

DIGITAL GOVERNMENT AS A VEHICLE FOR REDESIGNING PUBLIC SERVICES



THE LEGAL AND DESIGN GENESIS OF MEXICO CITY'S SINGLE SIGN-ON SYSTEM

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What are the challenges, opportunities, and decision making tradeoffs that bureaucrats face when designing public sector innovations within resource-constrained governments? Over the winter 2022 and summer 2023, MIT GOV/LAB's Governance Innovation Initiative worked with six graduate student fellows and various public sector innovation labs, agencies, and other actors in the Global South to co-produce practitioner-friendly case studies that illuminate context-specific innovations. The first pilot case was researched by Mariama N'Diaye, as part of her Morningside Design Academy Fellowship with the MIT GOV/LAB, while the first cohort of summer research fellows were launched in collaboration with Priscilla King Gray Public Service Center (PKG) and MIT International Science and Technology Initiatives (MISTI).

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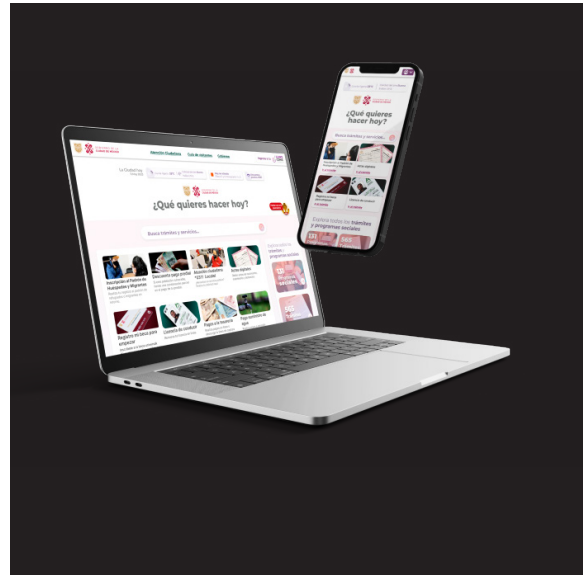
Executive Summary

This case study discusses the evolution of an online digital government tool called Mexico City Key. In just over a year, the tool evolved from an idea in the mind of a government bureaucrat, Eduardo Clark, director general for digital government at Mexico City's Digital Agency for Public Innovation (ADIP), to a platform that allows its more than 5.5 million unique users to apply for public services such as social programs, permits, licenses, and registrations. This case study tracks the evolution of Mexico City Key from Clark's perspective. It also discusses the development of the legal environment that enabled the tool. Furthermore, it illuminates ADIP's role in redesigning how residents apply for public services.

Background and Context

In 2019, the Digital Agency for Public Innovation (Agencia Digital de Innovación Pública) was formed by an act of Mexico City's Congress titled the Digital Operation and Innovation Law (Ley de Operación e Innovación Digital Para la Ciudad de México) [A]. The founding purpose of the agency was to help reduce government corruption by making more municipal data open to the public. Much of its day-to-day operations are handled by Eduardo Clark.

Clark studied political science and economics at Mexico's Instituto Tecnológico Autónomo de México (ITAM) before working in public sector roles focused on data analysis and data infrastructure for public programs. He served for four and a half years in Mexico's Office of the President. During



Digital government services portals. Photo courtesy AIDP.

this time, one of his roles was managing the redesign of the payment system for Prospera, the country's largest social development program, which has tens of millions of beneficiaries. He also worked on the National Digital Strategy, which he described as being akin to what ADIP does, but for the entire country.

Clark helped shape the structure and focus of ADIP. He worked with Mexico City's legal department to draft the foundational Digital Operation and Innovation Law that gave legal backing to the agency and its work. He assembled the technical teams that developed mobile apps for the city's residents. Under his leadership, ADIP facilitated access to the internet by adding thousands of public WiFi hotspots around the city. He is also the architect of Mexico City Key (Llave CDMX), with which residents of Mexico City can apply for public services using a single username and password. These public services include dozens of social programs such as food assistance and education programs and hundreds of permits, licenses, and registrations, collectively called procedures (trámites).

This case study explores Clark's role in redesigning how residents of Mexico City apply for public services. It further details his work crafting the legal environment that enabled ADIP and Mexico City Key providing the advantages of digital government to Mexico's largest city.

Summary of Key Findings

The section **Redesigning Public Services** discusses the reason why Clark directed members of his team to focus on redesigning applications for public services soon after ADIP was founded (and soon after he began his tenure as director general for digital government). In particular, he understood that redesigning applications to public services enjoyed broad support across political parties, allowing him to increase the agency's credibility. Clark believes that choosing which applications to redesign and when should be based on the greatest potential to improve a user's experience, but should also reflect current social needs. Political needs are also considered given the agency's role in executing the agenda of the mayor. This section further explains how Clark is able to leverage the agency's proximity to the Office of the Mayor to push for broad redesigns.

The section **Legal Backing: the Agencia Digital de Innovación Pública** focuses on ADIP's roles and responsibilities as established by the 2018 Digital Operation and Innovation Law. Had the agency had access to a legal team that included members with backgrounds in technology, this work would likely have been easier, as discussed in the subsection X-Road's Fully Connected Design. This section also discusses how Clark learned that a fully connected system, such as the Estonia X-Road system, would be difficult to implement in Mexico City because of the limited technical capabilities of the city's other government entities.

The section **Evolution and Advantages of Mexico City's Single Sign-on System** presents the current design of Mexico City Key as a single sign-on system, in which a single set of credentials is used to log in to multiple entity websites. The subsection Advantages outlines how the choice to design this type of system was partly based on Clark's belief that, while it requires a large up-front investment, building strong technical capabilities within ADIP is preferable to splitting investment across government entities or contracting out services to private companies. In the subsection Public Reaction, Clark highlights the value of focusing on Mexico City Key's marketing when he explains how the public initially misunderstood the tool to be a product, rather than a tool to interact with products.

In the section **Potential Changes to ADIP's Legal Landscape**, Clark presents his opinion that the powers that ADIP has, while admittedly broad, should not be revoked. In particular, this section discusses the agency's powers with respect to discontinuing digital systems designed by other entities and requisitioning data from other entities. Clark believes in making changes to ADIP's operations to reduce the potential of abuse of power by the agency. For example, he believes that there should be a formal process for government entities to follow when developing a digital tool to ensure the tool works with Mexico City Key and fits into the wider ADIP technology ecosystem. ADIP would have no reason to discontinue a new digital system if the government entity followed the formal process. As another example, Clark believes that there should be a formal process for requisitioning data systems and information and that there should be a method of determining who approved the requisition, whether the data was duplicated, and if the data got destroyed at the end of its use cycle.

Methodology

This case study draws on nine interviews with seven bureaucrats within Mexico City's Digital Agency for Public Innovation. Three bureaucrats were mid-to-high-level staff (director general level) and four were mid-level staff (at the levels of executive director, director, and below). All interviews were in person. While the interviews provided insights into the political, institutional, and technical successes, failures, and structures of ADIP and Mexico City Key, this research is not without limitations. In particular, the researcher did not formally interview any users of Mexico City Key outside of ADIP bureaucrats because this study is aimed towards understanding the evolution of Mexico City Key's technology and legal backing and the agency's role in redesigning the process of applying for public services, neither of which involved significant input from users of the tool.

Learning Case

Evolution of ADIP's Mission

The year before ADIP was founded, Claudia Sheinbaum Pardo was inaugurated as *Jefa de Gobierno de la Ciudad de México*, a title often simplified to mayor, but which translates to Head of Mexico City Government. She promised to harness the momentum of her historic election as the city's first female mayor to build a more innovative Mexican capital. In her inauguration speech, she promised her administration would focus on innovation and rights. The idea for a public innovation agency already existed by the time Sheinbaum delivered her inauguration speech, in which she foreshadowed innovation spurred by a “new dynamic of information, communication, and technology.” But the idea of Mexico City Key did not yet exist [B]. It would materialize only after the appointment of ADIP's leadership, the formation of the agency's mission, and the realization, by Eduardo Clark, of the technical shortcomings of the city's government entities.

Mayor Sheinbaum appointed José “Pepe” Merino to be ADIP's director and tasked him with focusing on a broad swath of open government topics, such as developing an open data portal and receiving public engagement through new digital tools. However, Clark and Merino believed the focus of the agency should be more ambitious, encompassing what is instead referred to as “digital government,” or the use of digital technology to provide, enhance, and simplify a government's services. In particular, they conceived of a tool that would, on the front end, provide a simple user experience to facilitate residents' interactions with the government, while, on the back end, allow government entities to communicate information related to those interactions between themselves. For example, according to Clark's early idea for a digital government tool, a resident could apply for a driver's license on a government entity's website, which could retrieve necessary information for completing the application, such as proof of residence, from a previous application sent to a different government entity.

The benefit of focusing on digital government was clear to Clark: those who interact with the government the most tend to be low-income residents of Mexico City—the majority of applicants to the city's social programs. Low-income residents can be greatly impacted by having to apply for a public service in person because of the potential lost wages resulting from the need to take off work.

Clark knew creating such a digital government tool was an ambitious plan. He would have to craft laws that would enable it, secure political support to pass the laws, and seek buy-in from the government entities he aimed to connect—not to mention assemble a multidisciplinary team of lawyers, software engineers, and product designers.



“In her inauguration speech, she promised her administration would focus on innovation and rights. The idea for a public innovation agency already existed by the time Sheinbaum delivered her inauguration speech, in which she foreshadowed innovation spurred by a “new dynamic of information, communication, and technology.” But the idea of Mexico City Key did not yet exist.”

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ADIP wanted to improve residents' experience when applying for public services by connecting government websites and databases in a way that would be novel for Mexico City. To bring this vision to life, Merino and Clark had to convince Sheinbaum of its value. The pair explained the benefits that would be received by the city's low-income residents, but they chose to center their arguments around those benefits that aligned with the mayor's platform, namely, reducing government corruption. They were able to convince the mayor to change the focus of ADIP to digital government, in particular by citing the fact that replacing in-person applications with online ones would reduce the opportunities for bureaucrats to give preferential treatment to applications in return for bribes.



ADIP has developed mobile apps to facilitate residents' access to digital government services. Photo via Adobe.

Redesigning Public Services

While Eduardo Clark was developing his idea for Mexico City's digital government tool, the agency was facing political pressure to produce results. He knew that designing the tool would require extensive time and coordination between ADIP's software, product, and legal teams. Therefore, Clark directed his team in the meantime to begin redesigning public services.

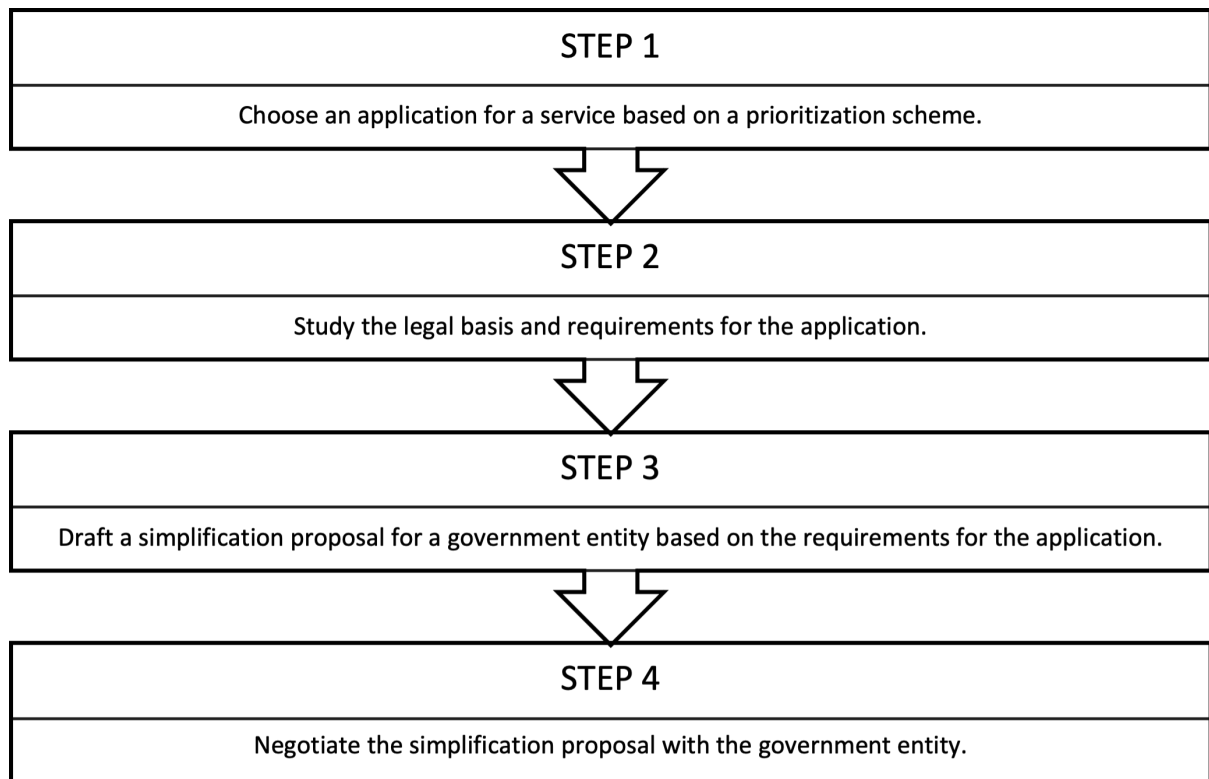
Redesigning a public service in this context refers to simplifying the application process for a public service. Directing the agency's efforts in this way was politically pragmatic: simplifying the application process for a public service or making the application accessible online enjoyed broad support across political parties. By making progress here, he could show that ADIP was off to a strong start. In the process, the agency would be fulfilling what Clark referred to as its mandate to simplify public services, as laid out in the Operation and Digital Innovation Law, which puts ADIP in charge of: "promoting, formulating, implementing, executing, monitoring and evaluating the policies, programs, guidelines and actions regarding regulatory improvement, administrative simplification, improvement of the management and regulation of procedures and services of Public Entities (Chapter II, Article 14, Section XXVIII)."

Berenice Tapia heads ADIP's Strategic Simplification team. Each public service is administered by one or more entities, and Tapia works closely with these entities to perform the simplification of public service applications—both paper ones and ones that were later digitalized and made available through Mexico City Key.

Another responsibility of Tapia's team is to manage a platform, designed and operated by ADIP, called the Electronic Register of Procedures and Services, or RETyS (*Registro Electrónico de Trámites y Servicios*). Each government entity can log in to the platform and register each service that it offers. For each service, the entity can include information such as a description of the application process, its requirements, deadlines, costs, and whether it has different types (e.g., for a driver's license, an application can correspond to different licenses for operating different types of vehicles). The team works closely with this database, as it provides an overview of the procedural landscape of Mexico City, and one of the team's roles is to make sure this system is accurate and up to date. Another role of the simplification team is to ensure that each of the

services in RETyS has a legal basis. For each service, there exists written information, such as a law, code, or regulation, that describes the service. It is important for this information to be centralized so that the simplification team can know exactly what is required of an applicant applying for a service.

While simplification can vary greatly between application processes for services due to factors such as their complexity and the government entity that administers them, Tapia described the simplification process that her team performs as having the following steps.



In step one, the team chooses an application for a service based on a prioritization scheme. Generally, the higher frequency at which residents apply for a service, the higher it is prioritized. Clark said that he will sometimes handpick services based on social or political factors. In one case, ADIP prioritized services related to public health during the Covid-19 pandemic.

In step two, the team studies the legal basis and requirements for the application. This includes not only the information that is requested from the applicant, but also the time that the applicant has to complete the application and whether it is part of a series of applications that has prerequisites or is a prerequisite for another application. This information tells the team which requirements can be eliminated, condensed, or otherwise altered. Tapia also noted the importance of this step in establishing credibility with government entities later on in the process. For example, studying the requirements and the legal basis of the application gives the simplification team the vocabulary related to it, which facilitates communication with the government entity.

In step three, the team drafts a simplification proposal for a government entity based on the requirements for the application. At this stage, Clark may review the proposal. He said that it is not uncommon for him to steer the proposal in a more aggressive direction considering ADIP's mandate to simplify government processes.

The simplification proposal may suggest removing certain requirements from the application. For example, Mexico City Key has a method of validating the identity of a user. If an application requires identity validation, and that application is to be digitalized and uploaded to the Mexico City Key website, then the government entity may consider validating the user's identity through Mexico City Key instead of, for example, asking for the user's identification card.

In some cases, the simplification team may propose removing a requirement for information that is redundant. For example, one requirement may ask for a photo of a user's identification card, while another requirement may ask for proof of residence. If the entity accepts an identification card as a proof of residence, then a requirement to submit proof of residence is redundant.

In other cases, the simplification team may propose removing a requirement for information that is not strictly needed for the application. For example, while proof of residence may be important or useful information for an application for renewing a driver's license, it may not be crucial for an application for getting an event permit.

The simplification team may also propose extending the lifetime of a license or service. For example, an entity may require a license to be renewed every year. Extending the lifetime of the license can make things easier for an applicant and reduce the application volume for the entity. In some cases, an application for a service can include a request for information from an applicant late in the application process. In other cases, the application may prompt the applicant to provide or request information to or from a government entity late in the application processes. Tapia said that these are opportunities to improve the user experience. She explained that the timing of when information is requested is important because asking for information late in the process can cost the applicant more time than asking for information at the beginning. Gathering information or making requests of an entity takes time, and Tapia insisted that an applicant should know of all of these and other time-intensive steps at the beginning of the application process to allow them to prepare accordingly.

In other cases, the proposal can include a recommendation to digitalize an application, as not every government process is suited to digitalization. For example, an emergency hotline may not lend itself to being digitalized because its usefulness is based on providing people an opportunity to speak to someone immediately. As another example, records that require providing biometric data, such as a birth record that requires fingerprinting, cannot feasibly be completed online since the average Mexico City resident does not have a secure fingerprint scanner.

In step four, the team negotiates the simplification proposal with the government entity. Tapia provided some advice for engaging in this negotiation, which includes centering the benefits to the entity. Such benefits can include improving the experience of the entity's users, saving time and administrative costs. For example, by digitalizing information, entities can more easily find documents that would otherwise have been paper, which would save the entity time during an audit.

She also acknowledged that government entities can be resistant to change. In particular, she noted that entities expressed a fear of not being able to properly authenticate applications without the traditional method of using a paper form. Therefore, she recommended being respectful but firm when negotiating the proposal, and not being afraid to insist on certain improvements if the entity at first expresses concern about changing their application processes.

When government entities are particularly reluctant to accept a proposal, Clark is not afraid to move up the chain of command. He will step in and reiterate the value of the proposal with Tapia. If that does not work, he will firmly suggest that the entity take the issue to the mayor. This is one of the benefits of an agency that explicitly works to advance the mayor's agenda—reminding the entity of that relationship can usually speed things up.

Clark recounted other instances in which government entities were reluctant to change their application processes. For example, some expressed concern that providing digital public services would make it difficult for those with limited technology skills to interact with the government. To this, Clark responds that digitalization does not result in completely removing in-person resources and paper applications. Instead, he hopes that digitalization leads to a reduction in the workloads of bureaucrats who would otherwise have to spend time processing all of an entity's applications by hand. By freeing up their time, Clark expects that they, and the government entity at large, will be able to give applicants more attention and provide better services. As another example, Clark hears entities argue that transitioning to online services will reduce the service fees commonly collected by the entities. Visibly frustrated, Clark explained that making this argument is an acceptance that the entity would rather maintain the status quo than provide a better user experience to the people they are tasked with helping.

The service fee is just one example of how money puts pressure on the simplification process. Another is how certain applications for public services give bureaucrats the opportunity to receive kickbacks in exchange for moving a stage of the application forward. Clark recalled an example of reforming an application for restaurants to receive an alcohol license. Mexico City is split into boroughs (*alcaldías*, in Spanish) and before the reform, when a restaurant applied for an alcohol permit, the application was sent to the borough for approval. Clark learned of instances in which bureaucrats would accept or demand a kickback in order to have the permit approved. Clark suggested a reform in which restaurants would receive alcohol permits automatically upon submitting certain paperwork. In this new system, the borough would then have the opportunity to check that the paperwork was valid, and if not, shut the restaurant down.

Anticipating resistance, Clark devised a way of gaining support from Mayor Sheinbaum. He called a meeting of members of chambers of commerce with business interests aligned with the restaurant industry. He convinced them to make a case to the mayor to support the proposed reform. The mayor saw its value, and Clark set about proposing the reform at large, including to those who he expected would oppose it. When individuals voiced their opposition, he informed them



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that the proposal had support from the mayor and he suggested that they take their dissenting opinions to her. Clark was able to implement the reform, but reflecting on this experience, he said that it would have been difficult, or even impossible, without the mayor's support.

Legal Backing: the Agencia Digital de Innovación Pública

While Berenice Tapia was simplifying public service applications, Eduardo Clark was focused on designing Mexico City's digital government tool. He was inspired by a system developed and maintained by Estonia called X-Road. According to the Baltic nation's innovation website e-Estonia, the X-Road system is a tool that allows government authorities to securely exchange data, allowing the nation's "various public and private sector e-service information systems to link up and function in harmony" [C]. The website further claims that each government authority "administers its own data separately and data is not duplicated," and that "X-Road can be used regardless of what technology an authority uses." The X-Road system allows each of the government authorities to maintain a level of autonomy in terms of their database technology.

X-Road's Fully Connected Design: As Clark explained, one way of thinking of this type of system is a fully connected network where each government authority, or entity, is connected to each other entity in a way that allows data to be securely exchanged. The unifying factor between these entities is not the database technology that they use to store data, but rather the set of protocols that allows the data to be transferred between entities. To ensure that this would work in Mexico City, Clark understood that the authority for an entity to be able to exchange data with another entity would have to be given legal legitimacy. And even creating ADIP would require a legal backing, so Clark collaborated with the legal department of Mexico City to begin drafting a law to establish the agency and its roles and responsibilities.

Working with the legal department was not without its challenges. For starters, the lawyers did not have technical backgrounds, and Clark often found it difficult to communicate his technical, operation, and even policy goals to them. On the one hand, bringing in the legal team towards the end of a design process meant taking significant time to explain the technical details that led to his design choices. On the other hand, involving the legal team during the design process would only slow him down more. He described a tension between himself and the legal team, which wanted to create regulations that would be virtually impossible to abuse. He worried they would make the system unduly complex for the vast majority of users. Despite these challenges, together they were able to write the law that Clark believed would enable Mexico City Key.

The Digital Operation and Innovation of Law: The law, called the Digital Operation and Innovation Law, went into effect on December 31, 2018. It states that "the objective of the agency will be to design, coordinate, supervise and evaluate policies related to data management, open government, digital government, technological governance and governance of connectivity and the management of the Government of Mexico City's infrastructure" [Chapter II, Article 11]. The law further establishes the power of the agency to "manage citizen participation and advocacy platforms in matters of procedures and services of Mexico City," in anticipation of Mexico City Key as an online tool to allow users to apply for public services online [Chapter II, Article 14.V].

Not only did the law establish the roles, responsibilities, and powers of ADIP, including its power to create an online tool related to applying for public services, it also laid the legal foundation for how that tool might exchange data. The so-called "interoperability principle" found in Article 5, section XII of the Digital Operation and Innovation Law reflects Clark's early idea of a fully-connected system like that of Estonia's X-Road. Section XII and its preamble read, in part:

“The guiding principles to which the operation and digital innovation of data management, strategic use, open government, digital government, technological governance and governance of connectivity and the management of infrastructure in the City, will be subjected, will be the following:

Interoperability principle: [Establishes] generation of standards and technical platforms for collaboration and exchange of data and technological platforms between dependencies of the Public Administration of Mexico City with the purpose of streamlining procedures and [use] of information in terms of procedures, services, opening and analysis of data and software development.”

Clark pointed out a key portion of this section: “between dependencies of the Public Administration of Mexico City.” For a fully connected system to work, government entities must be able to exchange information between themselves.

The language of the law also reveals Clark’s expectation that government entities would have “technological platforms” on which they would collaborate. He had hoped these entities would have their own technical teams to manage their databases and work with ADIP to implement a fully connected system. However, he later learned that this would not be the case. This presented a choice: convince each entity to strengthen their technical capabilities, which could include updating legacy systems and hiring technical staff, or change the structure of the envisioned tool to accommodate for the lack of technical capability.

Evolution and Advantages of Mexico City’s Single Sign-On System

A digital government tool similar to Estonia’s X-Road system is not suitable for every city government, a conclusion that Eduardo Clark made once he began designing such a tool at ADIP. While other parts of the agency were working on simplification and digitalization efforts, Clark was rethinking the foundation of the city’s digital government tool to be a “single sign-on system” through which users would create a single username and password that they could use to complete government applications on multiple entity websites.

The Hub and Spoke Design: Instead of having each government entity capable of communicating data directly to each other entity, like in Estonia’s fully-connected system, Clark conceived of an idea that can be modeled as a hub and spoke. The hub represents ADIP, while each spoke represents a connection to a government entity. A user logs into a government entity’s website using their Mexico City Key credentials and provides data to complete the application for the public service. Each government entity owns its own data, which is stored by the hub in a database corresponding to the entity. If a first government entity’s application requires information that the user had already provided to a second government entity, the first entity communicates this to Mexico City Key, which points the first entity to the database for the second entity where the required information is stored. In this system, Mexico City Key acts as an intermediary between entities when an entity requests data. Furthermore, that data is not duplicated, or even transferred; instead, Mexico City Key tells a requesting entity where to look for the data, reducing opportunities for data to be mutated.

Discussion Questions:

Question 1: What are some ways of increasing the base of technical, operation, and policy knowledge of a municipal legal team to ensure they understand the goals of the innovation agency?

Question 2: What would you consider when making the choice between either convincing each entity to strengthen its technical capabilities or changing the structure of the envisioned tool to accommodate for the lack of technical capability?

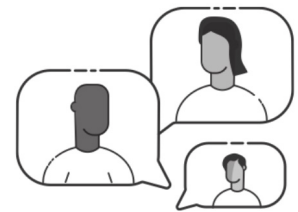
Advantages: One of the key advantages of this system is that data can be accessed across entity databases. Another is that, while it requires a relatively large up-front investment to develop the technical capabilities of the hub, the spoke systems need not invest significant resources in terms of software development, database management, hiring technical staff, or updating legacy systems. Furthermore, because expertise is centralized, the marginal cost of performing technical tasks such as developing software can be reduced by maintaining a dedicated technical team. Clark explained that, from the beginning, a core tenet of ADIP has been austerity. He firmly believes that making a large up-front investment to bolster ADIP's technical capabilities, rather than splitting investment across government entities or contracting out services to private companies, will pay off in the long run.

Public Reaction: When Mexico City Key was first launched, the initial public reaction was not as favorable as Clark had hoped. He explained that the root cause of this reaction was in the public's misconception that Mexico City Key was a product, rather than a tool to interact with products.

Mexico City Key was launched a few months before the Covid-19 pandemic, connecting users to a handful of the products that ADIP had worked to digitalize in their first months of existence, including one related to Covid-19 testing. The Mexico City Key website was never intended to offer Covid-related services. It was merely a way for a user to set up their username and password. ADIP intended for residents to use their Mexico City Key credentials to access Covid-19 services on the city's public health website. But some logged in to the Mexico City Key website and became frustrated when they could not find services there.

Clark recounts that for months afterwards, Mexico City Key remained misunderstood. In response, ADIP added a catalog of products accessible through Mexico City Key on the tool's website. The catalog included descriptions of products accompanied by which government entity websites to visit to access them. This helped dispel the misconceptions and left Clark with a better understanding of how to market the tool.

CURP and Mexico City Key's Unique Key: Even with a single username and password, the system was still missing a crucial element: a unique key that is common between each of the entity databases. Having a username serve as the unique key is an obvious choice. However, this choice presents a problem; namely, it offers no value in terms of verifying the identity of a user or verifying that the user only has one account. In a system that has a username as a unique key, a user could create multiple accounts, leading to duplicates in the system.



“Instead of having each government entity capable of communicating data directly to each other entity, like in Estonia's fully-connected system, Clark conceived of an idea that can be modeled as a hub and spoke.”

In Mexico City, most applications for public services ask for a user's CURP (Clave Única de Registro de Población), a unique identifier for Mexican citizens and residents. Clark made the CURP the unique key for Mexico City Key, which eliminated the duplicate problem, since the CURP is associated with only one person. Using the CURP, Mexico City Key can generate a digital signature for each user account that has provided it, and this digital signature can be used to verify each user account and identity.

The ideas behind Mexico City Key had changed greatly from a system that enables the communication of data between government entities to one that centralizes applications for public services and databases of government entities in one tool with a single sign-on system and verification provided by a digital signature. However, linking government entities and databases in this way was not anticipated by the Operation and Innovation Law, and Clark recognized that he and ADIP's legal team had to draft another law to provide the legal basis for the new conception of Mexico City Key.

Enabling the Single Sign-On System

Clark and ADIP's legal team drafted another law titled the Digital Citizenship of Law of Mexico City which went into effect in Mexico City's Official Gazette on January 9, 2020 [D]. As Clark explained, one of the key purposes of this law was to provide a legal basis for an electronic signature. The law states that the "electronic signatures that said applicant has may be linked to their Citizen ID" (Chapter IV, Article 38). Furthermore, the "Electronic Signature associated with the Citizen ID will be accepted by the Public Administration and the Mayoral Governments as if it were a document with an autograph signature" (Chapter IV, Article 41). This is important for Mexico City's single sign-on system because it allows users to sign documents that are linked to their unique Citizen ID (in practice, their CURP), and importantly, because it ensures a government entity can send a document that another entity can verify is signed, and therefore trustworthy.

Just as the ideas behind Mexico City Key changed over time, so too did the legal landscape related to digital government. Because the Operation and Innovation Law was written with a fully connected system like Estonia X-Road in mind, Clark has wondered in what ways this and the Digital Citizen Law are overly broad, which could present opportunities for abuse of power.

He believes that the laws give ADIP too much authority and said that he and others are working to add guardrails that would prevent abuse of ADIP's power. Without saying which portions of the laws he would amend or remove, he pointed to the unilateral power that ADIP has in its relationship with government entities.

For example, Article 14, section V of the Operation and Innovation Law grants ADIP the power to: "[m]anage the platforms for citizen participation and incidence in matters of procedures and services of the City." Here the law is not specific to a particular platform for participation and may therefore be interpreted as all platforms or tools for citizen participation. Under Clark's interpretation of the law, ADIP is able to decide if a digital system should exist or not. Even if another entity designs a digital system,



Digital drivers license. Photo courtesy ADIP.

the agency has the power to discontinue that system. Clark said that the most common use of this power has been to modify a digital tool developed by an entity before the tool's launch. He said that the modifications usually boil down to making sure that tools developed outside of ADIP align with the Mexico City Key model, so that these tools can, for example, be used to properly generate a digital signature.

“Clark has wondered in what ways this and the Digital Citizen Law are overly broad, which could present opportunities for abuse of power.”

Clark admitted some entities have had strong reactions when ADIP has used this power in the past. He said entities that have had strong reactions are those that have maintained robust systems and data management practices without oversight from other entities within the government. These relatively data-capable entities are therefore reluctant to modify their tools. But relationships with these entities have improved as Mexico City Key's model has matured and shown value.

Discussion Questions:

Question 3: Can you anticipate these laws being abused? In what way?

In discussing the broad powers of the agency, he noted that ADIP is able to requisition data systems and information, such as personal information, from other government entities. Sections IX and X grant ADIP the power to “pass judgement on, in the terms that the policy on the matter indicates, the acquisition of information and communication technology in each Entity” and “[r]equest from each Entity all the information generated by them, in strict adherence to the provisions related to the protection of personal data and security established in the laws and policies on the matter.” Clark says that this power is often used for data analysis purposes, such as in response to the mayor or someone within a government entity such as the Ministry of Finance or the Mexico City Police requesting that ADIP generate an analysis of how a particular policy is performing.

Question 4: What consequences do you think ADIP could face if these laws are revoked?

On the one hand, this type of power may have been useful when operating within a fully connected system whose effectiveness relies on ensuring that the data systems of government entities are able to work together and maintaining a minimum level of technical capabilities. On the other hand, even within this type of system, the law may grant ADIP too much authority over other government entities.

Potential Changes to ADIP's Legal Landscape

A new mayor of Mexico City will be elected in 2024, and Clark foresees his time at ADIP ending, putting pressure on him to address the gaps in ADIP's legal landscape that he admitted could allow abuse of power at the hands of the agency's leadership. He does not believe that ADIP should lose these broad powers, but he offered some suggestions on how to reduce the potential for abuse of power.

With respect to ADIP's power to discontinue digital tools created by other government entities, he believes that a new regulation should be created to establish a formal process that government entities have to follow in order to develop a digital tool. This way, entities are subjected to a certain standard for technology development, ensuring whatever they develop will work with Mexico City Key and fit into the wider ADIP technology ecosystem. ADIP already has veto power for technology procurements requested by other government entities, ostensibly to ensure the same interoperability with current systems. Currently a single person within ADIP, its director general for legal affairs and regulations, makes the decisions to discontinue a government tool and veto technology procurements.

To address the agency's ability to requisition data systems and information from other government entities, Clark suggested drafting a regulation that formalizes the process. He also believes that this process should have more auditability so that there is a way of determining who approved the requisition, whether the data was duplicated, and if the data got destroyed at the end of its use cycle. In his opinion, the entities that should have the power to request such audits include Mexico City's legal affairs department and its office of the general comptroller, which is tasked with controlling and evaluating the public management of government entities.

Clark also points out that there is nothing in the current laws that requires existing systems to be compliant with current or newly created ADIP systems. He has been able to sway entities to change their systems to be compliant, but through political rather than legal power. While not related to potential abuse of power, Clark also believes that updating ADIP's legal landscape should give ADIP the power to mandate compliance. This would ensure that all technology in the city fits into the Mexico City Key model and works with the agency's other tools.

The guardrails that Clark suggested adding would require input from Mexico City's Congress. In short, he explained, he and ADIP's legal team would have to draft an initiative and send it to the public administration committee of Congress. The committee would review the initiative before passing it on for a vote by the legislators.

Addressing the gaps in Mexico City's legal landscape is not all Clark has planned before he leaves ADIP. He also has some ideas for how Mexico City Key could be improved. The first idea is a "citizen file" that would allow Mexico City Key users to see the information that they have provided to various government entities, all in one place. Currently, if a user wants to view information they have provided to a government entity, they have to log into the entity's website and find the pending application for which they provided the information. With a citizen file, there would be no need for a user to remember exactly which entity they provided the information to or which service it was related to if they want to view or retrieve it.

Clark's second idea is creating a way for Mexico City Key to interact with and provide information to third-party institutions at the request of a user. Just as an entity may request a wide range of information from an applicant for a public service, an institution such as a bank may request at least some of the same information. When a user identifies information that exists in Mexico City Key's database and is being requested by a third-party institution, the institution could request the information from Mexico City Key. Once the user approves of the information transfer, Mexico City Key could provide the requested information to the institution, thereby saving the user the time of providing it on their own.



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Conclusion

When Claudia Sheinbaum was elected mayor in 2018, she promised to harness the momentum of her historic election as the city's first female mayor to build a more innovative Mexican capital. In her inauguration speech, she declared her administration would focus on innovation and rights. Sheinbaum stepped down from her role as mayor during the summer of 2023 to start a campaign for the presidency. If she wins her party's primary, more likely than not Eduardo Clark will join her campaign, and if she wins the general election, she will likely appoint him to a role in the federal government.

I attended Sheinbaum's final rally as mayor, which was held in Mexico City's *Monumento a la Revolución* public square on June 15, 2023, the day before she formally resigned to pursue her party's nomination. I had not yet conducted a single interview for my case study, having arrived in Mexico less than a week before. The previous day, the first day that I stepped foot in ADIP's office in the historic center of Mexico City, the conversations with staff gravitated more towards the heat wave passing through the city than the woman who was at the top of ADIP's hierarchy.

The heat was oppressive. Still, the mayor succeeded in packing the public square. I look back at that day and wonder if I witnessed the first step towards another historic election—the beginning of a journey not only for Claudia Sheinbaum and Eduardo Clark but the innovation landscape of Mexico as a nation. And while developing a digital government tool for the nation would not be without its own unique challenges, the story of Mexico City Key would serve as an indispensable guide.

Responses

Question 1: What are some ways of increasing the base of technical, operation, and policy knowledge of a municipal legal team to ensure they understand the goals of the innovation agency?

- / Response 1: Clark's advice when working with a municipal legal team is understanding that they are risk-averse and therefore reluctant to leave their comfort zone. This philosophy stands in direct opposition to that of a municipal innovation agency, whose work often centers on creating and implementing new designs, pushing residents and the city government out of their comfort zones. Anticipating this resistance, Clark suggested not involving the legal team until after ADIP's designs are implemented, therefore compelling the legal team to find justification for ADIP's design at a final or near-final stage of the design.

Question 2: What would you consider when making the choice between either convincing each entity to strengthen their technical capabilities or changing the structure of the envisioned design to accommodate for the lack of technical capability?

- / Response 2: This choice boils down to either convincing an entity to change or changing ADIP's design to accommodate the entity. Clark believes that, when making this choice, a key consideration is the importance of the specific design element that prompted the choice. For example, if the overall design becomes infeasible when ADIP cannot implement the design element, he believes the agency should compel the entity to change and use ADIP's resources to facilitate that change.

Question 3: Can you anticipate these laws being abused? In what way?

- / Response 3: One of Clark's fears is that the laws could enable someone within ADIP to generate a database with residents' personal information, without a real need for that database to exist.

Question 4: What consequences do you think ADIP could face if the laws are revoked?

- / Response 4: Clark anticipates it becoming more difficult for ADIP to negotiate technical modifications to the agency's or an entity's designs.

Exhibits:

Legal powers of innovation agencies

- / One of the reasons that ADIP and Mexico City Key has been a success is its ongoing process of innovation and legal enablement. Yet Eduardo Clark acknowledges that the Operation and Innovation Law that legally enabled ADIP is too broad. Now he is faced with a choice of whether or not to cede some of the powers that he granted to the Agency.

Designing with municipal deficiencies in mind

- / Mexico City Key evolved from a system that would have enabled multiple government entities to communicate data between themselves, to one where a central tool is used as a hub for entity communication.

Redesigning applications for public services

- / Eduardo Clark and the legal department of ADIP/Mexico City mandated/facilitated the redesign of applications for public services. Currently ADIP has a team that focuses specifically on the task of simplifying applications. However, whether redesigning government an application is mandated by law or not, the law still requires a negotiation process between the simplification team and the government entity whose application is being simplified.

Legal teams in innovation agencies

- / ADIP has a dedicated legal team, which has helped it craft laws that enable the innovations that it designs. Despite being a team within the Agency, the legal team is siloed and not specialized in terms of technology law or policy. This creates a tension between the Agency's technical, design, and product-facing staff and the lawyers of the legal team.

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