared priority, and cleaning and resident communication programs were directed to these areas. In this case, data centralization was complemented by social network monitoring to anticipate, up to seven days in advance, trends in official records through analyzing "mentions" on Twitter.

(44) Rio Operations Center also coordinates with federal and state government agencies to manage issues in the fields of security, water, energy, transportation, and health.

(45) As indicated by the coordinator between PENSA, Rio Operations Center, and the transportation company of Rio, the outside perspective of the first two has allowed the latter to understand the impact of factors on transportation that were not considered at first instance.

(46) This is especially useful since many local government assets are georeferenced, such as sensors, cameras, traffic police, traffic lights, vehicles, mobile phones, schools, hospitals, among others (Ramírez-Alujas and Dassen, 2016).

and through alerts of weather conditions and traffic problems. The latter relies on Twitter Alert, a function of the social media to send alerts among users, as well as Facebook posts and direct communication with journalists.

While none of the organizations discussed here has structured innovation processes, their working methods differ widely. PENSA and Rio Operations Center take a data-based approach, which begins with exploring the correlations between various data. Next, they create projects based on insights gained through data analysis.[47] In addition, Lab.Rio focuses on implementing citizen participation platforms to address pre-selected issues. This approach mobilizes citizens to generate proposals and has a different objective than that of the two previous entities, as it focuses more on establishing channels of dialogue between government and citizen.[48]

Lab.Rio, PENSA, and Rio Operations Center benefit from strong leadership support. Lab.Rio is owned by the municipal government of Rio de Janeiro, and has easy access to the Mayor, who initially advocated for its creation. The Mayor has played a key role in giving the lab legitimacy vis-à-vis the other secretariats of the city, and in enabling initial citizen participation experiences, especially in the first few months following the lab's creation. Likewise, as indicated by the lab director, it would be impossible to coordinate the work with more than one secretariat for a single project, let alone integrate citizen influence into the decision making process of these secretariats without the support of the government leadership.

The case is similar for the two other labs. Respondents have highlighted the Mayor's support as key to (i) ensuring access to the data necessary for the lab's research and innovations, and (ii) the use of the data and panels developed by PENSA and Rio Operations Center for the decision-making process.

Leadership support has been key in the establishment of these labs and for their positioning vis-à-vis other government agencies. Since then, with the building of networks and the value placed on these labs, based on specific experiences, they now play a more prevalent role in effectively interacting with other government agencies.

The network-building efforts of Lab. Rio, PENSA, and Rio Operations Center

Box 6: **Intelligent Transportation Systems**

Traffic jams cost 9 percent of the economic output of Rio de Janeiro (equivalent to approximately US$5.4 million). By identifying the relationship between the locations of people's homes and their places where they usually go, PENSA predicted that moving the shopping center to another part of the city would lead to a reduction in the density in traffic. A smart routing model was used to measure traffic route density (volume/capacity). The model georeferenced people's movements based on mobile phone information, using data anonymized by telecommunication companies. This evidence-based analysis provided input into a 10-year prefectural plan to move the dynamic city center to another part of the city.

(47) Monitoring and coordination in crisis management, which are among the roles played by the Rio Operations Center, imply the use of another type of procedure not included in this case, since it does not directly involve innovation activities.
(48) During the course of this study, Lab.Rio designed an innovation project that excluded the citizen participation component. This project targets the training of employees in municipal government secretariats on data visualization. Otherwise, all other Lab.Rio projects center on the participation of civil society as the principle innovation methodology.

mainly focus on encouraging the participation of middle- and entry-level employees of technical areas,[49] since these collaborate on a daily basis and are responsible for many of the management decisions and tasks. Contact with these stakeholders is fundamental for each project to benefit from the area-specific expertise that each government agency can offer, and for innovation to be adapted to agency processes.

To secure support and enable work to be effected collaboratively, Lab.Rio builds widespread engagement with these public employees while seeking —by way of surveys— their participation in future projects. PENSA, however, seeks alliances with other secretariats so as to introduce new ideas for adaptation in government institutions and to generate internal support. For this, PENSA mainly relies on pilot projects.

In conclusion, the innovation labs of Rio de Janeiro showcase a myriad of innovation efforts, based on the different approaches. On the one hand, Lab.Rio is committed to opening the channels for citizen participation in government processes. On the other hand, PENSA and the Rio Operations Center focus more on data analyses for strategic city planning and for a holistic approach to problem solving. The support of all three labs by the mayor reflects the kind of municipal leadership that innovation requires to create more open public management, increased citizen participation, and greater use of data.

Box 7: **Big Data and Road Safety**

Data analysis has allowed the city of Rio to manage traffic accidents. Users are able to obtain accident reports through a data exchange application between the city of Rio and Waze. By cross-referencing data with information on the geographic distribution of municipal guards (each of whom has a global positioning system, or GPS), PENSA has identified a trend whereby the peak in accidents by geographic zone came before the peak in guard presence. Thus, a reactive road safety management methodology was identified instead of a preventive one. This information was then used to determine the distribution of cameras to control speed.

(49) Nevertheless, Lab.Rio submits biannual reports to the secretariats to inform them of its recent initiatives.

Promoting Lab Effectiveness: Focus, Scale, and Sustainability

While labs have been able to overcome many of the challenges that are faced by public sector innovation, some may be unable to scale up, especially when they lack a particular expertise or in the absence of robust networks that include other government agencies.[50] Because the development of innovations occurs in a rather closed environment and innovations are implemented by other government agencies, it can be difficult to ensure that they are effectively adopted and sustained over time.

Since the initial stages of innovation development, many labs find it a challenge to be considered for crucial issues in other agencies' agendas; rather, in many cases their interventions are left to issues considered marginal or of less important by them.[51] The advancement of an innovation from the lab requires significant collaboration with other government agencies, essential to (i) identify its opportunities and requirements, (ii) further develop it (in which case, knowledge of the entity's existing processes is necessary or relevant data should be obtained), and (iii) ensure that it is effectively and sustainably adopted.

This section analyzes the ways in which labs are able to influence issues that are central to the agenda of traditional public entities. It also discusses the ingredients that will ensure that innovations are adopted successfully by government agencies, and be sustained and updated adequately over time.

The essence of scale is fundamental to government innovation. While innovation in the private sector usually generates high returns prior to replication by competing companies, innovation in the public sector usually has returns that gradually increase as they are adopted by other institutions within an administration (Bloch and Bugge, 2012). Nevertheless, the diffusion of innovations that originate from a lab may experience variances in the level of incentives in each entity (Bloch and Bugge, 2012). In LAC, labs are a recent phenomenon and, unlike in other regions, experimentation and co-creation are new to the management culture. This has led to significant challenges for labs to evolve into a key pillar for state modernization.

(50) Pablo Cerdeira of Lab of Rio de Janeiro stated: "This project has not yet been completely adopted by the various agencies of the municipal government. We would need a mini Lab.Rio, or at least permanent representatives of it in the secretariats, which have more contact with the population".

(51) One of the lab directors stated, "Latin American labs are marginalized in terms of their influence and validation. They are still at the periphery of governments. In other places, however, proposals of restructuring of the State have to go through the labs."

Infographic 4: Amount of Innovations Developed by each Lab for other Government Agencies and the Rate of Adoption of Innovations

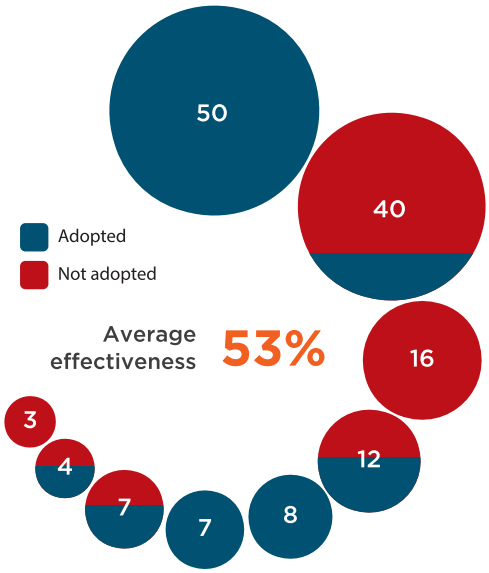


Table 1: Factors that Determine the Implementation Potential of Lab Innovations

Political and institutional factors	Policy networks
	Leadership support
Factors related to working methodology	Technical adaptation to the existing capacities of target government agencies
	Instances of value demonstration and shared meaning

The survey and the case studies of Uruguay and Rio de Janeiro identify two factor groups that determine the potential of labs to mainstream their innovations and ensure they are implemented successfully and sustainably (Table 1).

The first group consists of political and institutional factors. The fact that most innovation labs do not have their operational responsibilities over a particular policy area implies that their capacity to intervene in the areas overseen by other government agencies is determined by their political capital. Field work in this area has demonstrated that the most important sources of capital are the support provided by government leadership and policy networks. Without these, labs become sidelined from the government agenda, making it difficult to implement innovation methodologies in various areas of public administration.

The institutional positioning of labs and an appropriate legal framework will mitigate the impact of marginalization, in particular when labs are assigned specific capacities by way of regulation, or if they become part of a government agency responsible for its own operation. This has been demonstrated in the case of LIS, whose access to other government agencies was a result of factors such as its focus on the redesign of administrative procedures and its institutional positioning within Agesic.[52] Likewise, the co-creation process and the governance structure of the Laboratorio de Gobierno de Chile have similar advantages.

The second group of factors that affect the success of labs depends on working methodologies. The survey and case studies show the importance of (i) creating opportunities for labs to demonstrate the benefits of their innovations and building a

(52) Labs that have benefited from an institutional positioning within public entities that manage an operational agenda within one area include LabProdam, which is part of the technology company of the municipal government of São Paulo, and GobApp, the ideas lab of the Institutional Capacity of the State Division of IDB.

shared meaning around them; and (ii) customizing innovations to meet institutional requirements, based on the capacity of government agencies to adopt them. The potential for scalability and sustainability of lab innovations increases when these working methodologies are taken into account.

Leadership Support

These case studies point to the importance of liaising with public sector leaders to persuade commitment. This is important, especially at the beginning, when lab work may be little known to the other government agencies. The role of each lab and its ability to promote innovation depend largely on the function assigned to it by the leadership.

Leadership endorsement works by way of formal and informal channels. Examples of formal channels, discussed in this paper, include the particular decree —as a presidential objective— that placed Agesic at the helm of ensuring that government administrative procedures become available online. The Laboratorio de Gobierno de Chile is another case in point, the lab having been created at the behest of the President. In this case, the lab's capacities were defined and its staff members were recruited by way of a process that was specific, meritocratic, transparent, and valid. Government leadership also supports lab management by way of informal channels, as in the cases of Lab.Rio, PENSA, and Rio Operations Center of Rio de Janeiro, which have gained distinction based on the strong support from the Mayor.

Similarly, at an intra-institutional level, ministerial support of a lab initiative can generate the support of lower-ranking officials, and provide a space for policy entrepreneurship support. For instance, a director of the Management Committee of Uruguay's Ministry of Education and Culture considered adopting LIS' methodologies of co-creation and decontextualization in view of the fact that a newly appointed minister was more likely to be interested in them. Likewise, in cases when the main contribution of labs relates to the use of data to streamline management, it is essential to ensure that the target organization is able to provide ongoing support when advocating change within its data-based decision making.[54]

Policy Networks

As summarized in the previous sections, the literature has stressed the importance of policy networks to implement and diffuse innovations within the public sector. This allows labs to (i) generate new ideas from external sources; (ii) strategically adapt proposals to the interests and concerns of key stakeholders; (iii) generate support for initiatives, and (iv) give credibility to those who developed the innovations.

Networks facilitate the strategic exchange of information on public agenda priorities with relevant key stakeholders. Knowledge of the incentive structure of peers in other public entities will provide lab staff the capacity to identify opportunities to develop or introduce innovation.

(53) Interviews with Pablo Collada (May 4, 2016) and Juan Felipe López (July 4, 2016).

(54) Interview with Pablo Cerdeira (July 13, 2016).

Establishing the concerns of these entities also translates into politically fine-tuned proposals and a better chance of success. This is especially important if we consider that the lack of government agency political support has been highlighted by the labs as one of the main reasons for failing to scale up their innovations. In addition, 75 percent of labs state that they do not have clearly defined areas of interest; rather, these are defined purely by association with the agency they support. It is essential, therefore, that initial backing be provided by other government stakeholders.[55]

A former staff member of a municipal innovation lab has indicated:

> "People who are only in the technical and innovative field speak a different language, but you need a political language if you want to do public innovation. The ability to get political support for a lab accounts for about half of its success (...) In many cases something doesn't work because person A is arguing with person B, and they have different political views. It takes a lot of wit, intuition, and skills to navigate these political groups and have an impact on them."[56]

Moreover, networks with middle- and low-ranking officials are essential to gain access to relevant data and to obtain an in-depth knowledge of processes. This is important given that 77 percent of the labs surveyed obtain their information and data from other government units. Despite recent progress in some countries in LAC on open data regulation, the availability of data still largely falls on the willingness of relevant employees. This implies that a staff change could potentially affect information accessibility.[57] The above is an example of the support received by labs from middle-ranking stakeholders as a result of having built networks.[58]

The two case studies showed the network building process not only with the political leadership, but also with public sector middle- and lower-ranking employees, given that labs' initiatives significantly depend on their willingness to collaborate.[59] The efforts made by PENSA, Lab.Rio, and LIS to seek internal allies committed to applying their methodologies highlights its importance.[60]

Lastly, networks are able to generate the necessary support to successfully and sustainably adopt innovation. The bonds of trust that have been fomented between stakeholders enhance the credibility of the lab team and facilitate the shared meaning of the innovation in case.[61] Nevertheless, in the absence of such bonds, there

(55) In other cases, such as the Laboratorio de Gobierno de Chile, strategic information on management priorities does not necessarily emanate from partners in joint projects. This lab obtains the information through a multisectoral governance structure within its Board of Directors.

(56) Interview with Pablo Collada (May 4, 2016).

(57) Interviews with Pablo Collada (May 4, 2016), Romina Colman (May 13, 2016), and Carolina Pozo (June 2, 2016).

(58) Interviews with Pablo Cerdeira (May 4, 2016), Darío Bizzo (May 4, 2016), André Oremond (May 4, 2016), Carolina Pozo (June 2, 2016), and Rudy Bormann (June 2, 2016).

(59) This implies, in many cases, being confronted by the egos and fears of some public employees in that they may be removed from a particular role or lose importance within a process. The labs in the case studies clarified that innovations would save time for public employees and enable them to dedicate themselves to more valuable tasks.

(60) The director of PENSA stated, "sometimes I need to go talk to them through an insider who understands the value of working with data, and convince them that this can improve their work. I tell them to not look at it as a loss of control over their agenda, but as a support to their work. It is very important to focus on these points when trying to convince them."

(61) It is clear from the initial experience with its pilot project that LIS was able to leverage the trust of the other public institutions.

are methods (e.g., pilot projects) that will enable the lab to build somewhat trusting liaison.[62]

The most relevant aspects of a lab's network are (i) the levels to which actors share strategic information and data, (ii) the degree of trust between its members, and (iii) the proximity of perspectives in terms of social issues. Building this type of links requires skill and the ability to navigate the political arena. Leaders of public innovation labs can benefit from their previous experience in the public sector, their abilities to generate support and communicate effectively through the appropriate messages, and their capacity to interpret political, budget, and other motivations.

Platforms for Value Demonstration and Shared Meaning

Part of the literature on the diffusion of innovation relates to the capacity to improve efficiency beyond an existing level, causing and demonstrating the creation of a relative advantage (Korteland and Bekkers, 2007; Greenhalg et. al., 2004). From this operational perspective, known as functionalism, it is important for a lab to be able to test innovations and demonstrate results. A measurement of this in the public sector, however, is not understood in terms of only efficiency and effectiveness. There are other factors that should be taken into account, such as the influence among the stakeholders, symbolisms, and organizational culture. It is essential to consider the interpretations of the adopting stakeholders.

From this perspective, the decision-making process by a particular stakeholder, group, or institution can depend on their respective role within the broader network in which they find themselves and with which they share—to varying degrees—a particular management culture and a general view of society (Korteland and Bekkers, 2007). This perspective is known as constructivism, and it assumes that the way in which an innovation can be interpreted is the result of various factors, such as how innovation is framed and defended, the credibility of the team that has introduced it, and the language used to present it (Korteland and Bekkers, 2007; Greenhalg et. al, 2004).

The effective implementation of lab innovations requires a complex, non-linear process of communication, learning, and mutual adaptation between the lab and a team from another government agency that is capable of adopting the innovation and of collaborating in its development. An exchange of information among the relevant government institutions will reduce the uncertainty of a particular innovation, facilitate its technical and political adaptation, and add to its relevance for the target institution (Korteland and Bekkers,

> "It's important to make it clear for them that not having administrative procedures online is a problem; that the status quo is a problem"
>
> **Silvia Da Rosa, Director of Social Innovation Lab, Uruguay**

(62) Interviews with Silvia Da Rosa (May 30, 2016), Karime Ruibal (May 30, 2016), Pablo Cerdeira (April 13, 2016), André Oremond (April 13, 2016), and Darío Bizzo (April 13, 2016).

2007). The scalability and sustainability of innovations depend on the mechanisms that labs put in place to demonstrate their value and to shape the way in which they are understood by other public institutions.

Consultations with labs in the region and with the public institutions for which the innovations were designed have highlighted the importance of a shared meaning.[63] The question in the survey relating to the reason why government agencies do not effectively adopt a number of their innovations brought to light that the way the leadership understands each initiative is a notable factor.

> "Success may not come about if those owners of the topic are not convinced."
>
> **Juan Felipe López, Executive director, Laboratorio de Gobierno, Chile**

To overcome this, labs in Latin America rely primarily on pilot projects. This not only allows for testing in controlled environments; it also can result in a rapid success at low risk, demonstrate the value of a lab's management, and gain stakeholder confidence. Pilot projects lead to discussions on the role of labs, and build their reputation. The majority of survey respondents highlighted the importance of these activities.

Co-creation can also serve this purpose. The scalability and sustainability potential of an innovation significantly increases when key stakeholders are involved in its development from inception. As previously discussed with regard to Uruguay, this not only enables the adaptation of innovation to the limitations of various stakeholders; it also creates a sense of ownership for those who are able to implement them effectively. All labs surveyed reported that they worked together with other government agencies during the innovation design stage.[64]

As mentioned previously, the majority of labs in LAC conduct neither impact evaluations nor randomized experiments that allow for rigorous, small-scale testing of results. This not only illustrates that they have fewer tools to demonstrate the effectiveness of their proposals; it also hinders their ability to discover and test new management alternatives.[65]

In light of the theoretical discussion at the beginning of this section, the experiences gathered from the field indicate that both approaches —functionalism and constructivism—have a certain explanatory power over the scalability and sustainability of lab innovation. Lab staff and their government counterparts have stressed the importance of not only demonstrating the value addition of labs and their initiatives, but also building their credibility and adapting them to the incentives, vision, and organizational culture of other stakeholders and institutions.

(63) Interviews with André Oremond (April 13, 2016), employees of MEC and MVOTMA (June 3, 2016), and Juan Felipe López (July 4, 2016). Survey of lab directors and interviews conducted on May 30, 2016.

(64) Other activities, such as pilot project testing and project implementation, had comparatively lower—although still high—implementation rates: 83% and 75% of labs reported conducting these activities, respectively.

(65) The second section provides examples of labs that carry out this type of activity in other regions of the world, including Behavioural Insights Team, Barcelona Urban Lab, Social and Behavioral Sciences Team, and La 27e Región.

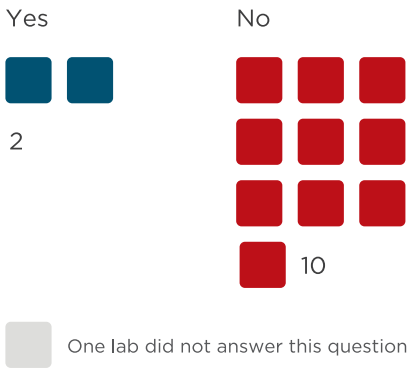
Technical Adaptation of Innovations to Existing Capacities

According to the survey of directors of Latin American innovation labs, most regard the objectives of "incorporate technology into public administration" and "modernize public administrative processes" to be of high or extremely high priority. However, a relevant reason for failure brought up by surveyed labs was the technical complexity of innovations and insufficient technical capacity of the target institutions for which they are developed. This is a challenge for labs in their efforts to maintain the balance between pushing the technological capacity frontier of the public sector and to ensure that their innovations are effectively adopted and sustained over time.

More precisely, the scalability of innovation depends on the technical flexibility of labs and their capacity to adapt to the institutional information technology processes and systems of the agencies they aim to support. This is clear in the case of Uruguay, where the redesign process includes the verification of innovation compatibility with the systems of the ministries it seeks to support.

Likewise, effective and sustainable innovations require adequately trained employees to operate them. Some labs, such as LIS, Rio Operations Center, and the Laboratorio de Gobierno de Chile, address this challenge by providing direct training to government employees. From the technological angle, the sustainability of innovations depends on this training and on the frequency in which the product needs to be updated in accordance with new requisites. In both cases, labs can facilitate the process by offering training, ongoing support, and timely technological updates to their innovations. The majority of labs in LAC do not provide ongoing support to the organizations once innovations have been implemented.

Figure 5: Ongoing Support Lab Mechanisms for Target Institutions Once Innovations Are Implemented



Conclusions and Recommendations

Latin America is undergoing a period that is marked by technological change and the new demands of civil society. As such, governments need to adapt accordingly, with strategies for modernization and openness that require a high level of innovation. Hence, the methodologies and the institutional actors responsible for promoting these strategies play a key role in defining the region's future institutional quality, and should be understood in their own light. This paper, therefore, discusses the contribution of government innovation labs in Latin America to perform this role, the challenges they face, and the ways in which they can improve their chances of success.

Labs of Latin America have begun to establish themselves as supportive of other public institutions in carrying out their innovation projects: they absorb the inherent risks of innovation and contribute to the methodological know-how of co-creation, human-centered design, digital media management and, to a lesser extent, data science. The labs surveyed all have multidisciplinary staff, at different levels of experience within the public sector, private sector, academia, and NGOs, respectively. More specific conclusions and recommendations of the study are as follows:

1 Innovation labs in Latin America are set to implement the open government agenda

The principles of open government constitute the ethos of many recently established labs in the region, which set them apart from those in other parts of the world. The primary mission of many of these labs is to help states adapt to a new form of citizenship and to new methods of collaborative management, with more citizen participation and greater transparency; and build channels for dialogue between the government and the citizens while taking advantage of opportunities created by new technologies. Hence, most of the labs discussed in this paper focus on the points of contact between the state and its citizens, in the form of open data release projects, process redesign, digitalization of administrative procedures, or creation of instances for citizen collaboration.[66] Although this type of activity has an inherent value, governments in Latin America are able to benefit more from innovation labs if the latter's work is also applied to the management areas that are not directly related to the relationship between the state and citizens. Problems such as energy shortage or transportation system collapses can be addressed from a management perspective,

(66) These can include, for example, co-designing applications that allow for easy access to useful information, or digitalizing administrative procedures and public services.

or with methodologies that do not necessarily include a call for citizen proposals. In addition, it is important to avoid that calling for citizen proposals to develop solutions to public policy problems becomes the only response to a government deficit in trained staff. Working on open government issues is good for the state, but it should not be the only action area of innovation labs.

2 The need to experiment and the tolerance of failure

Labs in Latin America rarely conduct randomized experiments or implement methodologies for testing their innovations in controlled environments or rigorously evaluate their results. Current legislation neither encourages innovation nor tolerates error. For example, there are no mechanisms to exclude experimental activities from sanctions if something goes wrong. Remaining with tried-and-true formulas would be an easy way of policy making, but not necessarily innovative. The experience of innovation labs in other regions has shown that the adoption of rigorous testing methodologies can bring opportunities for labs to gain credibility and establish themselves as key agencies in state modernization and reform. After all, the rationale for innovation labs to be able to take higher risks is their use of specific methods that allow them to know the impact of their initiatives before scaling them. By further developing these capacities, labs can strengthen their role as agencies that are able to support other government institutions in the management of risky projects and policy change. Along these lines, valuable next steps could include (i) building up lab capacities in experimental design, impact evaluation, and behavioral economics, and (ii) ensuring there is room for failure within the legal framework and institutional practice.

3 The importance of working with data

The increase in the quantity of data and the rapid growth of data processing capacity enables new methods to solve public problems, based on descriptive, predictive, or prescriptive data analyses. As illustrated in the case of PENSA in Rio de Janeiro, innovation labs can significantly increase their value addition to public administration if they are able to leverage these opportunities. Working with data can enhance the effectiveness and efficiency of different areas of government administration. To achieve this, it is necessary to have highly qualified staff, trained in data science, and effective access to necessary information that, subsequently, can be converted into actionable information for each government sector. For this purpose, big data analyses are often conducted on a variety of institutional databases. Given their role as coordinator and their cross-cutting stance in governments, some labs are essential candidates for carrying out these activities, at least at the initial stages.

4 The difficulty of innovation labs in establishing themselves as supporting stakeholders among other government agencies

The most significant challenges to consider when establishing a lab capable of stimulating public sector innovation are how to (i) support public institutions in key issues and processes on their agenda, without being overlooked; (ii) ensure the effective adoption and scaling up of innovations by these institutions; and (iii) ensure that the innovations developed by the labs are effectively sustained. It is possible that the labs or innovation teams that are emerging within sectoral institutions are able somewhat to overcome these challenges. The support they provide is exclusive to

these areas and not of an transversal nature for the entire administration.[67]

5 The importance of leadership support and legal mandate

These two factors are indispensable for the initial operation of a lab, when its credibility has not yet been established and its working methodologies are unknown to other government agencies. The support of government leadership and its legal mandate to grant power to labs facilitates the access to information that is required to develop innovations and to leverage the collaboration of key stakeholders for each project. It is important to ensure that labs do not become mere marketing tools that lack the capacity to create innovation projects in the public sector.

6 Policy networks can enhance the effectiveness of labs

The field work carried out has highlighted the importance of the sensitivity of lab members to the interests and concerns of key stakeholders regarding the programs, policies, and budgets of government institutions. Networks lend credibility to labs, facilitate access to strategic information and data, and help generate support for their initiatives. In light of this, the staffing of labs is key. Recruiting employees with public sector experience or with links throughout the government will assist labs to better understand the incentive structures and concerns of the stakeholders with whom they interact.

7 Adapting to restrictions and building shared meaning

The work of a lab does not take place in a vacuum, but rather in a preexisting context and in conjunction with other stakeholders with incentives and visions that vary. For labs to be effective, they must take into account the political, legal, technical, and budgetary constraints and attempt to create innovations within them. Co-creation schemes are key to ensure that innovations will adapt to these constraints, allow for the building of a shared meaning, and foster a sense of ownership among the actors. Applied by the majority of labs in Latin America, the design-thinking methodology should be adapted to the public sector to overcome multiple obstacles and obtain buy-in from veto actors.

8 The importance of risk management

One of the main contributions of a lab to other government agencies relates to the absorption of innovation risks. Failure in the public sector can entail high budgetary costs, cause problems for numerous people, and disrupt political careers. Labs are able to absorb these risks and stimulate innovation. Nevertheless, the legitimacy of institutions to take on this role should not be taken for granted simply because they are called “labs”; they must build the effective capacities to manage risk. This paper has discussed three mechanisms that labs should implement if they wish to absorb the risks associated to public innovations—a role that is essential in Latin American governments. These mechanisms are:

(67) For example, the Audit Court of Brazil launched an innovation and co-participation lab, and the Municipal Secretariat of Transport of São Paulo established MobiLab. See http://portal.tcu.gov.br/inovatcu/inicio.htm and http://mobilab.prefeitura.sp.gov.br.

- **Small-scale testing of innovations with pilot projects or experiments:** this allows for the evaluation of innovation results and a guidance for redesign prior to scale up.
- **Involving key stakeholders in the policy design and implementation processes:** co-creation schemes can facilitate the support of key stakeholders and anticipate reactions to initiatives.[68]
- **Incremental risk management:** starting with rapid successes can help labs build credibility and the networks necessary to ensure the success of riskier projects, where the support and trust of key stakeholders are essential.

9 The need for resources to support other administrative areas

It is very common for one government agency to request technical support from another, and ultimately lack the resources to implement proposed solutions. In light of this, labs should have not only the specific technical capacities, but also an adequate budget to support their "internal clients". This is key to promote their work, especially at the initial stage, as it strengthens the relationship between the labs and the rest of the agencies in a government that may be reluctant to invest in innovation activities carried out by external teams.[69] With a budget, labs can also absorb the costs required by innovation activities, in addition to the reputational risks associated to unknown results. Furthermore, resource flexibility and the option for advance funding in the budget preparation process can allow labs to more speedily respond to changing opportunities and requests for support.

Promoting innovation in the public sector is a complex and multifaceted challenge. Innovation labs are one way in which governments can overcome this challenge, although not the only one. Innovation ecosystems also can be fostered through other mechanisms, such as those discussed in the second section herein. Future research should conduct more in-depth analysis of these mechanisms, as well as those associated with building data ecosystems and promoting data use in public administration. In addition, it would be helpful to obtain more detailed information on the impact of the legal frameworks and budget structures of labs. It would also be beneficial to study success cases more deeply and build databases classifying the types of government innovations in the region. This paper focuses on the innovation labs that have emerged in Latin America relatively recently, and are still developing in many of its countries. It provides a critical analysis of the role of labs in a broader framework of government innovation, outlines regional trends, and offers recommendations for taking advantage of existing opportunities and for creating spaces that are truly capable of spurring innovation in Latin American governments. Promoting innovation through labs requires that they are vested with enough resources and legal competences, as well as given access to a vast amount of data. In addition, the effectiveness of labs depends on their capacity to manage risk, leverage the potential of data, and co-create in conjunction with var-

(68) The stages of empathy, prototype creation, and testing can be the best occasions to get a wide variety of stakeholders involved.

(69) With the support of IDB, Agesic (Uruguay) set up a competitive funding modality, through which it called on public institutions to present e-government project proposals. Agesic provided the winners with the technical support and the resources to develop their solutions.

ious stakeholders. Otherwise, were the labs to be meaningless institutions, they would jeopardize the credibility of innovation methodologies and of the winds of change toward more dynamic and tech-savvy public administrations in the region.

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Annex 1:
List of Interviewees

Nicolás Bianchi, Staff Member, Social Innovation Lab, Uruguay, May 3, 2016.

Dario Bizzo Marques, Systems Coordinator, Rio Operations Center, Rio de Janeiro, April 13, 2016.

Rudy Borrmann, Undersecretary of Public Innovation and Open Government, Argentina, June 2, 2016.

Pablo Cerdeira, Data Director, Rio de Janeiro, April 13, 2016.

Pablo Collada, Executive Director, Smart Citizen Foundation, Chile, May 4, 2016.

Romina Colman, Data Production Manager, La Nación Data, Argentina, May 13, 2016.

Viviana Coloretti, Staff Member, Social Innovation Lab, Uruguay, May 30, 2016.

Silvia da Rosa, Director, Social Innovation Lab, Uruguay, May 30, 2016.

Nicolás Falcón, user of administrative procedures and public services in Uruguay, June 3, 2016.

Cristiano Ferri, Director, Hacker Lab, Chamber of Deputies of Brazil, August 9, 2016.

Luiz Guedes, Director, Lab.Rio, May 7, 2016.

Clarisse Linke, Country Director, Institute for Transportation and Development Policy, Brazil, July 19, 2016.

Juan Felipe López, Director of Government Lab, Chile, July 4, 2016.

Amilia Núñez, Secretary of Water Resource Management of Ministry of Housing, Land Use and the Environment, Uruguay, June 3, 2016.

André Ormond, Traffic Information Analyst, Traffic Engineering Company (CET-Rio), the transportation company of Rio de Janeiro, April 13, 2016.

Susana Penino, Secretary to the National Director of Ministry of Housing, Land Use and the Environment, Uruguay, June 3, 2016.

Carolina Pozo, Director, Innovation Lab of Quito, June 2, 2016.

Ully Ribeiro, participating citizen in the Conselho da Juventude da Cidade, July 25, 2016.

Graciela Rodríguez, user of administrative procedures and public services in Uruguay, June 3, 2016.

Karime Ruibal, Program Coordinator for Online Procedures, Agesic, Uruguay, May 30, 2016.

Gabriela Sanguinet, Legal Counsel of Ministry of Housing, Land Use and the Environment, Uruguay, June 3, 2016.

Ximena Sarno, Staff Member, Social Innovation Lab, Uruguay, May 30, 2016.

Patricia Totorica, Staff Member, Social Innovation Lab, Uruguay, May 30, 2016.

Roberto Torres, Area Leader for Water Resource Management, Ministry of Housing, Land Use and the Environment, Uruguay, June 3, 2016.

Annex 2:
Additional Information Relating to Infographics and Figures

Infographic 2: Working with Data *(p. 22)*

Lab	Has equipment for data processing and analysis	Conducts big data analysis
Mobilab, Sao Paulo	Yes	Yes
Vivelab Bogotá	No	No
iGovSP, Sao Paulo	No	No
Laboratorio Hácker – Chamber of Deputies of Brazil	Yes	No
Laboratorio de Buenos Aires	Yes	Yes
Lab.Rio	No	No
Laboratorio de Xalapa	Yes	No
Laboratorio de Gobierno, Chile	Yes	No
LabProdam, Sao Paulo	Yes	Yes
Laboratorio de Innovación de Quito	Did not answer	Yes
Laboratorio de Innovación Social – Uruguay	No	No
PENSA, Rio de Janeiro	Yes	Yes
Laboratorio para la Ciudad, México DF	Yes	No

Infographic 3: Lab Team Structure *(p. 23)*

Laboratorios	Number of employees	Sectors in which the employees have previous experience
Mobilab, Sao Paulo	4	Academia, public sector, private sector, and nongovernment agencies
Vivelab Bogotá	20	Academia, public sector, private sector, nongovernment agencies, and other innovation labs
iGovSP, Sao Paulo	3	Academia, public sector, nongovernment agencies, and other innovation labs
Laboratorio Hácker – Chamber of Deputies of Brazil	13	Academia, public sector, nongovernment agencies, and other innovation labs
Laboratorio de Buenos Aires	25	Academia, public sector, private sector, and other innovation labs
Lab.Rio	8	Academia, public sector, private sector, and nongovernment agencies
Laboratorio de Xalapa	10	Academia, public sector, and private sector
Laboratorio de Gobierno, Chile	30	Academia, public sector, private sector, nongovernment agencies, and other innovation labs
LabProdam, Sao Paulo	10	Academia, public sector, private sector, and other innovation labs
Laboratorio de Innovación de Quito	10	Academia, public sector, private sector, and nongovernment agencies
Laboratorio de Innovación Social – Uruguay	6	Academia, public sector, private sector, and nongovernment agencies
PENSA, Rio de Janeiro	5	Academia, public sector, private sector, and nongovernment agencies
Laboratorio para la Ciudad, México DF	Did not answer	Did not answer

Infographic 4: Innovations Developed for other Government Agencies and the Rate of Adoption of Innovations *(p. 40)*

Lab	Innovations developed for other government agencies	Innovations effectively adopted by those agencies
Mobilab, Sao Paulo	3	0
Vivelab Bogotá	4	2
iGovSP, Sao Paulo	16	0
Laboratorio Hácker – Chamber of Deputies of Brazil	N/A	N/A
Laboratorio de Buenos Aires	12	6
Lab.Rio	7	4
Laboratorio de Xalapa	N/A	N/A
Laboratorio de Gobierno, Chile	20	20
LabProdam, Sao Paulo	7	7
Laboratorio de Innovación de Quito	8	8
Laboratorio de Innovación Social – Uruguay	50	50
PENSA, Rio de Janeiro	40	10
Laboratorio para la Ciudad, México DF	Did not answer	Did not answer

Figures 2 and 3: Priority Level Assigned by Labs to Training for Government Agencies - Allocation of Innovation Incentives by Government Agencies *(p. 25)*

Lab	Priority of training activities for government agencies	Allocation of innovation incentives
Mobilab, Sao Paulo	High	Main activity
Vivelab Bogotá	Very high	Secondary activity
iGovSP, Sao Paulo	High	Secondary activity
Laboratorio Hácker – Chamber of Deputies of Brazil	Low	Main activity
Laboratorio de Buenos Aires	Medium	This type of activity has never been done.
Lab.Rio	High	Main activity
Laboratorio de Xalapa	High	This type of activity is rarely done.
Laboratorio de Gobierno, Chile	Extremely high	Main activity
LabProdam, Sao Paulo	Medium	This type of activity is rarely done.
Laboratorio de Innovación de Quito	Medium	Main activity
Laboratorio de Innovación Social – Uruguay	Medium	This type of activity has never been done.
PENSA, Rio de Janeiro	Low	This type of activity has never been done.
Laboratorio para la Ciudad, México DF	Did not answer	Did not answer

Figure 5: Ongoing Support Lab Mechanisms for Target Institutions Once Innovations Are Implemented *(p. 46)*

Lab	Has post-implementation support mechanism for innovations
Mobilab, Sao Paulo	No
Vivelab Bogotá	Yes
iGovSP, Sao Paulo	No
Laboratorio Hácker – Chamber of Deputies of Brazil	No
Laboratorio de Buenos Aires	No
Lab.Rio	No
Laboratorio de Xalapa	No
Laboratorio de Gobierno, Chile	Yes
LabProdam, Sao Paulo	No
Laboratorio de Innovación de Quito	No
Laboratorio de Innovación Social – Uruguay	No
PENSA, Rio de Janeiro	No
Laboratorio para la Ciudad, México DF	Did not answer


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