Overcoming the Challenges of Open Data Implementation: 
Case Studies in Latin American Municipalities

Submitted in Partial Fulfillment of the Degree of 
Master of Public Affairs

Institut d’Études Politiques | Sciences Po
Paris

21 May 2014

In cooperation with INTER-AMERICAN DEVELOPMENT BANK

Under the supervision of Sean Safford

André Confiado, Wen Hu, Angeles Navarro, Ayse Oncan

Approved:

Sean Safford
Director, MPA

Approved:

Antonio Moneo-Lain
Inter-American Development Bank
ABSTRACT

Open Data is a recent concept in Public Management. It is one of the most important tools of Open Government, which is currently identified as an instrument to achieve better governance. Open Data does not only refer to public sector information, but to other sources of collection, administration and releasing of the data. The fact of being open unravels the possibility for a broader audience to use that data, both for private or social entrepreneurship, but also to contribute to solve public problems through a collaborative and innovative way. Open data can be seen as a driver for economic growth through innovation and with a more participatory approach. The analysis of how Open Data policies are being implemented at municipal level in Latin America offers an opportunity to understand what the current challenges are and how municipalities are overcoming them, as well as to identify the variables that play a key role to start open data policy.
EXECUTIVE SUMMARY

Through the analysis of five municipalities in Latin America which are currently implementing an open data policy, we aim to identify the main challenges that cities have encountered, how they have designed the policies in order to overcome those challenges, and what are the key variables that played a crucial role for enabling the policies to arise, be undertaken and keep existing and growing. The cities that we analyzed in this study are Mexico City, Zapopan and Xalapa in Mexico, as well as Buenos Aires and Mar del Plata from Argentina. These cities differ in size, demographics, geography and socioeconomic characteristics, however we were able to identify common elements amongst them, which we considered that allowed the open data policies to be implemented until today.

We also realized that the framing of the policy could be crucial in order to affect the political will. Open Data and Open Government originally started with the philosophy of transparency and civic participation for the co-creation of public policies, but open data offers a wider set of attractive benefits for a political leader. Beyond the ideal of governmental transparency, the potential benefits of open data have been mostly identified with a source of entrepreneurship, social innovation and economic growth. We found that in all of our cases, framing the open data policy around the idea of innovation can favor the receptivity of all stakeholders to engage to it, specially the leadership and secondly, the public officials who can benefit from external solutions that may alleviate their workload and/or improve the delivery of public services and products.

We acknowledge that our study does not include all of the municipalities that are currently implementing an open data strategy in Latin America, but by the identification of these factors, we hope that it can serve for the current studies of how to implement open data at the municipal level, as well as for further and future studies on the topic.
ACKNOWLEDGEMENTS

This capstone project was done in partnership with Sciences Po and the Inter-American Development Bank. The team is grateful to both institutions for the opportunity to work in this valuable project, allowing us to do field research first in Mexico City and Xalapa, in order to collect the necessary data and conduct interviews with the local open data heroes, and secondly to Washington D.C. where we had the opportunity to visit the IADB, the World Bank, the OGP, and meet with several leading figures shaping open data policy at international level.

The report benefited greatly from very generous recommendations and comments from Antonio Moneo-Lain from the Knowledge and Learning Department at the Inter-American Development Bank. The team is greatly thankful to him for being the guide of this project, for his constant motivation, encouragement, availability and support. This paper would not have come to reality without him. We also thank Sean Safford, the Director of the MPA, for his valuable feedback and contributions.

We want to thank deeply for the time devoted to our team in order to conduct our interviews during and after the field trip and which contributed to our understanding and the findings of our research. To the “open data heroes” we want to thank Mr. Rudi Borrmann, the director of the Office of Information and Open Government at Ministry of Modernization in the City government of Buenos Aires, Mr. Daniel Badillo, the coordinator of Digital Communication of Mexico City’s Lab, Mr. Gerardo Pérez Gallardo, the Head of the Electronic Government Department in City Council of Xalapa, Mr. Gustavo Adolfo Acosta, Head of the Directorate for Innovation and Technology from the Municipal Government of Zapopan, Mr. Renato Rosello, the Secretary of Technological development Administration of the Municipality of Mar del Plata, who provided valuable insights about open data policy development and implementations at municipal levels.

We thank the members of international organizations who devoted their time for our interviews, Ms. Barbara Ubaldi, the E-Government Project Manager and Mr. Alessandro Bellantoni, the Coordinator of the Open Government Project at OECD, Ms. Amparo Ballivan, the Lead Economist of Development data group and Sandra Moscoso, the Deputy Program Lead at Global Media Development Program; Samuel Lee, the Open Data Specialist and the program Lead at the World Bank, Mr. Federico Ramirez Corona from Center of Analysis and Investigation (Fundar), Mrs Lourdes Morales, head of the Red por la Rendición de Cuentas lead by CIDE in Mexico, Mrs Almudena Ocejo, in charge of the IRM for Mexico’s OGP Action Plans, Mr. Eduardo Bohorquez, Director of Transparency International in Mexico, Mrs Cynthia Michel, from CIDE.

Finally, we would like to thank especially the Navarro family, particularly Alejandra, for going out of their way to help us during our stay in Mexico and for creating the designs of our charts.
ABBREVIATIONS

CSO  Civil Society Organization
GIS  Geographical and Informational Systems
IADB  Inter-American Development Bank
ICT  Information and Communication Technologies
IRM  Independent Report Mechanism
OD  Open Data
ODI  Open Data Institute
OGD  Open Government Data
OGP  Open Government Partnership
OKFN  Open Knowledge Foundation
ODP  Open Data Policy
PSI  Public Sector Information
# TABLE OF CONTENTS

ABSTRACT .......................................................................................................................... II
EXECUTIVE SUMMARY ..................................................................................................... III
ACKNOWLEDGEMENTS ..................................................................................................... IV
ABBREVIATIONS ................................................................................................................ V

List of Figures ..................................................................................................................... 1

1. INTRODUCTION ............................................................................................................. 2

2. OPEN DATA AND OPEN GOVERNMENT ..................................................................... 5
   2.1 The Foundation: Open Government Data ................................................................. 5
   2.2 The Open Government Movement .......................................................................... 6
      2.2.1 Transparency .................................................................................................... 7
      2.2.2 Participation ...................................................................................................... 8
      2.2.3 Collaboration ................................................................................................... 10
   2.3 Innovation ................................................................................................................ 10
      2.3.1 Public Sector Innovation .................................................................................. 11
      2.3.2 Private Sector Innovation ................................................................................ 11

3. CHALLENGES TO IMPLEMENTATION OF OPEN DATA ............................................. 13
   3.1 Power and Politics .................................................................................................... 14
   3.2 Institutional ............................................................................................................... 15
   3.3 Resources and Capacities ....................................................................................... 17
      3.3.1 Technological Capacity .................................................................................... 17
      3.3.2 Human Capacity .............................................................................................. 18
      3.3.3 Financial Capacity ........................................................................................... 19
      3.3.4 Data Community ............................................................................................... 19

4. CASE STUDIES .............................................................................................................. 21
   4.1 Mexico City: Open Data as a commitment to the OGP agenda ................................. 21
   4.2 Xalapa: the first intermediate city in Mexico to join the National Digital Strategy .... 24
   4.3 Zapopan: an imported approach from San Francisco ................................................ 27
   4.4 Buenos Aires: the Inspiration for Latin America ....................................................... 30
   4.5 Mar del Plata: Open Data to boost the Knowledge Economy ................................... 33

5. FINDINGS AND RECOMMENDATIONS ..................................................................... 37

Figure 4. Steps to make an ODP sustainable ................................................................... 37

5.1 Many Routes to Creating the First Spark ................................................................. 37
5.2 Establish a Sense of Urgency and a Vision by Framing Open Data around Innovation ......................................................................................................................... 38
5.3 Form a Powerful Guiding Coalition of Allies in Government .................................. 40
5.4 Empower Stakeholders ............................................................................................ 41
   5.4.1 Transversal Office .............................................................................................. 41
   5.4.2 Enlist Support from National and Multilateral Entities ...................................... 42
   5.4.3 Empower the Open Data Community ............................................................... 42
5.5 Creating Opportunities for Short-Term Wins Through Events and by Leading with “Low-Hanging Fruit” ................................................................. 43
5.6 Consolidate and Institutionalize Open Data Practices........................................ 44

6. CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH ...................................................... 46

REFERENCES ........................................................................................................................................... 47

RESOURCES ........................................................................................................................................... 50
- International Organizations ........................................................................................................ 50
- Academic Research Institutes ....................................................................................................... 50
- Open Platforms ............................................................................................................................ 50
- Government Sites ........................................................................................................................ 51

ANNEX 1: List of Interviews ................................................................................................................. 52

ANNEX 2: Datasets and Apps of Cases ............................................................................................... 57
- Mexico City ..................................................................................................................................... 57
- Xalapa .............................................................................................................................................. 58
- Zapopan .......................................................................................................................................... 59
- Buenos Aires ................................................................................................................................. 60
List of Figures

1. Relationship between Open Government, Open Data and Big Data
2. Open Government: Transparency, Participation and Collaboration
3. Challenges for ODP implementation
4. Steps to make an ODP sustainable
“Democracy relies on our ability to frame policy – and regulation- around our broad societal goals. Open data plays an important role in this process by encouraging constructive public discourse, and by providing a transparent measure of progress towards those goals. Indeed, as Abraham Lincoln noted, with “real facts” even the most challenging social issues can be met”.

Joel Mahoney (Goldstein, 2013:10)

1. INTRODUCTION

Since the formal adoption of the term “Open Government” by Barack Obama in his first executive act, issued on January 21st 2009, there has been a growing international trend to implement Open Government strategies, with a main focus at the national level. At the initial stages, most governments focused Open Data efforts as part of their transparency agenda, as a means to increase accountability, fight corruption and improve democracy. The US and Brazil are two examples of this approach. More recently governments have discovered the potential of open data as a driver for economic growth, and have shifted the framing of these efforts as part of their innovation agendas and creating business opportunities, rather than the initial transparency goal.

In 2011, the Open Government Partnership (OGP) was founded by eight countries (US, Brazil, Mexico, Indonesia, Norway, Philippines, UK and South Africa) in order to enhance the international commitments of national governments towards an open government agenda. Only four years later, already 65 countries have committed to take action, 41 of which are developing countries according to the World Bank (2015) and the International Monetary Fund (IMF, 2014). According to the current international evaluations on open data, the Open Data Index and the Open Data Barometer, the countries that are more advanced with regards to opening government data are the United States (U.S.), the United Kingdom (U.K.), Denmark, Finland, France, Australia, and New Zealand. Latin American countries are lower on the list, being Chile, Brazil, and Mexico in the first places. Nevertheless, most of the countries in the region have joined the OGP, and Open Data initiatives have started to be implemented both at the national and subnational level in several countries and cities as part of their action plan.

The U.S. and U.K. are pioneers in the development of an open data policy—particularly with respect to economic potential, followed by other European countries. President Obama emphasized in his 2013 speech that the US government is ambitious to open more data and to make it easily accessible to enable talented entrepreneurs and to help launch more businesses. He expressed his enthusiasm, saying “it’s going to help more entrepreneurs come up with products and services that we haven’t even imagined yet” (White House: 2013). McKinsey’s Global Institute suggested in 2013 that open data could bring an additional value of 3 trillion usd per year to the global economy (Maynika, 2013). For example, with an annual running cost of USD 750 Million, GPS technology
(which relies on open government data) has an economic contribution of USD 90 Billion annually (Time Magazine, 2012, and The GovLab, 2013). An article entitled “A new goldmine” from The Economist, claims that the information held by governments could be used to generate an estimated €140 billion ($180 billion) per year in Europe (Economist, 2013).

Open data has also been identified as a means to make governments more efficient, to improve the delivery of public services, and as a driver for entrepreneurship. And these economic benefits from open data are not limited to the national level of government. Increasingly, the implementation of Open Data strategies at the local level is seen as representing a new opportunity for innovation, to improve the delivery of public services, to increase the local economic activity and to create public value through a closer and more positive relationship between government and the citizens.

Latin American countries do not figure at the top of international indices. Nevertheless, the current international trend seems to have a positive impact in spreading the implementation of Open Data strategies both at the national and sub-national level in the region. Starting with the first initiative in Montevideo, Uruguay in February 2010 (Scrollini, 2014), as of today, many cities have started some kind of Open Data initiative: in Argentina, Brazil, Chile, Colombia, Costa Rica, Honduras, Mexico, Uruguay. Even though the implementation is fairly new, our observations show that open data is being used as a policy instrument to drive public innovation in Latin American municipalities.

This study, a joint research project of Sciences Po’s Master of Public Affairs and the Inter-American Development Bank (IADB), is meant to identify the challenges that municipalities in Latin America have encountered when implementing Open Data policies and to develop insights into how they overcome them. We develop five cases of municipalities that have implemented Open Data policies in two Latin American countries: Argentina and Mexico. We gathered information through field research conducted in February 2015 in Mexico and the United States, as well as interviews with experts and representatives of the open data initiatives in five cities: Mexico City, Zapopan and Xalapa in Mexico, and Buenos Aires and Mar del Plata in Argentina. (Annex 1)

We begin with a discussion of the positive argument for opening government data to reuse. Open Data policies can improve government processes in many ways, for instance by creating greater transparency, providing tools for accountability, encouraging citizen participation and creating a dynamic of collaboration in across government units. Open government data can also be a catalyst for innovation, particularly when private sector or civil society can use the data to develop valuable new tools, applications and analyses with the data. We develop each of these elements in the next section the paper. We then turn to some of the challenges --both real and perceived -- standing in the way of more widespread implementation of Open Data policies. These include political, institutional and resource related elements. With each of these elements in mind, we then
conducted a number of case studies, presented in section 4 of the paper, which sought to understand what value was being derived from open data and how the initiatives were able to overcome the challenges and implement open data policies. We present some findings from these cases in the section that follows along with recommendations on how to encourage more cases like them.
“Open government must be understood as a process that goes beyond merely ‘digitizing bureaucracy,’ reducing the number of transactions and decentralizing public services; it is a platform for rethinking the role of the state from a pro-citizen perspective that can open up opportunities for participation and collaboration between the public sector, civil society, and the private sector.”

(Dassen et al. 2012)

2. OPEN DATA AND OPEN GOVERNMENT

Open data is a foundation on which the open government movement is built. The goal is to increase public value by establishing greater transparency, fostering more and better participation on the part of citizens and by encouraging collaboration both among government entities and between government and the private sector. This last element—collaboration—holds an important additional benefit: that of potentially creating opportunities for creating public and private value through innovation and entrepreneurship.

2.1 The Foundation: Open Government Data

According to Joel Gurin open data is “designed to provide free, open, transparent data that can transform the way we do business, run government, and manage all kinds of transactions.” It is, he continues “accessible public data that people, companies, and organizations can use to launch new ventures, analyze patterns and trends, make data-driven decisions, and solve complex problems.” (Gurin, 2014:9)

Open data is related to, but different from, “big data”. Like big data, open data involves “datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze.” (McKinsey, 2011:1) But big data is not necessarily open and available to the public. To qualify as “open”, big data must be taken as an individual data set, and conform to several criteria:

- It must be available and accessible to anyone who wants to access it and re-use it, preferably for free, and downloadable over the internet.

- It must be available in a machine-readable format (i.e. can be easily processed by computers).
● It must be authorized for reuse and redistribution including intermixing with other data sets, i.e. licenses. This authorization is subject to, at most, a requirement to attribute the source of the data and to share the end result of this re-use. (Open Knowledge Foundation, 2015)

Finally, while open data can be produced and collected by either private or public agents, in this paper we are concerned only with open government data, which is to say data that is collected, administered and released by the public entities. Open government data is illustrated in Figure 1.

**Figure 1. Relationship between Open Government, Open Data and Big Data.**

Source: Based on Joel Gurin (2014)

### 2.2 The Open Government Movement

In 2003 the OECD issued a report referring to open government as “a basic platform for the establishment of solid legal, institutional, and political frameworks that govern access to information, consultation, and public participation, which contribute to improving public policy design and formulation, combating corruption, and increasing society’s confidence in the public sector” (IADB, 2012:38). The idea of open government -- and in particular the role of open government data -- gained much greater notoriety when Barack Obama issued his “Memorandum on Transparency and Open Government” on the first day of his administration, on January 21st, 2009 (White House, 2009) in which he committed his government to be transparent, participatory, and collaborative. He thereby directed the Chief Technology Officer of the Federal Government to coordinate with the executive departments and agencies to come up with recommendations for an Open Government Directive.
The philosophy of open government relies on three pillars: transparency, participation and collaboration (Tauberer, 2014). First of all, transparency is the basis of an open government, since it cannot be considered “open” if it does not make the public sector information available to the public. Nevertheless, the sole fact of releasing government data does not imply that citizens’ opinions will be taken into consideration, and this is where the second pillar comes in: participation. Citizen participation becomes relevant when it is taken into consideration in the decision-making process for a co-creation of public policies. Third, collaboration allows government agencies to work together, to improve processes and share administrative data, and to build partnerships with citizens through civil society organizations, and companies. We shall elaborate further on each step below.

Figure 2: Open Government: Transparency, Participation and Collaboration

Source: www.democratieouverte.org/en

2.2.1 Transparency

The first pillar of Open Government is transparency. The divide separating citizens and government is a classic case of information asymmetry: for the most part, citizens do not exactly know what is going on or how government works (e.g. what are the processes behind getting a driver's license, or how a government conducts a bidding process for the creation of a new highway) which leads, at a minimum, to suboptimal choices and in many cases to a situation ripe for malfeasance. Opening government data can address this in two ways: (1) informing and (2) by providing mechanisms for accountability.
In operational terms, education and information is achieved, for example, through Open Data portals, which provide access (generally over the internet) and allow citizens to see relevant public sector information and provide some insight into how government works. Beyond educating the public, open government data is often portrayed as a tool for holding government accountable. Giving the public access to information that the government has collected about its activities and about the effects of those activities, open government data can be used to inform the public and, in some cases, to hold the government accountable. As the IADB (2012:41) states in its Open Government and Targeted Transparency report: “a transparent government provides information about what it is doing, about its action plans, its data sources, and everything that might make it more responsive to society. This fosters and promotes the administration’s accountability to citizens and permanent social monitoring.” By giving access to the raw data in an open data format, particularly the metrics (how fast does it take to get a passport, how many companies have bid for the creation of the highway), citizens can better monitor whether government is being effective or not, (is it being too slow in the passport process because printing takes 3 weeks? If so, why?) and determine the rooms for improvement.

Of course, as Barbara Ubaldi of the OECD pointed out during our interview, simply opening government data does not necessarily mean that a government is transparent or that government necessarily takes into consideration the end-users of the released datasets. In other words, releasing data does not necessarily mean being transparent and inclusive to identify the informational needs and requests from the citizenry. As such, this is where the second pillar of an Open Government Data policy comes into play: the participation of citizens.

2.2.2 Participation

“Open data is not only about releasing datasets, it is also about the process to involve citizens, to share the decision-making.”

Sam Lee

Participation of the public in government is often considered as being limited to voting and paying taxes. Yet most people don’t feel that they are connected to the decision-making process; they don’t feel a sense of inclusion. In 2003 the OECD discussed the notion of open government as a basic platform for the establishment of solid legal, institutional, and political frameworks that govern access to information, consultation, and public participation, which contribute to improving public policy design and formulation, combating corruption, and increasing society’s confidence in the public sector (IADB, 2012:38).
Another concept that is related - and often times confused with open data and the inclusion of citizen participation is e-government. E-Government is defined by the World Bank (2011) as:

The use by government agencies of information technologies [...] that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

E-government typically focuses on automating processes that have a visible impact by making life easier for the citizen in his or her relationship with public services” (IADB, 2012:4). These efforts may or may not involve open government data. Nevertheless, open data can be a catalyst for e-government and public sector innovation and efficiency. As Janssen, Charalabidis, and Zuiderwijk (2012) note, “the opening of systems provides the opportunity for creating feedback loops in which the government can learn from the public.” Through consultation and deliberation, these feedback loops can be created. Some questions that can be asked and possibly resolved are: where are the rooms for improvement? Where are the bottlenecks when going through a specific government process? Are there insufficient traffic enforcers in one area at a given time? Where are rooms for improvement in terms of trash collection?

Open government data can enhance participation in three ways: (1) it can be a tool for consultation with citizens on specific government programs and policies, (2) it can play a role in substantive deliberation with citizens on the function and purpose of these policies, or (3) open data can become the centerpiece of a process in which government works together with the citizens to actually design and co-create a new policy. Each provides opportunities for citizens to be involved in the decision-making process, with the goal of attaining better governance, but with increasing degrees of involvement. (Open Data Barometer, 2013)
2.2.3 Collaboration

“The government that opens its doors to the world; co-innovates with everyone, especially citizens; shares resources that were previously closely guarded; harnesses the power of mass collaboration; drives transparency throughout its operations; and behaves not as an isolated department or jurisdiction, but as something new- a truly integrated and networked organization.”

Lathrop and Ruma, 2010: XVI

It is no secret that governments tend toward bureaucracy and, along with it, the establishment of knowledge silos. Examples of one government entity failing to adequately engage others are rife. Barbara Ubaldi (2013) states that Open Government Data can “help foster collaboration across and within public agencies and departments.” As shared datasets and/or registers are being created, collaboration and exchange on who owns what public information and for what purpose is needed, which provides an opportunity to also re-engineer and simplify internal procedures, and/or automate processes and as a result eliminate redundant expenditures or reduce internal transactional costs.

As Felten et al. (2009) note, neither the government nor the market have a monopoly on solving complex societal problems anymore. Partnerships between government, civil society groups, individuals and private enterprise are needed. Opening data and promoting citizen participation through the re-use of this data is an opportunity to get a fresh set of eyes on the data, and come up with solutions to problems or develop new policy ideas. These new ideas are the fuel for innovation in the public sector.

Opening data can facilitate collaboration between government agencies, and promote the collaboration with entities outside of it. Doing so creates the potential to promote innovation and entrepreneurship and therefore, of contribution to the economic growth of regions.

2.3 Innovation

As we have just seen, opening government data can lead to new solutions to improve the delivery of public services. Open government data can also lead to innovations that have positive economic consequences. There are two different forms of innovation using open data: (1) public sector innovation and (2) private sector innovation.
2.3.1 Public Sector Innovation

Thus, through this policy, the delivery of public services can be improved or internal processes can be more efficient through collaboration between government agencies, and with outside entities. One example of this is the reduction of typical government service transaction costs by the city of Bristol through a project called “B-Open” (Tinhoit, 2013). Through this project, the city discovered that it was 15 times more expensive to answer a service transaction via telephone or in person rather than via the internet. Another is the Boston Public School system, which improved its school student assignment process through an algorithm created by a MIT student using data that had been opened by the city. This resulted in the DiscoverBPS website (www.discoverbps.com), a search engine that facilitates the school selection process for the parents (Mahoney, 2013).

2.3.2 Private Sector Innovation

The second form of innovation is economic. The Open Data movement began with the openness goals, fueled by the idea that governments should make the data about their operations and the data that they collect available to the citizens. However, it has become increasingly apparent that open data can be a source of broader economic growth by being a catalyst for entrepreneurship, either through social entrepreneurship, or for private purposes.

As the saying goes, “knowledge is power.” Access to a broader set of information and knowledge allows citizens, civil society organizations, private industry, and government ministries has led to a stream new applications that create value--both for the public good and for private gain. During the most recent Open Data Awards (Dataconnexions) by the French Government Open Data Lab (Etalab), one of the finalist projects was a startup consultancy (50+1) that advises candidates on how to focus their political campaigns based on publically available socioeconomic, demographic and other information from which he creates visualizations and targeted recommendations.

The most widely known application of Open Data driving innovation is the release of GPS and weather administration spawning high profits in these businesses each year (Gurin, 2014). Through the data gathered and opened by government owned GPS and weather satellites, entrepreneurs are able to make use of these in order to improve their processes and services. Delivery services like UPS (Gurin, 2014) use GPS to determine their optimal routes. Weather applications developed for smartphones use opened weather data. This can even lead to the creation of a company that is built

---

1 Etalab. Dataconnexions #5 https://www.etalab.gouv.fr/finalistesduconcoursdataconnexions
exclusively on opened data. One of the most well-known of these companies is Zillow. This company has a business model built on data opened by several U.S. government agencies (such as Housing or Education) in order to create a database and provide insights when searching for a house.

On one hand, the government can promote innovation by using or reusing public data as a catalyst for new applications and services, thereby transforming service-providing governments into platform managers (enabling other entities and/or users, using the liberated data, to create new internet applications, generate new economic activities, and add public value). On the other hand, the public regains control of its own data, thereby increasing transparency, accountability, and permanent public scrutiny.

Innovation is not only about technology. It also implies the application of human talent in order for it to materialize into specific projects. Government does not necessarily have the human resources in order to boost these innovative measures. Opening the door for outside “helpers”, and on top of that, capable and trained human resources, can lead to find new solutions to unsolved problems, with a much lower cost. Open data can be a driver for this virtuous circle.
3. CHALLENGES TO IMPLEMENTATION OF OPEN DATA

As the previous section makes clear, there are good reasons for the international clamor—and strong local interest—that has accompanied the open government data movement. Yet—as is the case with any policy innovation—the policy process presents many barriers that determine whether or not policy innovations will ultimately have the impact on the day-to-day lives of individual citizens that were intended to make. In this section of the paper, we identify and develop three kinds of challenges: (1) political, (2) institutional and (3) resource-based.

Figure 3. Challenges for ODP implementation

---

2 The framework of the challenges was designed by the team in a joint effort with Antonio Moneo-Lain, based on the factors that were identified as key components for the success of the policies studied on this research.
3.1 Power and Politics

Opening government data has implications for the distribution of power. On the one hand, open data initiatives can be used to create positive political energy. It brings mayors and governors greater visibility by linking them to potentially politically popular initiatives. However, it is not hard to imagine ways in which open data could be seen to create political threats. At its most radical, the open data movement holds the potential to shift power away from government and toward citizens. But it can also threaten the balance of power among government agencies and even within agencies from those parts with the capacity to gather, analyze and collaborate with data and those that do not. These elements pose a threat to the implementation of open data particularly when they are seen to be threatening the balance of power. To succeed, Open Government Data advocates must find ways to align political will behind the effort.

As we have mentioned, when successfully implemented, ODPs can be positioned a part of a positive political agenda focused on growth or taking on widely perceived problems in the delivery of services. Nevertheless, opening government data can also run into difficulties inherent to the conflict of political parties in their struggle for power. In an electoral system in which political parties are normally held accountable for their actions at the polls, opening data could be interpreted as a threat by those who fear that it might provide ammunition to political opponents. A more positive dynamic is, of course, both possible and desirable. the same time that it could also be a reason to fear for accountability, open data initiative could become a source of visibility for a certain political leaders, who could then find attractive to get the credit and public recognition of being an innovative and transparent leader.

Additionally, each of the different benefits of ODP (as discussed in Section 2) can lend themselves to framings and narratives that contribute of an open data policy can play a role on the ideological identification of political parties with certain types of policies. There are four main different policy objectives on which open data policies are identified such as economic growth, transparency and accountability, public sector innovation and efficiency, and increased citizen engagement.

In theory, at least, open data initiatives at the municipal level are more visible for citizens, because its direct impact can be linked to the public services that they use in everyday life. This can represent a powerful tool for political leaders at the local level, who gain power from this policies and linkage with the society. In a system where the national and state governments are usually much more powerful than the municipal level, especially in terms of economic and political resources, open data could shift that balance of power, towards a more bottom-up approach.

---

Information technology has revolutionized all aspects of government and, to the degree that ODPs represent an extension of this movement, it would seem evident that it should help drive efficiencies and cooperation across government agencies. However, bureaucracies are clearly more complicated than that. They are rife with “power centers” and battles over organizational power are a fundamental part of what happens there. Opening government data can confront the balance of power within bureaucracies, because the flow and administration of the information needs to be shared and coordinated within different parts of the government. In addition to that, due to the fact that open data policies are commonly not “compulsory”, engaging the different agencies can be complicated in order for them to release their data voluntarily, since this might be perceived as an extra “burden” with no useful purpose.

3.2 Institutional

Opening government data also has implications at the institutional and organizational level within the structures of government. It can be a source of coordination and cooperation amongst ministries in order to make internal processes more efficient and thus, improving the delivery of public services for citizens. However, the process of starting an ODP can cause struggles inside those structures, in order for coordination to happen. In one sense, institutions--laws, rules, regulations and contracts--exist to help solve collective action problems. They are the tools with which a society or an organization establishes groundwork for cooperation. Yet, there is no secret that institutions are “sticky”. That is to say, once put in place, they can be difficult to change. Rules that are put in place at one moment to resolve one kind of collective action problem may eventually conflict with other priorities or simply become outdated. This is possibly the case with respect to data. There are myriad rules, regulations and contracts that govern what data is collected and how data is maintained and used. ODP, however, represents a new approach, which may--in some cases--find itself in conflict with existing institutional arrangements.

The gathering, warehousing and use of data is not a new topic and there are many laws, rules and regulations that have been developed to control it. Many of these have the effect of keeping data closed; for privacy or security issues, for instance. In other cases, there are no rules for the kinds of data we are interested in. These rules are at best out of date or in some cases antithetical. Most of the regulations related to opening government data are directly linked to transparency and
accountability. However, even though the concepts are closely linked, they are not the same\textsuperscript{4}, regulation often focuses solely on transparency, disregarding features related to open data; these regulations also have not been confronted with a framing around collaboration and innovation.

The bureaucratic structures imply not only layers of hierarchies, but also leadership, responsibilities, job definitions, control and--as we discuss above--power. The relationships amongst those structures can be formal and informal, either regulated by specific laws or through informal and voluntary collaboration. The existence of an open data policy -- particularly the notion of collaboration -- can threaten the sense of hierarchical boundaries within the existing bureaucratic structures of government.

In centralized structures of government, open data can also represent a threat to the bureaucratic authorities that have control over certain data, since its collaborative nature requires it to be released and shared, both within the governmental structures and to the general public. For instance, creating a “transversal office” or the figure of the CIO to manage the totality of government data shifts power from the individuals that hold that information and centralizes it into a new or even an “outsider” figure.\textsuperscript{5}

Existing bureaucratic structures have defined rules and responsible agents who are assigned specific roles and duties for the overall organization. Releasing government data entails internal coordination, and thus it requires a system to collect, manage and coordinate the data within the structures of government. This means that specific tasks should be assigned to whatever type of structure that is designated for the open data policy --either a crosscutting office, or identifying one responsible person in each area--. Even if there does not exist an enforceable regulation, an executive directive from the political leader requires bureaucratic coordination in order to materialize the policy.


\textsuperscript{5} “Designation of one entity with sufficient political weight to coordinate Open Data matters across government and ensure that Open Data policies are implemented”. World Bank. Open Data Readiness Assessment Toolkit. p. 14 \url{http://data.worldbank.org/sites/default/files/1/od_readiness__revised_v2.pdf}
Finally, while there may be formal institutions, laws and rules, which influence the viability of ODPs, the open government movement also implies the adoption of new ways of approaching the very notion of government and its relationship to citizens. As a result, opening government data can challenge the informal rules and norms that govern the proper role of government. As with any organizational innovation, implementation inevitably confronts the informal norms and routines that govern people’s day to day interactions. In the case of ODPs, public servants, in particular, must be habituated to sharing information that was previously kept closer to the chest and also to engaging with their colleagues and with the public in more open and collaborative ways. Challenging these norms could pose significant difficulties.

3.3 Resources and Capacities

ODPs come in different shapes and forms and different forms imply different degrees of openness. The simplest level of openness--for instance, establishing an Open Data portal--involves relatively little in the way of resources and capabilities. Collecting, managing and releasing governmental data involve skills and technologies that many municipalities already have. Yet, even at this simplest level of engagement, there one might worry about whether capabilities to use data exist within the non-governmental entities who might make use of the data. But implementing an ODP can go beyond simply releasing data. Participation, collaboration and innovation may all depend on the availability of data. But they also call for government actors to engage the community itself. Doing so calls for a different set of skills--and a different kind of commitment.

3.3.1 Technological Capacity

Despite appearances, ODPs in fact do not present particularly large technological requirements of open government data are relatively straightforward. The necessary skills could often be found among the existent ICT specialists already employed by government entities or else otherwise can be brought at relatively low-cost by training or contracting out of services.

In the first place, special software is required in order to facilitate the upload of the information by public officials in a uniformly and timely manner for it to be relevant and re-used. There are options in the market for basic software that can meet these requirements and that are not necessarily at a high financial cost. Secondly, in order to have the data in a uniform and timely manner, specific technological skills are required from the public officials who will perform these tasks. These skills

---

6 Socrata is one of the available options in the market, which is recognized to have a low-cost. [http://www.socrata.com](http://www.socrata.com)
involve web development, database science, data analysis and statistics, as well as managerial skills and understanding governmental administration. Simply releasing the data is not enough; it needs to be reusable, accessible and redistributable to be considered “open”. This means that “cleaning” the existing government data implies shifting it from non-reusable formats such as PDFs into “open formats” such as .csv and .txt.

3.3.2 Human Capacity

It is important to note that technological capacity is not the only skill set needed to ensure the success of an open data initiative. It also requires the capacity to coordinate the management of the information within the structures of government, but also to reach out to the non-governmental ICT community that will be re-using the information. The task requires to bridge the governmental and the non-governmental communities, as well as management skills to coordinate the governmental structures as well as the data that is released.

These skills might seem perhaps rarer, but—again—solutions are available including training and out-sourcing, as “non-government expertise can fill government positions”. This responsibility is usually placed under the figure of a Chief Data Officer (CDO) or Chief Information Officer (CIO), whose function is to engage the non-governmental data community—including developers, companies, civil society organizations, and individual partnerships. The task is key for an open data policy, since it requires the collaboration from the outside community in order to be considered successful.

This raises the question of capabilities outside of government. Open Data initiatives require the re-use of the released information by the “open data community.” This community includes ICT specialists and businesses, civil society organizations, journalists as well as regular citizens. If there is no capacity among these groups—that is to say, among the users of open data in the community, then the effort would not be considered as successful. Citizens, civil society organizations, think tanks, and journalists may not have the necessary skills to analyze and make visualizations. If so, then open government data initiatives may need to consider strategies for strengthening and enhancing skills in the wider community through training, partnerships with schools and journalism workshops, etc.

---


8 World Bank. Idem. p. 14
3.3.3 Financial Capacity

The investments required to develop or acquire the human capital that underlay the technological capabilities discussed in the previous section are not only human, they are of course financial as well. And, once again, depending on the degree of openness and involvement, more significant costs can be associated with the actions that are taken to engage the open data community. City labs, tech parks, hackathons, app contests; each can require a financial investment of limited economic resources that may competing within the different governmental interests.

One way to confront the question of financial investment is to consider costs versus benefits. There have been relatively few costs-benefit analyses of Open Data. However, a well known example concerns the release of geospatial information by the American space agency, NASA. It has been estimated to account for a large amount of public sector information (PSI)\(^9\) and it is calculated that the overall benefits of releasing it are over 700 million dollars, versus a 215 million cost. The net benefit was calculated from 87 to 180 million for 2010, at an annual cost of 15 million, which implies a return of investment between 6 and 12\(^10\). In the Danish case, it is calculated that releasing government data “gave €62m benefits against €2m cost”, and the ROI for 2010 was calculated to be a €14m benefit against €0.2m cost.\(^11\)

The costs referred to in those examples are those that accrue to the government. They leave out the costs associated with the rest of the open data community, which are necessary to acquire the necessary skills and other technologies needed for the re-use of open government data. This could be considered an investment, either for private enterprises or for Civil Society Organizations and think tanks; however, it still requires an allocation of human and financial resources.

3.3.4 Data Community

In order to be considered successful, ODPs require an active role of the re-users of information. The existence of this non-governmental community depends on the context in a certain municipality, including all sorts of actors such as developers, private companies, civil society organizations,\(^\)

---


11 Martin Tisne from the Omidyar Network. Releasing as open data in Denmark in 2002 gave €62m benefits 2005-2009 against €2m cost. ROI in 2010: €14m benefit against €0.2m cost. Available at: [https://www.omidyar.com/blog/business-case-open-data](https://www.omidyar.com/blog/business-case-open-data)
academic institutions, and citizens. Governments can take actions to bring together this existing community, strengthen its capacities and to boost its potential in order to enhance the re-use of the released data, as well as to decide jointly which datasets are the most relevant to release. It is important to mention the fact that an ODP does not only tackle the “online” community, and there are efforts being developed in order to bring in the “offline community”, so as to reduce the technological barriers for citizens to engage in the policy.
4. CASE STUDIES

In this section, we look at five cities in Latin America that have at least partially implemented Open Data Policies. The benefits of establishing an ODP would seem clear. But as we have just seen, there are barriers. Our goal here, then, is to discover how the policy started in order to derive lessons that might be useful for spreading ODP into other places. In this paper, we examined Mexico City, Xalapa and Zapopan from Mexico and Buenos Aires and Mar del Plata from Argentina. The cities were selected by our project partner the IADB due to the fact that they represent successful ODP initiatives in the Latin American region.

Our main sources of information were the interviews with the key stakeholders as well as literature review. We conducted semi-structured interviews with the digital data and open data experts in the selected municipalities who are involved in Open Data policy implementation processes. In addition to that, we conducted a series of interviews with academics, open data and open government experts from IOs and CSOs. Most importantly, the views of open data pioneers we interviewed gave us first hand information on the complexities of open data implementations and how these were overcome.

As discussed in the previous section, we identified three determining factors that have impact on open data initiatives: political, institutional and resources & capacities. We discuss each case with these determining factors in mind.

4.1 Mexico City: Open Data as a commitment to the OGP agenda

Mexico City is the capital of Mexico and it is one of a total of 32 federal entities in the country and consequently, functions as such, having its own executive, legislative (Asamblea Legislativa) and judicial branch, like the other federal states. It is situated in the central part of the country, hosts around 25 million inhabitants and it represents a big part of the national economic activity in the country. Mexico City has a very rich ICT environment, since it concentrates many of the most recognized universities in the country and the most important ICT companies are based there.

Political

The Open Data policy started in Mexico City through the creation of an Open Innovation Lab, now called the laboratorio para la ciudad in June 2013. The political initiative from the top management played a fundamental role in this creation. The newly elected mayor, Miguel Angel Mancera, asked
the current head of the lab, Gabriella Gómez-Mont to start a different initiative to “reimagine the way government and civil society could collaborate, by implementing public policy and projects that promote citizen ingenuity and talent” (Laboratorio para la Ciudad 2014a). As a result Open Innovation Lab became the center of Open data policy innovations and ODPs coordinating agency.

However, the coordination is a big issue in Mexico City. At the governmental level, the mayor of Mexico City has to “coordinate” with all mayors of the delegations within the city, which may represent higher administrative complexity to implement a cohesive policy. Also, since Mexico City functions as a state and has its own legislative branch, if the Mayor wants to propose a law or a certain regulation, it needs to follow the complete legislative process, unlike regular municipalities. Whereas this may pose a challenge to policy implementations, the superior hierarchical position of the state mayor can allow him/her to initiate new policies more easily.

**Institutional**

The challenge for the lab is to follow up on their initiatives through the measurement of the impact, and to ensure the continuity of the program. In an interview with Daniel Badillo of the Laboratorio para la ciudad, he mentioned that 50% of their budget is now funded from outside sources (the other half from the city), and that they need to prove that the program “is worth it” in order to ensure its survival and continued growth. This concern showed us that since the hierarchy between the lab and the rest of the public institutions are not structured well; the sustainability of the open data policies depends mostly on the political support.

The existence of legislation, which clarifies the roles, and responsibilities of the institutions in open data policy conduct helped policy implementation and coordination. As of this writing, an Open Data law had just been passed on 29 April 2015. The city lab supported the process. Prior to this law, each governmental agency was deciding the datasets that can be opened and released to the public and the laboratory had to ask request agencies to participate and release their data. By this new law, it is expected that the communication and cooperation will be facilitated between different ministries.

**Resources and Capacities**

The Mexico City team currently made up of 20 individuals of various backgrounds: “architects, technologists, editors, art historians, political scientists, journalists, urban planners, filmmakers, sociologists, designers, urban psychologists” (Laboratorio para la Ciudad 2014a). Although this rich human composition contributes to their success, the number of the employees is not enough given the number of tasks that they do, hence sometimes they do ask for help from volunteers when needed. As the institutions needs stability, depending on volunteer work can hinder efficiency.
On financial side, as Mr. Badillo mentioned to us that given that the mayor started this initiative, the city government is committed to adopting the project, with funding and support. So political support is proven crucial not only for the initiative to take place but also in terms of financial capacity.

The lab focuses on two main points: civic innovation and urban creativity. The latter is about city-level improvements and initiatives through the participation of individuals. It is through the civic innovation work that Open Data really comes into play. In order to ensure the sustainability of this initiative, the city has to ensure that the citizens themselves are participating. The Mexico City Lab has managed to do this by inviting citizens in various activities and initiatives. The open data team reaches out to the citizens through social media, their website, and traditional media. The mayor lends a hand whenever big announcements are to be made.

The Impacts

One such initiative is HackDF, which is a local hackathon organized by the lab using around 32 datasets (Annex 2) opened by 13 city departments and offices. Participants from different backgrounds were gathered together for 45 hours to come up with ideas. Some of the achievements of the hackathon were the creation of applications that would help facilitate the lives of Mexico City residents. Some examples of applications (Laboratorio para la Ciudad 2014b) are Ayoui, an application that would facilitate the process for administrative procedures by outlining the documents needed and SaludCDMX, which is an interactive platform to exploit and analyze data on hospitals in the Federal District of the city of Mexico. CódigoCDMX (Code for Mexico City), is an initiative together with Code for America that unites full-time developers and volunteers to design and create websites and applications for the citizens. A third is the Mexico City Open Government Platform, known as “caretaker” for the city’s open government and open data platform (Arana, 2014), uniting several local actors, with assistance from international actors, for the co-creation of solutions [2]. Lastly Data Lab (laboratorio de datos) is an entity of the lab dedicated to the development of the necessary tools [3] (Laboratorio para la ciudad, 2014a).
4.2 Xalapa: the first intermediate city in Mexico to join the National Digital Strategy

Xalapa is the capital city of the state of Veracruz, in Mexico, situated in the Gulf of Mexico. It is a medium sized city, which has around 500,000 inhabitants. The main economic drivers of the state of Veracruz are petroleum related activities, and tourism, since it is situated next to the sea. In order to identify new economic niches and possibilities, the State Department of Economy commissioned a report from the MIT to make a diagnosis, which suggested that innovation related activities represented a considerable opportunity for the State to develop. This diagnosis convinced the State government to invest on initiatives related to innovation as a driver for economic growth.

**Political**

In Xalapa, the interest of the Mayor in social media and new tools for citizen engagement contributed for the initiation and development of the ODP. The Mayor Américo Zúñiga Martínez is has a high interest to be engaged in open government initiatives. He is also known to be very active on social networks such as Twitter, as a means to have a more direct contact with the citizens of his municipality.

As Xalapa is a municipality of state of Veracruz, most of the policies implemented at municipal level are directly linked to the state approval. The existence of political alignment between the political parties in Veracruz and Xalapa facilitated cooperation between those governments. The state government has made contributions to facilitate the iLab even though there is no municipal legislation on open data. The recently launched sub-national platform from the National Digital Strategy is expected to contribute for the open data policy to flourish in Xalapa.

In parallel with political support and strong alignment with state and national government, in a short period of time a lot of initiatives have taken place in Xalapa. On the 1st of January 2014, Xalapa joined the national policy of open data of the Presidency of the Republic, becoming the first municipality in the country to publish their data on the official site [Annex 2]. With the objective of engaging the citizens to work closer to the government and helping to develop the digital economy in the city, the Open Data initiative in Xalapa started by being the first local government to join the national Open Data strategy.
Institutional

In order to deal with the institutional challenges brought by policy change, the Mayor created a specific agency called Directorate of Good Governance and Special Projects. This agency has the mandate to improve the approach to the citizens and help the efficiency of the city government.

This directorate is directly linked to the Mayor and it has 4 Departments: Electronic Government, Planning, Social Projects and Special Projects. The Department of Electronic Government has been the one working in the area of open data and created a data squadron. In the first place, the department received advice and technical support from the National Digital Strategy for the cleaning up and subsequent publication of datasets on the national portal. The department established an agreement with the Faculty of Informatics and Statistics of the University of Veracruz, which was instrumental in the creation and operation of the Municipal Technical Committee for the releasing of the data. Moreover, it coordinates with the state government agencies on data share. The Department of Electronic Government in that agency made the proposal to start the Open Data Project, as a way to engage citizens to work with the government on city problems.

The department is also responsible for inter institutional coordination and establishing strategic alliances with National Digital Strategy Coordination and University of Veracruz in order to get technical support from these two actors. As the agencies become more specialized, their expertise allows them to identify the missing policy components and tackle them more easily.

Resource and Capacities

With regards to the costs of this initiative, financial problems have never been an issue. The state government made the investment on the iLab. Xalapa organized the second Open Data Hackathon in the city in February 2015, as a way to demonstrate the importance of open data in the city. Moreover, the local leader of the Open Data strategy in Xalapa, Gerardo Pérez Gallardo highlighted that thus far the costs have not been significant because everything was made through partnerships, and they sought sponsorship to implement the hackathon. All that the city paid for were the prizes to the winners.

Although, there is not a strong civil society in Xalapa, they had meetings and presentations at various schools of software, presenting and inviting the teachers and students to participate in the projects. They pay visits to other local software companies to see collaboration opportunities. The office of Gerardo Pérez has been working closely with the University of Veracruz in order to enhance the interest and participation from current students, in order to strengthen the open data community.
Due to the novelty of the issue, participants in the hackathon lack experience, and some do not have the requisite skills for the reuse of data. Therefore the next step for Xalapa in open data will be the conduct training courses and workshops for the reuse of data, aiming all citizens. The aim would be to exploit the data to generate value, trigger innovation, and show the usefulness of open data. The first course was held on February 21 and was taught by the School of Information.

The Impacts

The impacts of open data initiatives in Xalapa are easily visible. On the 21st of February 2015, Xalapa celebrated the Open Data Day where the citizens and students were invited to create applications, data visualizations, and then publish the analysis, using open public data to show support and encourage the adoption of open data policies. During the Open Data Day in Xalapa, a hackathon was organized, in which participants devoted the entire day to the analysis of data from the website of Datos.gob.mx, preferably using those from datos.gob.mx/Xalapa. The objective was to generate friendly visualizations of the data in order to identify the problematic, and propose possible solutions. Each project was evaluated by a jury, taking into consideration its originality and impact to the citizenry.

As a result of the first two hackathons, a project designed to alert citizens beforehand at what time the waste truck will pass, and to inform them where they can find it and through an analysis of transportation data, the teachers and students found out during which time slot and on which streets do traffic accidents occur the most.

Up to now, the city has released 9 datasets (Annex 2) on the national portal, which is the only portal they use. The datasets are about: environment, economic, waste, public agencies, health, mobility, education, fixtures, and traffic accident. All of the datasets were released in a non-proprietary .csv (Comma Separated Values) file, according to the quality requirements of the National Digital Strategy. To select what type of data was to be opened first, they performed a comparative analysis in which they reviewed on one hand, open data portals of different national and subnational governments; while on the other hand, they also carried out an investigation into the possible location of useful information in the municipality. From this initial analysis, priority areas, or those that would generate greater value according to other similar initiatives in different latitudes were determined. To meet the quality requirements of the National Digital Strategy, they also worked on cleaning the data, and made a data dictionary of every single data set.

Since the open data movement started in Xalapa less than two years ago, it is difficult to observe or measure the impacts on innovation in public and private sector triggered by open data, but it does have some impacts. It is inventing new ways of looking at problems, solving together with the support of citizens. It is working with the winner of the hackathon event in improving the process of
blood donation today. For the private sector, three companies were created and are working on developing their prototypes.

4.3 Zapopan: an imported approach from San Francisco

Zapopan is a municipality of the metropolitan area of Guadalajara in the state of Jalisco in Mexico. It is situated in the west-central part of the country and it hosts around 1.2 million inhabitants. Recently, Zapopan has been considered as the “Silicon Valley of Mexico,” due to the number of international firms and foreign direct investment (FDI) in high technology production. The metropolis and in particular the municipality counted on a fairly “strong” data community before the open data policy was implemented. An important number of well-organized bike associations were also a trigger and important factor for strengthening the cohesion of the “data community” and this represented an important “enabler” of the data environment.

**Political**

The Mayor recognized the potential of the existing technological community in the municipality, during his political campaign, where he received advice from Gustavo Acosta, who is now head of the ODP policy. As Acosta explained during our interview, the mayor was previously an academic, had pursued a Master in Public Policy in Texas and he had been Minister of Social Development in the previous administration. According to Acosta, “these characteristics, background, profile and personality of the mayor were features that enabled him to be receptive to such an initiative”, and eventually decided to undertake such an innovative policy at that moment. Zapopan was the first open data implementer at municipal level in Mexico, even before Mexico City.

At the initial stage of the open government policy in Zapopan, there was not political party alignment with the national government. At the moment, there is not only political alignment with both levels of government, but also there is an alignment of Zapopan’s open data policy with the recently launched National Digital Strategy, by the Presidency of Mexico. We expect that this factor can play a favorable role for the present and future of Zapopan’s ODP. However, in the interview, Acosta stated that it is not a very crucial factor for success of ODPs, and instead the existence of a strong tech community in the city is a better determinant. He mentioned that prior to the launching of the municipal open data policy in Zapopan, he had bounds with some stakeholders, that later on joined the national government and other municipal governments, which resulted in very fruitful alliances amongst vertical and horizontal levels in government.
The change in political parties in government might change the direction of the policies in most cases. There will be elections in Zapopan next June. This will be the first case to encounter a transition of government, which will probably be a strong test for the sustainability of the open government policy. Being aware of that, Acosta commented that the office is preparing for different scenarios in order to ensure the sustainability of the policy.

Institutional

As for the legal framework, there is no existing regulation from which the ODP can be enforced within the municipal administration. It remains an executive policy, that develops on a basis of voluntary agreements and coalitions within the ministries and departments of government, in order to adhere to the initiative as a mean to improve current administrative problems through technology solutions that could be proposed by outsiders to the governmental structure.

The ODP office in Zapopan is placed under the Directorate of Innovation in the municipality, which is a subdivision of the Sub-secretariat of innovation and information technologies. There are currently three people working at the ZapopanLab, and Acosta highlighted that even though the team is very small for the magnitude of the project, the technological community with which he has strong ties, has actively cooperated to strengthen and boost the policy and its objectives. However, the agencies with weak structures and capacities might also weaken the process of policy implementation. The agency’s power relations with other institutions might be threatened; therefore Zapopan needs to develop its institutional capacities. Acosta also explained that a key enabler in order to obtain datasets from different ministries and convince the public officials to cooperate is the fact of having an “insider” in his team with previous working experience inside the governmental structure of the municipality. This allows him to easily identify the key stakeholders who are already working with datasets and who could be interested and/or open to the idea of trying a new way.

For the first hackathon held in Zapopan, called “hackathon Zapopan”, since there was no other municipality working on these issues, Acosta invited Codeando México (Coding for Mexico), a fellow data entrepreneur organization that had previously created a famous app to follow the federal legislative’s work. Acosta states they started working with the directors from different levels of government in the municipality to facilitate the access to data. He explained the difficulties they encountered during centralization of the data in the Innovation & Technology Directorate, due to the incorrect content in the datasets. Consequently, he tried to talk to the directors and convince them to release the complete data, by explaining to them that by releasing data in fact they give way to the solutions to their problems. Through this process, they started to generate an institutional change perspective where “the directors were not thinking about transparency anymore, where they
are obliged, but they are now thinking about the data with some degree of hope in order to solve their current problems.”

**Resources and Capacities**

Rather than being an implementation challenge, in Zapopan this financial partnership is expected to open the windows for new opportunities for collaboration and innovative enterprises. When asked about how the open data policy is financed, Acosta mentioned that around 80% is sustained by the municipality’ budget, and 20% by the Private Sector, in some sort of a public private partnership. So financial management of ODPs has not been a big issue in Zapopan.

The metropolitan region has a strong technological community as Acosta names it, which is composed of important and transnational ICT companies such as HP and IBM, and he explained that with time, more and more universities started to make emphasis on ICT related careers and the number of graduates from these disciplines increased through the years. He mentions that this strong community started to build itself way back, around 10 to 15 years ago.

The initial framing of the ODP in Zapopan was focused on “digital inclusion”, which Acosta recognizes, that as of today, has been the pillar that has developed the least, out of five main focuses. The second pillar is “Open Data”, following the models from other cities’ policies in the United States, such as San Francisco and New York, cases which Zapopan analyzed “in order to understand how Open Data could lead us to better products, services and solutions for our cities’ problematics”. The third pillar is the area of “co-creation”, addressing very different audiences such as journalists, urban planners and the offline community. The fourth was to tackle the technological community and industry, and the fifth pillar is “PROCOMUN”, emerged from a meeting with other labs (Secretaría Iberoamericana) with the objective of encouraging the citizenry to organize and collaborate.

There was a preexisting large and strong open data community in Zapopan, which has helped the municipality in reaching better results for the ODP. Acosta highlighted that aside from the big ICT companies, there are around 35 to 40 “tech communities” as he calls them, with names like “chavas geeks” (geek girls), “thunders”, etc.” Acosta also explained that strengthening the open data community can be a driver for investment to help the existing communities grow, spreading the knowledge of other national or international startups and entrepreneurs, and enabling an “ecosystem” in order to connect them with strategic partners, and so that they see in the metropolitan area a potential place to build their civic tech project.
The impact

The ODP has been mainly applied through the city lab called ZapopanLab (Annex 2). In order to broaden the community that participates in the policy events and initiatives, the Innovation Directorate has created a campaign called “use civic technology”, based on the concern because there was still no generalized use and participation from the citizens.

The clearest impacts of the ODP are the applications and the number datasets reused (Annex 2). Gustavo Acosta mentioned that there are 8 apps already set and functioning. Some of the most interesting apps that he mentioned are related to transport (BusKeeper) and to citizen reports on public services and infrastructure, accidents, robberies, etc (Avisora). He also highlighted that the social incubator is established and trying to boost startups and entrepreneurial processes.

Aside from the specific apps and deliverables, it is important to highlight that the case of Zapopan has been developing, even though it is a fairly new implementation with human resource constraints.

4.4 Buenos Aires: the Inspiration for Latin America

Buenos Aires is one of the 24 federal entities and the capital city of Argentina. It has around 15 million inhabitants. Like Mexico City, it has its own executive, legislative and judicial branch. It is recognized to have an active cultural and academic activity in the country and the region, representing the main education center in the country. There is a flourishing open data ecosystem in Buenos Aires whereas the initiatives at the national level are not as successful. Civil society, the media and the hacker community actively embrace the open data culture in Buenos Aires.

Political

Buenos Aires, the capital city of Argentina, is the first city in Argentina to create and implement an open government policy. Even though as in the rest of the Latin American countries, the open data process started as a dimension of transparency acts, throughout the years the image has changed and it is now more perceived as a source of innovation creating business opportunities and a fertile environment for the public policy to develop and meet with the real citizen demand. In 2009, the city’s social media strategy was initiated upon the request of the Mayor, and the municipality hired an energetic media editor named Rudi Borrmann. In this way, Buenos Aires took a step forward by
entering into the world of possibilities of the new digital world with the help of strong political leadership. As Borrmann tells open data was not a transparency issue anymore.

The initiative at city level started before national open government initiative. Argentina became eligible to join the OGP in 2013. The country is still on the stage of implementing the 1st national OGP action plan whereas the city of Buenos Aires started its open data effort years before the national involvement in the OGP framework. Even though the city of Buenos Aires has a freedom of information law, the federal government has not yet passed the bill, which has been stalled for several years now. So even though at the national level progress is slow, Buenos Aires is a case supporting the idea that as far as there is a strong political will the policy transformation can be successful.

Institutional

In 2011, the OGD (or gobierno abierto) efforts gained momentum although Mauricio Macri was elected for a second term as the Head of Government, it did not stop him from trying new things and he came up with some administrative changes. The creation of the Ministry of Modernization was one of them. In 2011 “General Directorate of Information and Open Government” was opened in Ministry of Modernization. Rudi Borrmann was appointed as the director and he started to build a network of young professionals with diverse backgrounds: public officials from the executive and legislative offices, political scientists, journalists, app developers and civil society organizations (Fumega 2013). This diverse background of the team is a component of their success.

The creation of an agency directly dealing with the adapting the policy change can solve the problem for authority however the power relations between the institutions depending hierarchy may remain challenging. The decree on "Open Government" (156/2012) was proved useful to clarify this problem as it established the basis for the design and development of the Open Data portal and the Resolution No. 190- MMGC/2012 defines the responsible body to put the technical standards and criteria for portals on which to publish the data shared by each of the information producing agencies which also helped to solve the complexity challenge of coordination. However, unclear nature responsibilities towards open data remains as a challenge in Buenos Aires (Fumega 2013).

Making correct institutional arrangements after the Open Data and Open Government Culture was officially launched, helped city open data team to step forward for the success. They created two
teams to deal with two different phases of OGD. The Open data team was designed to focus on data collection, creation, and creation of apps, while the Open Government Culture department worked to reach the community and create public campaigns for their open data initiatives (Borrmann, 2013). Their jobs were clearly defined.

**Resources and Capacities**

At the civil society level, despite being small communities some open data initiatives in the private sector emerged simultaneously. Garagelab, “Money and Politics” and “Bahia Blanca Public Expenditure” which are worth mentioning. The ideas generated by the interaction and joint projects of these enterprises contributed to the development of an open data ecosystem in Buenos Aires (Fumega 2013).

Before its official start in 2012, the open data journey of Buenos Aires started with a small group of people working in the local executive branch who were interested in OGD during Mauricio Macri’s first term as the Head of Government of the Autonomous City of Buenos Aires (Fumega, 2013). In an official visit to several cities in the USA in 2011, this group of people became more aware of the ideas about data initiatives in the world. During the drafting of the Freedom of Information (FOI) Bill, there was a noticeable interest from the people from legislative offices as well, working on free access to raw data (Fumega, 2013).

Borrmann explains that he had some fears and doubts because at the beginning neither the citizens nor officials were very familiar with the new topic. He says there was little interest coming from citizens or social media towards open government initiatives in the city of Buenos Aires, except for the interest of a couple of medium ranked public officials. Borrmann explains that they worked to create demand for data as much as they were working on the supply.

Financial constraints have never been a serious limitation for the ODP in Buenos Aires, since it has had the support from top-level politicians including the Mayor himself. In terms of structure, after the creation of the Office of Information and Open Government at Ministry of Modernization, the open data team divided into two according to their focus. The first team is focused on the technical aspects of publishing open data, while the second team is focused on creating a community of users and contributors. Even though the technical team is formed by a few number of people, they have accomplished complicated technical tasks, such as data publication and creation of portals and platforms.
The Impact

Buenos Aires is institutionalizing openness in practice through various activities. So far the City of Buenos Aires has hosted three city hackathons, with the third engaging more than 400 attendees (developers, CSOs and public servants), and recently launched “The Lab,” a co-working space for public policy and new technologies, and “Datafests.” These events, which are calls for civic participation, are just starting points to sustainable engagement. Borrmann explains they have three OGD policy pillars “Empowering people”, “Co Creating better services” and “Create an open ecosystem inside and outside the government” (Borrmann, 2015).

The city website was built using open source content management system and the digital content of data of the city is now released under the “creative commons” license to allow reuse and adaptation of the data (Dyson 2013). The government has already published a fairly substantial amount of data sets, (Annex A) 118 by May, in open, digitalized and in a re-usable format so that others can easily access and build on this public information. They are all available online on “Buenos Aires Data” portal. In the city of Buenos Aires, there are specific OGD implementations through the web apps developed. The first case is an app that works through a call center. A citizen’s call is received in the call center, is reported and then mapped. New visual tools have also been developed recently. The city government is helping the Ministry of Education to redesign the education sector. Another interesting application was developed for collecting diverse information about the cultural heritage of the city divided among many agencies to create one database gathering all data. Another app shows the locations about the public works in the city and other pertinent information such as when the project is starting and when it will be completed. The OGD implementation is not limited to those mentioned above, the dynamic process of innovation continues and each app developed takes OGD in Buenos Aires policy further.

With regards to data journalism, La Nación, one of the most recognized newspapers in Argentina, became the leading actor of data journalism in Buenos Aires winning one of eight awards in the Data Journalism Awards 2013 competing with better-funded journalist teams. While the Hack/Hackers Buenos Aires chapter started by a journalist in 2011 has grown its membership to 1,700, making it the second largest chapter in the world (Chao, 2013).

4.5 Mar del Plata: Open Data to boost the Knowledge Economy

Mar del Plata, Argentina, is one of the 134 municipalities from the Province of Buenos Aires, Argentina. With 700,000 inhabitants, Mar del Plata has a strong education and ICT ecosystem, with five main universities, 92 software enterprises and 440 micro businesses. The ICT sector produces
800 million Argentinian pesos (88 million USD) per year and provides more than three thousand jobs.

**Political**

Renato Rosello, head of the open data policy in Mar del Plata, explains that the ODP in Mar del Plata depends on two key factors. The first was that “it required a strong political decision from the head of the government, the Mayor Gustavo Pulti (2007 - ) to develop a more holistic initiative on opening government data, in order to boost innovation for the city”. The second factor was the fact that a plan for the future of the city was developed: Mar del Plata 2030. This was an initiative from the municipality, with the help of the Consulting Firm CEPA that had also worked on these kind of plans for Punta del Este and Florianópolis. The core of the plan is to promote a new productive economic model based on knowledge and innovation, which could position Mar del Plata at an international leader.

The Mar del Plata Creative City initiative is a well-defined strategy. It was designed with three main objectives: the first one was industrial development, through the construction of a tech & informational park for creative industries which will host enterprises that have to do with technology, software, hardware and other related services; the second objective was to boost ICT vocations, providing several free programming workshops targeting young students since primary school up to bachelors and professionals and social appropriation of the new profile for Mar del Plata, and the third objective was to develop and spread amongst the society a new vision of entrepreneurial culture for the city.

**Institutional**

Since the year 2000, the municipality of Mar del Plata published sensible data with regards to budgetary issues, such as public acquisitions and declarations of assets, but the information was produced and managed under the Ministry of Economy, not in a transversal office, and there was not a high response from citizens to consult and reuse that information.

The initiative of Mar del Plata as a digital and creative city was designed under the leadership of a brand new office, which detached from the budgetary ministry where it was placed before, and turned into a more crosscutting department: the Secretariat of Technical Development and Administrative Improvement. The office has two main tasks to develop for Mar del Plata to make it a creative and digital city and develop e-government to improve public services. Renato Rosello the founder of a local ICT Association (ATICMA) was appointed as the director. The creation of a transversal office and the fact that the head is an expert with links to the ICT community has helped for the success of the ODP in Mar del Plata.
Resources and Capacities

Although there is a strong ICT sector in Mar del Plata, there is an unsatisfied demand of ICT professionals, which embodies an important opportunity to develop a new economic sector for the city. The current municipal government has identified this niche and has set the objective to position Mar del Plata as a leader on ICT’s and innovation, both in the country and internationally.

The impact

Although the Open Data strategy for Mar del Plata can be considered to be fairly new and in an implementation phase, some specific results can already be perceived with regards to innovation and getting citizens closer to their government and services. Others parts of the initiative are still in the process of being developed, which are targeting the long-term (the tech-park).

The plan to develop a new culture and economic activity in Mar del Plata is taking actions both for the long-term and also short-term. Within the long term strategies, are the development of ICT’s vocations amongst the new generations and the Tech & Information Park, which is tackling the private sector to develop a new economic model based on knowledge and innovation. It will provide services such as capacity building, incubation, technological transfer and business consultancies.

The Open Data initiative is also exploring other actions that can have an immediate impact for the government and the citizens, through events such as hackathons and app contests, and also the Open Data Portal for the city (Annex 2). The Tech Park is meant to be the place to host and facilitate the encounter of the Open Data community to co-work and co-create innovation projects.

From the app contests and hackathons, new web sites and apps have been developed in order to bring citizens closer to the government and to improve the delivery of public services. Some of the applications are:

- Complaint management system CAV: allow the citizens either by a telephone call (147), a website or an app, to report anomalies or file complaints about public lightening, traffic lights and abandoned vehicles. The government has committed to solve the complaints, and the results can be observed in their website. One third of the population used it during the first year.

- Transport: App MyBus. Started in 2012 by Mario Lucchelli, then still a student at UTN University in Mar del Plata. With more than 250,000 users now.
• Culture: App EnVivoMardelPlata created by Gonzalo Benoffi as a result of the first hackathon in Mar del Plata in 2014, the objective of this app is to facilitate information for citizens with regards to the cultural activities in the city.
• Waste: GIS web site to explain citizens what kind of waste can be recycled and when and where the recycling buses will collect the waste.

As for the initiatives that tackle the inclusion of the private sector, the tech park is the most important project that the municipality is currently coordinating. It has not been built yet, but the determined land has already been allocated and the project is in process. Also, free trainings and workshops are facilitated for students and the citizenry.
5. FINDINGS AND RECOMMENDATIONS

John Kotter has famously written about transformation processes with application to both the public and private sectors. He outlines a number of steps that change processes need to go through to achieve their goals. These steps offer a blueprint for overcoming exactly the kinds of challenges that face the ODPs. In this section, we reflect on the findings from our cases in light of a modified version of Kotter’s recommendations to offer some actionable insights and recommendations.

Figure 4. Steps to make an ODP sustainable

Source: own elaboration, based on John Kotter’s transformation model

5.1 Many Routes to Creating the First Spark

Open Data is a relatively young idea and each of the cases we discuss are relatively early adopters of this idea. A first question, then, concerns how the idea reached these places and whether there are lessons to be learned for how to spread the word about open data in the first place. In other words,
we can ask, where did the spark come from? Where was the source of inspiration? This can come from within the government itself, from outside sources, such as other cities, international programs, or a national policy already in place.

In the cases of Zapopan, Buenos Aires and Xalapa, certain individuals within the government bureaucracy (front-line workers) had seen the initiatives being implemented in other countries, which prompted them to propose a similar program in their cities. In other cases, the idea comes in through an external source, sometimes by happenstance (such is the case of Mexico City, with the mayor becoming interested in the topic through a TED talk by the current head of the lab).

Top-down influence, either from a national digital strategy (e.g. Red Mexico Abierto) or an international movement such as the Open Government Partnership, has the potential to instigate an Open Data strategy on the part of local governments. However, given the relative novelty of the cases we studied, we are unable to determine its current impact. It is likely that this will have more importance for future adopters.

Lastly, another source for the idea of an Open Data strategy for municipalities are from the local developer or IT community, civil society organizations, transparency groups, and others. This falls under a demand-driven approach for Open Data, rather than a supply-driven one. Surprisingly, this was not a factor in our cases.

5.2 Establish a Sense of Urgency and a Vision by Framing Open Data around Innovation

Perhaps the most widely cited part of John Kotter’s framework is his argument that achieving transformative change requires leaders to bring a sense of urgency to the process. That sense comes from a feeling that resources--and in particular, time itself--are scarce and that a failure to act now to change the *status quo* will destroy opportunities. Kotter also highlights the need for leaders to establish a clear vision for the change process. A vision helps the leader to guide the team members into the desired direction, develop a coherent strategy to follow and communicate effectively with other stakeholders. In order to attain political alignment around the ODP and engage the governmental and non-governmental stakeholders, establishing a clear vision becomes a crucial step, by making explicit why the project is relevant, how will it help the different parties involved and what would be the cost of not pursuing the challenge.
From our case studies, it seems that there is a very clear answer to how to establish this sense of urgency and vision. In each case, political leaders ultimately framed open data policies in terms of innovation.

The reason for this becomes clear when it is seen in light of the various factors discussed in the third section of the paper. Indeed, on closer examination, framing open data around innovation has many advantages. From the perspective of power, each of the other framings can be seen to have adverse implications for the balance of power. The most obvious of these is transparency. It is not exactly surprising that political leaders would be wary of any innovation that could expose them to criticism. However, framing around innovation and economic growth shifts the discourse toward positive agenda around which political leaders can build a broad coalition with very few potential risks. For instance, we saw in Mar del Plata, where the economic focus is currently on tourism and fisheries, that the government wanted to articulate a new economic direction. Open data was a vehicle consistent with this goal and so a framing around the potential for innovation helped significantly to mobilize political and institutional support.

We could also observe a similar case in Xalapa, where the State Department of Economy commissioned a report from MIT, which suggested that innovation related activities could be viewed as an alternative for economic growth. This report helped to shift the framing away from one based largely around transparency and toward one based around innovation. As one interviewee in Xalapa stated: “When you talk about transparency many owners do not give information to others who still look at information as a source of power and therefore do not share their information”. However in Mexico City, where open data was framed in terms of public sector innovation, entrepreneurship and state efficiency, the tone shifts. As one informant put it, the framing shifts: “it can help them do their job better, and go home earlier”.

A framing around innovation, finally, is also important to address the challenges posed by resources and capabilities. All of the justifications for open data assert that it provides a return on the investment for the public at large through the provision of better services and efficiencies. But the logic of innovation is broader and is a far easier sell when it comes to mobilizing support: the benefits of innovation can be shared among key stakeholders which makes it easier to bring them on board. For instance, in Buenos Aires, as in other Latin American cities, the ODP started as a dimension of transparency, but it has evolved to a framing of innovation, which can create business opportunities and the fertile environment for collaboration in order to meet the citizens’ demands.
5.3 Form a Powerful Guiding Coalition of Allies in Government

The next step, according to Kotter’s transformation framework, is to engage a small but influential group of stakeholders to support the project. In the first place, it is crucial to engage those actors that could eventually oppose resistance to the policy for a variety of reasons. These stakeholders can become a powerful coalition who participate in developing a strategy and engage more broadly to work together toward the common project. This coalition can help the leader to develop a common aspirational objective to communicate with all the stakeholders involved in the policy. In our cases we observed that it is important to build a network of support from key stakeholders within the structures government (and with the non-governmental community).

In each of the cases, political leadership was a decisive factor in overcoming the challenges confronting the open data movement. In particular, we can see that combining a framing around innovation with political buy-in from the head of the local government was crucial toward confronting the institutional challenges and toward setting priorities for resource allocation.

First, implementation of open data initiatives requires investments in government know-how and equipment for which the buy-in of political leaders is an obvious need. Just as important though is the need to confronting institutional barriers and particularly those that involve the structure of the bureaucracy itself. As we have just seen, the best way to do that, it seems, is the creation of a transversal office, which can coordinate communication and resource allocation. But doing so effectively requires that office to have the clear backing from a mayor or top administrator. This is particularly important toward overcoming resistance from agencies that may be reluctant to get on board. For instance, in Buenos Aires, the Mayor had promised during the election campaign to create an office within the modernization directorate, which would be dedicated to enhance collaboration across different departments. This was crucial in creating the foundation for the open data ecosystem there.

Once there is a political leader or “political champion”, the leader then needs to put in place a small group of allies who share a commitment to the program. What is important in this step is to frame Open Data in such a way that would encourage agencies to support the initiative. Based on our research, promoting Open Data as a way to help solve problems (both in terms of facilitating work and solving problems within the agencies concerned, and outside, for the citizens) and improve public services at a low cost seems to be the most useful and viable course of action. As of this writing, in none of the cases we studied, aside from Mexico City (which passed a law on 29 April 2015) was there a law or directive requiring them to participate and open their data. In our cases, an individual (often the head of the implementing agency or the data laboratories in the city) is appointed to reach out to the stakeholders within the government.
5.4 Empower Stakeholders

Next, the leader of the initiative and the small group of guiding allies needs to communicate throughout government structures and beyond, into the Open Data Community. At this stage, it is very important to build a network among key constituencies and stakeholders including ministries, the private sector, universities and citizens. In doing so, it is also very important to make it as easy as possible to join the transformation effort by getting rid of obstacles to change, changing systems or structures that could undermine the vision, encouraging risk taking and nontraditional ideas, activities, and actions.

5.4.1 Transversal Office

A thread common to each of our cases concerns an organizational approach. In all but one case (Mexico City), the municipality created a transversal office, which acted as a resource to various government agencies and entities in the collection, warehousing and management of open data. By “transversal” we mean that these offices have the authority to coordinate important elements of the open data with all relevant actors. The most obvious benefit of this has to do with the organizational and institutional challenges that come with opening data. The transversal office can most efficiently facilitate the coordination between the leadership of the open data policy and the different departments and levels of government. We found that in the cases that do not have this structure of government, it becomes more complicated for the Open Data office to convince the different public actors to engage voluntarily into the initiative (assuming that there is no compulsory regulation to oblige them to do so). For example, in the case of Mar del Plata, before implementing a formal Open Data strategy in 2011 they already had released datasets mostly related to budgetary issues and the office depended directly to the Department of Economy. However, they did not encounter a high usage of the released data. After they transformed it into a transversal office and applying a comprehensive policy, they have considerably increased the audience and re-users for the opened data, which has evolved from simply budgetary issues, to a broader scope.

The creation of a transversal office has an important influence on resource allocation since the office, typically, has independent resources (provided through the mayor) they are able to address some of the resource concerns that agency heads may feel when asked to participate in open data initiatives. The resources are offered as a service costing the agency heads relatively little. As we also mentioned in section 3, capacity concerns include not only resources inside of government, but also the presence of an open data community with the capacity to reuse the data that has been made available. In Xalapa the Department of Electronic Government--which has been given transversal responsibility for open data initiatives--has reached out to cooperate with local universities to share
datasets with the goal of building a local open data community. The Xalapa office has proven effective at managing resources in other ways as well, particularly by acting as the primary interface between the region and national offices with important resources.

5.4.2 Enlist Support from National and Multilateral Entities

The role of national level actors in lending support for local government open data initiatives varied in our cases depending on the size of the place. In the smaller cities, having support from higher levels of governments facilitated the implementation of Open Data strategies. The reasons have mainly to do with resources and capabilities, but also—to a degree—with addressing institutional challenges. Specifically, Xalapa relies on the technological path from National Digital Office. Support from the national level has also been important to achieve political alignment in Xalapa. Politically, Xalapa’s local leaders belong to the same party as the national government. This meant a certain degree of alignment already existed which helped to achieve consensus around a path. Perhaps more important than the political support, however, was the technological support that the national policy provided. They were able to take advantage of already existing template for the data portal that has been created there.

First, implementation of open data initiatives requires investments in government know-how and equipment for which the buy-in of political leaders is an obvious need. Just as important though is the need to confronting institutional barriers and particularly those that involve the structure of the bureaucracy itself. As we have just seen, the best way to do that, it seems, is the creation of a transversal office, which can coordinate communication and resource allocation. But doing so effectively requires that office to have the clear backing from a mayor or top administrator. This is particularly important toward overcoming resistance from agencies that may be reluctant to get on board. For instance, in the cases of Buenos Aires and Zapopan, the Mayors had promised during the election campaign to create an office dedicated to coordinate collaboration across different departments. This was crucial in creating the foundation for the open data ecosystem in both cases.

5.4.3 Empower the Open Data Community

Once the initiative gets going, simply opening data is not enough. The measure of an Open Data policy cannot be reduced to the number of datasets being published. This is a “supply-driven” initiative. According to the literature and the interviews we conducted, the measure of success is to build a community around the Open Data policy that will, as mentioned in the definition, re-use the data and create value out of it. In other words, it is important to reach out to the community and change towards a more “demand-driven” policy. This ensures a higher impact and a more
sustainable program in the long-term. In four of our cases—Mexico City, Buenos Aires, Zapopan and Mar del Plata—there already existed a strong local ICT savvy community (such as private companies, developers, hackers, and universities). For instance in Buenos Aires, the city had a significant hacker or developer community prior to the launching of the ODP, and they have been engaged in open data activities such as organizing open data conferences and international events. This is also the case of Zapopan and Mar del Plata. The challenge is to tackle this “knowledge base”, which can be done through the different activities. The creation of an Open Data portal is a first step, by which citizens can get access to government data. However, solely launching an Open Data Portal is certainly not enough, especially to boost participation from citizens and their active involvement to reuse the data and create economic and social value.

An important element of this outreach is to develop this community through partnerships with local schools and universities. Such was the case with Xalapa, Mar del Plata and Zapopan. These three cities have made a strong focus on students from the local universities. Not only does this enhance the re-use data community to be created and encouraged, but also allows the students to be sensitized to the issues and the added value of Open Data. In the end, the creation of an active and vibrant “data community” increases the potential for boosting entrepreneurship through the creation of companies that make use of the data being opened by the government.

5.5 Creating Opportunities for Short-Term Wins Through Events and by Leading with “Low-Hanging Fruit”

Kotter explains the need to establish opportunities for short term wins succinctly: “Most people won’t go on the long march unless they see compelling evidence within 12 to 24 months that the journey is producing expected results.” Open Data initiatives may be easy to get started—at the minimum, all one needs to do is post some data online—but for the initiative to take off, there must be proof within a relatively short period of time that doing so is worth the effort.

A central theme to the Open Data movement has been the use of any number of events and activities that are meant to draw in the open data community and create excitement. The Hackathon is a good example. These events let citizens and other participators know what was happening, what progress the government has achieved and also make open data visualized to more people. For example, in the hackathon of Xalapa, a group of volunteers from the local universities focused on analyzing the datasets about transportation to examine during which time slot and on which streets do the traffic accidents have the highest possibility to occur. With the results, citizens can avoid the accidents at their best try. In the cases of Mar del Plata, Zapopan, Buenos Aires and Mexico City, the hackathons have also been an important means to enhance participation and the creation of apps.
Events like these are relatively simple to produce. The results may or may not be compelling in terms of the actual outputs. But what they can do is create this sense of small wins. Even if an application developed in a hackathon is not ultimately developed, it shows to important observers that the possibility exists. And it gives participants an immediate sense of connection to the broader project.

A second theme we detect in the cases is the benefit of starting with what we refer to as the “low hanging fruit”—that is, data that lends itself to immediate application and relatively simple manipulation techniques. The data about transportation, trash and weather conditions are usually the first group of datasets to be released, for they are close to the daily life of citizens and easy to be used in improving the quality of life. For instance, Buenos Aires has already published a fairly substantial amount of data sets, including garbage collection data showing collection areas allocated to each company; transportation data showing Stations and Metrobus routes; air quality data giving Daily Briefing average levels of carbon monoxide, nitrogen dioxide and harmless particulate matter less than 10; the executive budget containing all expenses for the development of decentralized central government entities; and land use data with information on building typology and uses of all parcels of land in the city, among others. All of them can allow citizens to have the “fruit” immediately.

The data involved in such efforts tends to be less politically sensitive, but it remains the most viable in terms of impact on the daily lives of the citizens: transportation, waste or sanitation data are those that are initially released. Another strategy is to start with crowd-sourced initiatives. All of our cases are examples of how engaging with the citizens can help increase the interest for an Open Data strategy within government agencies.

5.6 Consolidate and Institutionalize Open Data Practices

Finally, Kotter discusses the need to consolidate and institutionalize the initiative into day to day operations and procedures. “Change sticks, “ he writes, “when it becomes ‘the way we do things around here’, when it seeps into the bloodstream of the corporate body.”

Provided with the necessary resources from both the local municipal budget and other sources for support, the development of complete engagement and cooperation between government and the community would be necessary. The continued interest and willingness of the community to participate in this initiative is needed in order to ensure the sustainability of the project. Hackathons, city labs, tech parks, and other events can help to generate interest and momentum, but eventually these must give way to more formalized organizational and institutional structures.
Creating a solid legal framework helps to achieve sustainability, especially when the municipality is going to change its leader. Because the Open Data Policies have relied heavily on the “political will” or leadership in Latin American countries, it is reasonable to suspect that if the leader is changed, the Open Data Strategy will probably be changed accordingly. Now, as we know, there is no city that is performing the Open Data Strategy has experienced the change of leader (Zapopan will be the first one, which will have elections this June). Transparency laws can be reinforced and their scope expanded so that open data policies are encouraged. In Latin America, the focus of the existing regulation has been mainly transparency, accountability and freedom of information. However, it is relevant to update these regulations, broaden them to sub-national level, and to include not only transparency, but also the other elements of open government: participation and collaboration. Legal infrastructure is very relevant for the success of open data policies. It is equally important to eliminate the political and security concerns about making data more available such as risk of data reuse such as privacy and security breaches with data protection regulations.

The building of a support network is particularly important for the agencies that will be directly affected: the first ones who shall be opening data. Some agencies might feel threatened to release such data, as it might reflect poorly on them or reduce their power. Which is what happened in Buenos Aires. In the case of Buenos Aires, the city’s police department was initially on board with its Open Data initiative and they shared city crimes data allowing an innovative mobile tool developed by a private company but later they changed the format of the document they regarded as open data into .pdf format due to the potential impact of the data on itself and limiting the reuse with a sense of insecurity (Chao, 2013).

Policymakers should always keep in mind that the impact created is important and valuable even though the results are not easily measured. The uncertainty surrounding the value of innovation through open data makes it a risky investment (Zuiderwijk & Janssen 2014). Understanding how much value is created from open data initiatives is unfortunately not straightforward, particularly in how public value is generated. Although public value is not a new term, it is seen as the product of benefits produced by government, where public value is derived from the direct usefulness, fairness, and equitability of such benefits to a variety of stakeholders. There are many levels of observation for public value such as individual, group, institutional, and societal. Often, value created from transparency, accountability, and collaboration have many other intangible impacts such as trust, well-being, or being more informed.
6. CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH

This capstone research project looks at how local governments in Latin America overcome the challenges of implementing open data policies through a review of the related literature, and case studies on the implementation of the Open Data policies in five cities: Mexico City, Xalapa, and Zapopan in Mexico, as well as Buenos Aires and Mar del Plata in Argentina.

The case studies produce a few clear findings. First, while there are many benefits of open data—including transparency, participation and collaboration—local leaders are wise to frame the open data initiative around the idea of innovation. Doing so helps to align political support from a wider spectrum of stakeholders and, in particular, among potentially weary government officials. A second finding concerned creating a transversal office to implement the initiative. This office is essential for communicating with key stakeholders—inside and outside of government—and can bring resources and know-how to the table helping to build support from within government.

Towards the end, the report identifies six steps in order to facilitate the challenges of implementing an Open Data policy. These are: 1. Creating the spark to promote Open Data; 2. Establishing a sense of urgency and a vision by framing Open Data around innovation; 3. Forming a powerful guiding coalition of allies in government; 4. Mainstreaming Open Data: how to sustain Open Data efforts shifting from a supply-driven to a demand-driven program. 5. Creating opportunities for short-term wins through events and by leading with “Low-Hanging Fruit”; 6. Consolidating and institutionalizing open data practices.

Due to time and resource constraints, this research project concentrated on these 5 cities. Research currently being conducted within the auspices of many international organizations such as the World Wide Web Foundation’s Open Data Research Network, are deepening the body of knowledge in this field. It is important that further research be done in the spirit of the Open Data, that is “available, accessible, reusable and redistributable.”

Further research should consider how theories of change and implementation apply at various levels. It would be fruitful to examine the challenges of implementation across policy areas such as education, health or transportation policy and what lessons can be learned from empirical examples. Overall, while policy-makers can plan to pass new policies, our findings raise some questions for future discussions.
REFERENCES


Bates, J., 2012. This is what modern deregulation looks like: co-optation and contestation in the shaping of the UK’s Open Government Data Initiative. Available at: https://www.zotero.org/groups/open_data_research/items/SG6UUJ25


Dassen, N. et al., 2012. Open Government and Targeted Transparency: Trends and Challenges for Latin America and the Caribbean. Monografías del BID (Sector de Instituciones para el Desarrollo. División de Desarrollo Institucional); IDB-MG-137.

Davies, T. and Frank, M., 2013, There’s no such thing as raw data. Exploring the socio-technical life of a government dataset, Available at: https://www.zotero.org/groups/open_data_research/items/QE4UIGIS


Gallardo, G.P., Xalapa, on the international map open data and technological innovation, Available at: [http://xalapa.gob.mx/blog/xalapa-en-el-mapa-internacional-de-datos-abiertos-e-innovacion-tecnologica-perez-gallardo/](http://xalapa.gob.mx/blog/xalapa-en-el-mapa-internacional-de-datos-abiertos-e-innovacion-tecnologica-perez-gallardo/)


Innovation Journal, volume 19(2).


IMF, R.S., 2014. World Economic Outlook 2014: Legacies, Clouds, Uncertainties, Available at:


Laboratorio para la Ciudad, 2014a. ¿A lab for the city?

Laboratorio para la Ciudad, 2014b. HackDF festival de datos de la ciudad de México.


McKinsey Global Institute, 2011. Big data: The next frontier for innovation, competition, and productivity.


Obama, B. 2013. Remarks by the President at Applied Materials, Inc. - Austin, TX. The White House Press Office. 05/09/2013


Open Knowledge Foundation, 2015a. What is Open? Available at: https://okfn.org/opendata/.


Sharon S. D., 2012. A Realistic Look at Open Data. Center for Technology in Government at University at Albany/SUNY.


RESOURCES

International Organizations

Creative Commons: http://creativecommons.org/tag/open-government
Démocratie Ouverte: http://democratieouverte.org
Etalab. French Data Lab: https://www.etalab.gouv.fr/tag/dataconnexions
European Public Sector Info. Platform: http://www.epsiplatform.eu/
Inter-American Development Bank: http://publications.iadb.org/handle/11319/3198
OECD Public Sector Info Observatory https://www.oecd.org/governance/
Open Data Barometer: http://barometer.opendataresearch.org/
Open Data Index: http://index.okfn.org/
Open Data Institute: http://opendatainstitute.org/
Open Data Research: http://bibliography.opendataresearch.org/
Open Government Data: http://opengovernmentdata.org
Open Government Partnership: http://www.opengovpartnership.org/
Open Government Standards: http://opengovstandards.org/
Open Knowledge Foundation: https://okfn.org/opendata/
Open Source: http://opensource.com/
Sunlight Foundation: http://sunlightfoundation.com/
World Bank: http://www.worldbank.org/
World Wide Web Foundation: http://webfoundation.org/

Academic Research Institutes

Harvard University. Berkman Center: http://cyber.law.harvard.edu
NYU. Center for Technology in Gov http://www.ctg.albany.edu
NYU The GovLab: http://www.opendata500.com/
Oxford Internet Institute: http://www.oi.ox.ac.uk/

Open Platforms

Open Government Partnership: http://www.opengovpartnership.org
## Government Sites

### National/Federal Government

**United States**
- https://www.data.gov/

**France**
- Etalab
  - https://www.etalab.gouv.fr/

**Mexico**
- Presidency
  - http://www.presidencia.gob.mx
- National Digital Strategy
  - http://datos.gob.mx/

**Argentina**
- Presidency
  - http://www.argentina.gob.ar

### State Government

- **Veracruz State Government (Mexico):**
  - http://www.veracruz.gob.mx/#close
- **Puebla State Government (Mexico):**
  - http://www.puebla.gob.mx/
- **Jalisco State Government (México):**
  - http://www.jalisco.gob.mx/
- **Province of Buenos Aires (Argentina)**
  - http://www.gba.gob.ar/

### Municipal Government

- **Mexico City Government**
  - http://www.df.gob.mx
- **Mexico City Data Lab.**
  - http://datosabiertos.df.gob.mx/
- **Municipal Government of Xalapa**
  - http://xalapa.gob.mx/
- **Municipal Government of Zapopan**
  - http://www.zapopan.gob.mx/
- **Municipal Government of Buenos Aires**
  - http://www.buenosaires.gob.ar/
- **Municipal Government of Mar del Plata**
  - http://www.mardelplata.gob.ar/
### List of Interviews

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Name</th>
<th>Sector</th>
<th>Institution</th>
<th>Country</th>
<th>City</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/11/2014</td>
<td>Skype</td>
<td>Emilene Martinez</td>
<td>Intl Org</td>
<td>Open Government Partnership</td>
<td>Latin America</td>
<td>Mexico City</td>
<td>Civil Society Network for Latin America</td>
</tr>
<tr>
<td>10/02/2015</td>
<td>Skype</td>
<td>Jorge Díaz</td>
<td>Govt</td>
<td>Presidency of Mexico</td>
<td>Mexico City</td>
<td>National Digital Strategy. Mexico Abierto</td>
<td></td>
</tr>
<tr>
<td>18/02/2015</td>
<td>Mexico City</td>
<td>Almudena Ocejo</td>
<td>Academia</td>
<td>CCS-CIESAS</td>
<td>Mexico City</td>
<td>IRM report for Mexico’s OGP Action Plans</td>
<td></td>
</tr>
<tr>
<td>18/02/2015</td>
<td>Mexico City</td>
<td>Daniel Badillo</td>
<td>Govt</td>
<td>Mexico City Lab</td>
<td>Mexico City</td>
<td>Communication Manager</td>
<td></td>
</tr>
<tr>
<td>18/02/2015</td>
<td>Mexico City</td>
<td>Federico Ramirez</td>
<td>Think tank</td>
<td>Fundar, Center for Analysis and Research</td>
<td>Mexico City</td>
<td>Technological Innovation for Advocacy</td>
<td></td>
</tr>
<tr>
<td>18/02/2015</td>
<td>Mexico City</td>
<td>Ana Cristina Ruelas</td>
<td>Civil Society</td>
<td>Articulo 19</td>
<td>Mexico City</td>
<td>Right to Information Program</td>
<td></td>
</tr>
<tr>
<td>18/02/2015</td>
<td>Mexico City</td>
<td>Cynthia Michel</td>
<td>Academia</td>
<td>CIDE</td>
<td>Mexico City</td>
<td>Researcher</td>
<td></td>
</tr>
<tr>
<td>19/02/2015</td>
<td>Mexico City</td>
<td>Clay Johnson</td>
<td>Private Sector</td>
<td>Better Technology</td>
<td>USA</td>
<td>Altanta</td>
<td>Chairman</td>
</tr>
<tr>
<td>19/02/2015</td>
<td>Mexico City</td>
<td>Sabine Junginger</td>
<td>Academia</td>
<td>Hertie School of Governance</td>
<td>Germany</td>
<td>Berlin</td>
<td>School of Design Kolding</td>
</tr>
<tr>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Marco Daglio</td>
<td>Intl Org</td>
<td>OECD</td>
<td>France</td>
<td>Paris</td>
<td>Public Innovation Observatory</td>
</tr>
<tr>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>David Gómez Alvarez</td>
<td>Academia</td>
<td>State Government</td>
<td>Mexico</td>
<td>Guadalajara</td>
<td>Assistant Secretary for Planning and Evaluation</td>
</tr>
<tr>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Eduardo Calvillo Gamez</td>
<td>Govt</td>
<td>Municipality of San Luis Potosi</td>
<td>Mexico</td>
<td>San Luis Potosi</td>
<td>Chief Information Officer</td>
</tr>
<tr>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Julio Carballo</td>
<td>Govt</td>
<td>State of Puebla</td>
<td>Mexico</td>
<td>Puebla</td>
<td>Transparency State Office</td>
</tr>
<tr>
<td>No.</td>
<td>Date</td>
<td>Location</td>
<td>Position/Role</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
<td>-------------------</td>
<td>---------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Andrea Barenque, Head of the Open Government State Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Arturo Suárez, Head of Historic Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>20/02/2015</td>
<td>Mexico City</td>
<td>Renato Rosello, Head of the Open Data policy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>20/02/2015</td>
<td>Xalapa</td>
<td>Guillermo Cejudo, Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>21/02/2015</td>
<td>Xalapa</td>
<td>Gerardo Pérez, Department of Electronic Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>21/02/2015</td>
<td>Xalapa</td>
<td>Zazil Reyes, Good governance Director</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>24/02/2015</td>
<td>Mexico City</td>
<td>Lourdes Morales, Director of the Accountability Network (Red por la Rendición de Cuentas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>24/02/2015</td>
<td>Mexico City</td>
<td>Eduardo Bohorquez, Director</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>24/02/2015</td>
<td>Mexico City</td>
<td>Luis Carlos Ugalde, Director</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>26/02/2015</td>
<td>Washington, DC</td>
<td>Karen Mokate, Partnership officer at Partnerships and Resource Mobilization Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>26/02/2015</td>
<td>Washington, DC</td>
<td>Itzel Barron, Partnership officer at Partnerships and Resource Mobilization Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>26/02/2015</td>
<td>Washington, DC</td>
<td>Nicolás Dassen, Senior Modernization of the State Specialist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>26/02/2015</td>
<td>Washington, DC</td>
<td>Amparo Ballivian, Lead Economist</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>26/02/2015</td>
<td>Washington, DC</td>
<td>Sandra Moscoso, Capacity Building for Open Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Date</td>
<td>Location</td>
<td>Organization</td>
<td>Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>-----------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>27/02/2015</td>
<td>Washington, DC</td>
<td>Intl Org</td>
<td>Sunlight Foundation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>27/02/2015</td>
<td>Washington, DC</td>
<td>Intl Org</td>
<td>World Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>27/02/2015</td>
<td>Washington, DC</td>
<td>Intl Org</td>
<td>Open Government Partnership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>27/02/2015</td>
<td>Washington, DC</td>
<td>Think tank</td>
<td>Center for Data Innovation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>02/03/2015</td>
<td>New York</td>
<td>Academia</td>
<td>GovLab</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>03/03/2015</td>
<td>Washington, DC</td>
<td>Academia</td>
<td>Georgetown University</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>10/03/2015</td>
<td>Skype</td>
<td>Intl Org</td>
<td>Inter-American Development Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>11/03/2015</td>
<td>Paris</td>
<td>Intl Org</td>
<td>OECD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>11/03/2015</td>
<td>Paris</td>
<td>Intl Org</td>
<td>OECD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>13/03/2015</td>
<td>Skype</td>
<td>Intl Org</td>
<td>USAID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>13/03/2015</td>
<td>Skype</td>
<td>Intl Org</td>
<td>USAID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>19/03/2015</td>
<td>Skype</td>
<td>Academia</td>
<td>Harvard Kennedy School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>01/04/2015</td>
<td>Skype</td>
<td>Govt</td>
<td>Municipality Buenos Aires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>10/04/2015</td>
<td>Brussels</td>
<td>Intl Org</td>
<td>OGP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>15/04/2015</td>
<td>Skype</td>
<td>Intl Org</td>
<td>World Bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>25/04/2015</td>
<td>Skype</td>
<td>Govt</td>
<td>Municipality of Zapopan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interview By Sector, Institution and Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Academia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCS-CIESAS</td>
<td>Almudena Ocejo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIDE</td>
<td>Cynthia Michel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guillermo Cejudo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lourdes Morales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgetown University</td>
<td>Robert Bednarzik</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GovLab</td>
<td>Robyn Caplan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvard Kennedy School</td>
<td>Pedro Rangel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hertie School of Governance</td>
<td>Sabine Junginger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Civil Society</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Articulo 19</td>
<td>Ana Cristina Ruelas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transparency International, Mexico</td>
<td>Eduardo Bohorquez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico City Lab</td>
<td>Daniel Badillo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality Buenos Aires</td>
<td>Rudi Borrmann</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality Mar del Plata</td>
<td>Renato Rosello</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality of San Luis Potosí</td>
<td>Eduardo Calvillo Gamez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality of Xalapa</td>
<td>Gerardo Perez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zazil Reyes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality of Zapopan</td>
<td>Gustavo Acosta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality of Tegucigalpa</td>
<td>Arturo Suárez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidency of Mexico</td>
<td>Jorge Díaz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of Puebla</td>
<td>Andrea Barenque</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Julio Carballo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of Jalisco</td>
<td>David Gómez Alvarez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>International Organization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-American Development Bank</td>
<td>Horacio Terraza</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Itzel Barron</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Karen Mokate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nicolás Dassen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECD</td>
<td>Alessandro</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Organizations</td>
<td>Members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Government Partnership</td>
<td>Alonso Cerdan, Emilene Martinez, Paul Maassen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunlight Foundation</td>
<td>Lindsay Ferris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USAID</td>
<td>Alana Marsili, Katherine Townsend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World Bank</td>
<td>Amparo Ballivian, Oleg Petrov, Sam Lee, Sandra Moscoso</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Sector</td>
<td>Better Technology, Clay Johnson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Think tank</td>
<td>Fundar, Center for Analysis and Research, Federico Ramirez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metrica Pública, LuisCarlos Ugalde</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center for Data Innovation, Joshua New</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 2: Datasets and Apps of Cases

Mexico City
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Date</th>
<th>CSV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENT IN THE MUNICIPALITY OF XALAPA</td>
<td>Data on conditions affecting the environment in the city of Xalapa</td>
<td>April 08, 2015</td>
<td></td>
</tr>
<tr>
<td>ECONOMIC BUSINESS START DEVELOPMENT IN XALAPA</td>
<td>Information on starting a business in the city of Xalapa</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>PUBLIC CLEAN IN XALAPA</td>
<td>Information on recycling in the city of Xalapa</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>PUBLIC AGENCIES IN XALAPA</td>
<td>Public offices addresses in the city of Xalapa</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>MEDICAL UNITS AND HEALTH SERVICES IN XALAPA</td>
<td>SEIVER medical units in Xalapa and Health Services</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>MOBILITY IN THE CITY OF XALAPA</td>
<td>ZAT macro population Transportation Analysis Zones in the city of Xalapa Veracruz</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>INEGI STUDY POPULATION OF XALAPA</td>
<td>Information INEGI 2010 in which, population, economy, education, etc. is</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>LUMINARIES IN XALAPA</td>
<td>Luminaries from the streets of Xalapa</td>
<td>April 09, 2015</td>
<td></td>
</tr>
<tr>
<td>XALAPA TRAFFIC INFORMATION</td>
<td>Occurrences of traffic accidents in the city of Xalapa the first half of 2013 and 2014, Traffic Information</td>
<td>March 15, 2016</td>
<td></td>
</tr>
</tbody>
</table>
Zapopan

Zapopan Lab
Laboratorio ciudadano fomentando la innovación abierta en el municipio de Zapopan. Emprendimientos y acercamientos de la ciencia y la tecnología.

25 Datos
Buenos Aires

Mar del Plata