Erfurt School of Public Policy ESPP

Case No. 2008-009
DRAFT

Monterrey, Nuevo Leon :
Digital Government for Municipalities?[1]

- Draft -

Comments welcome!

[1] The case was written by *Luis Mireles* and *Philipp Mueller*, Professor for Governance and Director of the Master's in Public Administration.

Monterrey is the second most important city in México. The municipality has 1.1 million inhabitants (2000 census), and it is also in the center of 7 municipality cluster that contains 82.1% of the population of the state of Nuevo Leon[2]. Managing the city on a day to day basis requires its fare share of attention.

In the Fall of 2006, Edgar Olaíz the Mayor of Monterrey was inaugurating the project Monterrey Digital, an important strategic project of the municipal government, shortly before handing over the municipal administration to the newly elected Mayor Adalberto Madero.

In Mexico, local elections are held every three years and since reelection is not permitted there is a new Mayor after every cycle. In this particular case, the incoming Mayor is from a different political party (PAN), which made the process of transferring control difficult and the question was if this program that Edgar Olaíz considered as very important would continue.

Taking over in 2003: A cycle begins

Edgar remembered being on the Transition Committee as an advisor three years ago (he stepped in as a Mayor when the elected Mayor stepped down earlier in 2006), participating as an important member of incoming Mayor Ricardo Canavati's team. The present municipal administration of the city of Monterrey was inaugurated on October 31, 2003 in the "City Theater." Back then, during the Transition Period[3], Edgar had been in charge of documenting the city's programs as well as the proposals that were being made to the incoming administrative team. The team had decided that the main responsibility of the new administration would be to improve the delivery of public services to the citizens through modernization and decentralization of local government with a more 'citizen-centric'[4] view of how said services were to be delivered. This would improve the citizens' experience when dealing with the local government and would result in quicker and more efficient solutions. Thus, investment in technological solutions would be legitimized by the degree to which it helps increase the citizens' satisfaction with the services received from the municipality.

In 2003, control of the city was also changing political parties, because the ruling party had lost the city after three consecutive victories[5]. The fact that the outgoing team and the incoming one were

[2] Metropolitan Area population was 3,147,995 according to the 2000 census. Data provided by Mexico's National Institute of Statistical and Geographical Information (INEGI).

[3] The time between the day of the election (July 2, 2003) and the change of power (October 31, 2003).

[4] …based a great deal on the concept that Douglas Holmes outlines in "eGov: E-Business Strategies for Government"

[5] This meant that on October 2003 ended 9 years of single party rule of the local government.

from different parties was a primary factor in determining when and how much information was given to the new administrative team during the transition period. The tendency of the old party was to only reveal as much information as was required by law.

Unfortunately it wasn't until late that October evening (after the ceremony, around 11 p.m.) that the team actually had access to the municipal facilities and the ability to really assess the current state of IT, the tool by which this modernization was to be achieved.

Thus, not much was done in terms of IT that night, other than changing the municipal web page design and basic information. The next day the team would begin their attempt to decentralize the city's government. It was clear that technology and administrative reform would be the main tools for the endeavor.

The state of the art: IT Infrastructure circa 2003

To call the technology available for use by the local government top tier infrastructure would be a stretch. The main components of the system that supported the Treasury, specifically the one that handled the Income Department and its property tax collection (which accounted for 14.07% of total income in 2003[6]), was programmed using the Cobol computer language. The entire program was supported by an HP 3000 server, which was discontinued in the late 1990s.

The IT Department essentially functioned as an administrative unit for support service contracts and had little 'in-house' technical capabilities other than basic PC support. Moreover, all the individual components were supported by different companies. This contributed to a highly disorganized and inefficient IT infrastructure.

There was little time for hesitation. The property tax campaign would begin in January, and suffering a system malfunction at that point or anytime thereafter would be both financially and politically disastrous.

To further complicate matters, HP refused to renew the municipality's support service contract in early 2004 because they no longer produced spare components for the discontinued server model.

[6] 44.49% of total income was collected by the municipal administration for taxes that are the prerogative of local governments in Mexico and the State of Nuevo León.

Obviously, the first challenge for IT was to quickly develop the technical capability to maintain the current systems and keep them operational before continuing work on any of the new administration's goals.

The state of the IT infrastructure was then assessed. During the first half of 2004, all technical efforts were directed toward maintaining the current systems. The analysis was completed by the end of the year and the technical situation stabilized to the point where the new administration could begin the transition to a java platform. This was the most vital part of the precarious new system, because it was the part that handled the property tax collection during the first three months of each year.

Administrative Reform: the road to citizen-centric

The Mexican municipal administrative body is divided into eleven departments or secretariats (city level ministries) that are responsible for the operation of the government. In total, these departments are expected to provide at least 443 different services to the public. It was necessary to analyze each of the procedures used to implement these services to best determine:

…whether they should be decentralized at all, due to their nature and intended recipients?
…to what degree they could be decentralized?
…how to decentralize them?

The inspection and analysis of the services and permits offered by the municipal administration required almost a year. It included interviews with public employees, classification by volume of transactions, and examination of several other criteria to determine which programs could and should be decentralized.

The reality of the digital divide

Despite these efforts, one hurdle loomed inescapably in the distance: even supposing that all the services could be completely decentralized and available through the web portal (which was obviously not a feasible possibility at this point), there still remained the fact that a significant amount of the population did not have access to a computer with internet. This meant that any solution to the problem would also need to address the digital divide in the city of Monterrey. Otherwise these modernizing initiatives would not actually improve the way citizens receive public services.

Furthermore, they would have to generate enough trust among the citizens that they would be willing to try a new way of doing things. This would be especially difficult in a society where the fact that it

was strange and new would be enough to make even an available internet-connected computer untrustworthy to many[7]. The digital literacy of the citizenry would need to be improved as well, which implied further efforts to increase digital inclusion of adults and future generations if a significant and sustainable result was going to be achieved.

Stabilizing and selecting the focus

In the beginning of 2005, the income system began its migration to a java platform and the "Secretaria del Ayuntamiento" initiated efforts to coordinate and restructure the other departments to include the operation of remote locations.

The idea for these 'remote locations' was developed after the analysis of the 443 services provided by the city determined that only 328 of these services actually involved a citizen and that 189 of these could be decentralized. They concluded that 89 of these services could be simplified if there was a remote location, separate from the main offices, where a payment could be made, a document received and certified, etc. This study classified all the services in terms of the feasibility of their delivery through either a web portal or remote offices called CAC (Centers for Citizen Attention). The classifications were:

- Informative: only information about the service and necessary procedures will be available
- Registry: it will be possible to receive a petition or report and register as a follow up
- Full procedure: the entire service will be available via the portal or the CAC
- Internal: these do not involve a citizen and are mostly administrative procedures like payroll and tech support

This analysis revealed that 80% of all services delivered to citizens rely on internal authorizations that were carried out manually, using memos for each authorizing instance. This scheme necessitates a great deal of time to actually carrying out the service. Therefore, the automation of authorizing procedures would make the delivery of the service much faster.

It also revealed that the citizens often did not know what department to contact to make their petition, so departments frequently received petitions that were not in their jurisdiction. These petitions were turned over to the correct department, but there was no way for the citizen to know the status of his petition or which department was actually responsible for procuring the service.

[7] For years it had been possible to make municipal payments in banks throughout the city and yet hardly anyone took advantage of this opportunity. This was due to the fear that if a person did not physically go to the city's offices and receive a stamped piece of paper from a public servant, his transaction might not be valid.

The team also decided to architecturally design the remote offices, the CACs, to look like small replicas of the Municipal Palace. This would reinforce the idea that all transactions that were usually done at the palace could be handled at these locations. They are now commonly called 'mini-palaces.'

The construction of the remote office buildings ('mini-palaces') began in early 2005 and the first one was inaugurated somewhere around November 2005. Each CAC has a 'front desk' area that can handle all of the offered services. The main challenge for Edgar during the installation of the first CAC was the horizontal coordination between the municipal ministries. Organization of the decentralization efforts was carried out by Edgar's department.

Mayor Ricardo appointed Edgar to be the 'Secretario del Ayuntamiento,' a position that was second only to the Mayor himself and largely responsible for the coordination of internal politics within the city. The position is required to synchronize the administration's main channels of communications with the citizenry. All public audiences were arranged through his office and thus, it was the first stop when a citizen approached the local government.

The large amount of people that petition the government on any given day made it a daunting task to keep track of their requests in a systematic and orderly fashion. The IT department developed an in-house solution that could register each citizen's visit to the municipal palace. The implemented solution also recorded memos and telephone calls and indicated the department responsible for the reply. These are all functionalities common in any Citizen Relationship Management (CiRM) system, which is precisely why this solution was selected.

The Treasury department's systems, aside from the java platform-supported property tax collection system, needed an integral solution that incorporated the new java platform but also incorporated the historical information on the existing systems. A 'Government Resource Planning (GRP) type' solution was selected, one that incorporated the operation of several Treasury departments including Income, Land Revenue, Expenditures, Accounting, and Public Property Management.

Next, the city had to address the issue of how to increase the citizens' access to the internet. "There can be no innovation without inclusion, otherwise all you have is a clever invention," Edgar stated. So the team decided to equip these 'mini-palaces' with ten to fifteen PCs each for public use and computer skill classes. The public municipal libraries also provided locations for access via WiFi hotspot and the computers installed at their facilities.

One of the main arguments for a publicly owned WiMax net over the city was the opportunity to provide internet access to any area it deemed necessary, including schools and public buildings. Additionally, publicly owned wireless infrastructure would allow the possibility of a technological platform that could support security applications like cameras and panic buttons. Thus, the team began a study of the requirements for setting up a WiMax net that would allow the local government to provide access to the internet anywhere in the city. This would be a particularly useful tool in the e-inclusion efforts. Edgar firmly believed that e-inclusion projects are a basic method that governments must consider to incorporate the community's stakeholders. He argued that *"the population's use of new technologies and the learning required to use them is a strategic investment than the city must make."*

The social significance of the project would stem from the growth of e-inclusion. Luis Mireles, a senior advisor to the mayor and responsible for the project believed it was necessary to institutionalize the inclusion aspect of the project by having the City Council and the City's stakeholders (the general public, the business associations, NGOs, and the universities) make an official statement in favor of the inclusion of all citizens in the use of new technologies. This was dubbed "the digital declaration." With the help of Professor Abel Hibert of ITESM, Luis put together the Declaration that would be signed by government officials, academics, editorialists, universities, social representatives, and other community members.

There was a considerable amount of internal resistance to these decentralization efforts. This was mainly due to skepticism of the new technologies or the chances of the project's success. There was also resistance due to the fear of losing 'areas of influence' among certain groups. All in all, it was not considered a high priority project in the first part of the administration.

Passing the baton and looking to civil society for sustainability

In April 2006, Mayor Ricardo Canavati resigned from his appointed office to become a candidate for Congress. Thus, Edgar would be Mayor for the remaining seven months of the term. During this time his main responsibility was to guide the administration to a positive close and smoothly transfer power to the candidate that won the upcoming elections. By this point, the project finally had all of its components mapped out and the ones that could be started were in progress, including the construction of the second CAC. The project was nicknamed "Monterrey Digital."

Unfortunately, public sector endeavors in Mexico are usually associated with the elected official who implemented them. Thus, when a new Mayor takes office he more often than not completely discards the emblematic projects of his predecessor. Edgar decided it was necessary for the project to involve

as many stakeholders as possible to ensure that society fully embraced the project. This would make it less susceptible to a political situation. It also meant that the less the effort was perceived to be "Mayor Edgar Olaiz's project" the more likely it was to continue after he left office.

At this time, the Mayor's office reached out to national and international organizations, the private sector, civil society, and educational institutions to present a vision of the project and its actions as clearly as possible. The feedback would serve as an acid test in gaining their support and also provide valuable information and comments at a critical juncture in the program.

The first institution contacted in this outreach effort was the World Bank in Washington D.C. The international relations department in the municipal administration, which normally handles conferences with Consulate officials in the city, set up a meeting with the World Bank's Principal Telecommunications Engineer and a Senior Telecommunications Specialist. The objective of the meeting was gain their perspective and suggestions about how to contact international groups that could participate in a possible 'steering committee' that would help guide and refresh the project's vision in the future.

The World Bank officials then contacted The Development Gateway, a non-profit organization that provides Internet-based solutions to strengthen governance and improve aid effectiveness in developing countries. This organization was more able to collaborate with local governments. The idea behind the creation of the 'steering committee' was to consolidate an official body comprised of representatives from civil society that would regularly convene to evaluate the project's development, results, and future. It would also be a fundamental vehicle to facilitate its assimilation into society and hopefully grant it a source of sustainability.

During this process Edgar met with ITESM officials to present the project and ideally gain their participation in the 'steering committee' efforts. They asked the ITESM officials to pay particular attention to the acceptance of the project into civil society. These meetings resulted in a collaboration with Philipp Mueller, the Director of the Master's in Public Administration program at EGAP. He suggested that: "To get civil society onboard, you need a more radical aspect of the program that captures the imagination of the citizenry. It would not have to be access to the home, but it could be a cloud in the public transportation system and gps-information on the trains, or something." -April 27th, 2006.

In May, a pilot was set up to gain an idea of exactly how far the connectivity part of the project would advance. The pilot was set up to test both components concerning the WiMax net: the connectivity to schools, public buildings, and libraries, and the security platform with cameras and panic buttons.

With the help of Ian and his company Neuroservices, the pilot acquired towers access points, antennas, video transmitters, licenses, and servers.

Digital Coalescence : Plans and reality unite

The pilot testing highlighted the difficulties of setting up a wireless network: obtaining the precious line of sight to be able to transmit, determining the ideal locations to place the towers, and obtaining access to the properties located at these positions in the event that they were not owned by the municipality were not easy. The pilot connected the following locations:

- A municipal library located in downtown Monterrey to demonstrate the WiFi access and connectivity capabilities
- A public grade school, to give the school access to a 512 kbps connection, WiFi access in classrooms, a camera monitoring the exterior of the school to deter kidnappings or drug dealers, and a panic button with instant voice wireless communication with the city's emergency response unit 060
- Overlooking a major highway that serves as a main access point into the city and has a high volume of traffic to demonstrate its security potential
- The exterior of a convenience store to demonstrate what could be done with the technology for security purposes with the private sector's involvement

The experiences from the pilot implementation yielded the following conclusions:

1. Connecting a location that was municipal property was infinitely easier than one that wasn't.
2. The rich topography of the city was a serious challenge when attempting to connect 200 public schools and 70 public libraries. A large number of relay spots would be needed to ensure line of sight transmission in so many places.
3. The traffic monitoring application was effective for maintaining a record of traffic flow for reference and more specific monitoring during searches or crisis situations.

Time constraints made it necessary to think of a new way to achieve connectivity to all of those locations, and leasing infrastructure to solve the connectivity issue was a possible solution. This involved everything from renting space on a tower to further wireless connectivity service.

Edgar had to determine what role a leasing scheme would play. He asked for an analysis of the advantages and disadvantages of a leasing and non-leasing plan, classifying each as a social,

economic, or technological issue. Two of these presentations were prepared; one was done by Ian and Ignacio of Intel from a technological perspective and the other was done by Cuauhtémoc and Luis from a political viewpoint.

The main conclusions of this exercise were:

4. The time of implementation was shorter in a leasing scheme and the cost of installation, support, and maintenance for the equipment was lower as well.
5. It was necessary for as much of the information concerning security as possible to be transmitted over state owned property to ensure confidentiality.
6. The best option was a hybrid scheme that included leased components and publicly owned infrastructure.

While determining the composition of the hybrid scheme, Luis asked Ian to "view the situation from the municipal government's perspective to help ensure that as many of the main prerogatives of a fully owned scheme are kept, with a special focus on providing access to spots it deemed necessary."That mixture would allow for the broadening of objectives on the e-inclusion front, including the creation of "clouds of access" in public areas like parks, gymnasiums, and recreational facilities. It also allowed the possibility of connecting all public primary and secondary schools by the end of the year, all for a lower cost and at a faster rate of implementation that a fully owned scheme.

From the digital divide perspective there are basically two types of citizens: those who have access to the internet and those who don't. Those who already had access needed to be offered a new way of connecting and a new experience in connectivity via the "clouds of access." For the others, the solution would have to include providing access to a computer connected to the internet. It was decided to equip the 'mini-palaces' with special computer rooms for the public and install 250 computers in the 69 municipal libraries.

It was also decided that these "clouds of access" would be located exclusively in public areas because providing access to private homes and businesses would encroach upon the local telecommunications industry, including some of the companies involved in the project. More importantly, as the project coordinator Cuahutemoc stated: "the objective is not for the municipality to become a carrier but to narrow the digital divide as much as possible." Since not all the public parks could be outfitted with WiFi hotspots in the remaining timeframe, a decision had to be made of places where there would be the greatest use and impact, like parks near universities, high schools, and residential areas.

The time constraints also became a factor in the GRP implementation. Any feasible solution required that all the historical information migrate to the new platform, and this migration required a time consuming process that could only be accelerated to a certain degree. “Nine pregnant women cannot make a baby in a month” Nadim once said. To avoid having this delicate migration process occur during the change of power, the GRP solution was dropped from the implementation phase and left as a pending process to be started by the incoming administration.

Study Questions:

1. What is the focus of *Monterrey Digital*?
2. Do you agree that these are the most important points to include in a digital strategy?
3. What problems did they face in implementation?
4. Was it a success? What do you think happened when the next mayor took over?