E-government and innovation in Mexico's local governments

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Introduction

The world is going through globalization and technological development processes as we have never seen before. Since the last three decades of the 20th century up until today, the development of ICT has spurred technological revolution worldwide. Technological innovations in micro-electronics, information technology and telecommunications have transformed not only national economies but also political and social organizations; said changes have modified society, giving rise to information society. Intensive use of the internet has motivated academics, politicians, entrepreneurs and the media to talk about information society as a new paradigm born from information revolution in which exchange of information is the key factor (Pérez, 1985) for economic growth and territorial development.

This technological change brought on essential economic changes such as globalization process; in turn, this phenomenon made an administrative and political State reform necessary which caused radical changes in public management. Governments generated innovations to adapt themselves to this new economic, political and technological environment; e-government platforms were implemented in different government levels following the recommendations of several international organisms like the UN and complying with commitments made in international summits and meetings. This change

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modified the form of organization within public administrations and the way governments interact with citizens.

This essay means to explain the origins of e-government as an important element of worldwide technological change by registering the impact said change has had in public administrations. This essay is divided into three sections. The first one deals with changes undergone by public management because of information society so as to identify the origins and forms of e-government that exist. The following section shows e-government development as federal government strategy to modernize public administration in the three levels of Mexico’s government. The last section describes e-government as an innovation in local public administrations, its characteristics and some examples.

Public administration in the face of information society

Information society has become the new paradigm that describes worldwide society. Technological change brought on by communications innovations transformed traditional markets by creating new economic activities related to these technological developments. According to the theory of technological change (Dosi, 1982; Pérez, 2003) the grouping and interrelation of radical innovations¹ that take place five or six decades ensure a stage of economic growth; this is why it is relevant for governments to promote technological innovation processes in their territories because technological change brings about an increase in the rate of national economic growth and therefore world economy.

Radical innovations in the eighties and nineties such as personal computers, mobile and internet-based devices promoted the recovery of national economies; thanks to these innovations markets became more dynamic and had significant increases, especially in the nineties.

¹ Innovations can be technological or non-technological (organizational, process, market, etc.). Technological innovations refer to inventions that are spread or commercialized through the market. Radical innovations are new products that did not exist previously like the steam engine, automobiles and the telegraph. Alongside other radical technical and organizational innovations they can become interrelated innovation systems that modify markets’ structure and dynamics (Pérez, 2003), generating a new pattern of better practices.
The liberalization of the internet\(^2\) had a positive impact on that decade (Marquina, 2012) made the UN and other international organisms such as the International Telecommunication Union (ITU) and the Organization for Economic Co-operation and Development (OECD), among others to take heed and promote the use of technological innovations in public and private administrations, both business and social. These international organisms’ recommendations to use these new technological developments were to generate demand and consumption as well as promote production and economic growth.

Said recommendations played a very important game in showing governments the qualities of these technologies to improve their administrative processes. When the Cold War was over and the internet stopped being controlled by the US government, the UN promoted the development of information society, generating a new paradigm of better organizational practices based on the intensive use of ICT.

Governments started using information technologies intensively since the eighties because administrative modernization processes were based on these innovations due to the fact that they made public management more efficient. We must remember that changes in public administration had to be adapted to the new international environment which was based on technological (ICT revolution and emergence of information society); economic (globalization process, economic crises, external debt) and political changes (the end of the Cold War, State reforms and democratizing processes) and the emergence of New Public Management (NPM). The adoption of administrative tools that stemmed from the fields of business administration and based on less costly, more efficient and transparent public management (Guerrero, 2003) has sought to reduce public spending due to the deceleration of economic growth in some countries in the world which has forced these governments to implement more or less restrictive austerity policies, based on the crisis they experience.

\(^2\) The liberalization of the internet occurred when the US announced that the network of networks they had developed in their country since the Cold War as a military strategy designed by the American Government to create a solid communication network that would make the exchange of military and scientific information easier with their NATO allies would stop being controlled exclusively by American institutions. Once the East-West military conflict ceased, it seemed convenient to expand this network worldwide and promote the appearance of new companies dedicated to the production and commercialization of goods and services related to ICT that would contribute to countries’ economic growth.
NPM was designed to have a tight control over public spending by allocating resources to government problems that achieve expected results, showing the effectiveness of their management; public administrations have relied heavily in the intensive use of ICT which backs up information in diverse technological devices to process and store digital information and evaluates the results of public policies.

The essential part of evaluating public policies is the construction of performance indicators; thus, it is important to have a detailed record of activities and expenses related to the implementation of specific programs. These evaluations will be used to negotiate the expenditure budget for the following year. The use of ICT has helped improve accounting processes, timely reports for decision making processes have been developed; detailed audits on government spending have been made and public finances have become more transparent in the three levels of government. As mentioned above, the new paradigm of information society has as key factor to the development of several activities carried out by governments, businesses and citizens is information.

Information society brought on new forms of social organization based on interrupted communication and permanent exchange of information among individuals and organizations, public or private ones. In information society the creation, distribution and manipulation of information is essential to promote social and economic development, this is why different government level design strategies to improve their performance through ICT and the use of e-government platforms.

E-government means the use of ICT in public administration bodies and its goal is to improve the access, exchange and quality of information within government institutions and towards citizens. E-government platforms can make public management more efficient and effective; costs and response times are reduced for citizens waiting on government’s administrative procedures. Lastly, e-government can increase public sector’s transparency and make it possible to evaluate government actions through State institutions such as the Superior Audit of the Federation dependent on Mexico’s Congress of the Union and citizen’s comptroller mechanisms which have been underdeveloped in this country.

Ever since the internet was liberated, governments have been able to post relevant information on their websites to be consulted by citizens and other public agencies; this established a new govern-
ment-citizen relationship. ITC’s technological change has promoted the development of a more citizen-approached public management culture which encourages less hierarchical government-citizen relationships, greater closeness between them and promotes permanent dialog to contribute to the democratization of societies.

To enable citizens to participate in the discussion, design, implementation and evaluation of public policies governments must provide not only relevant information for citizens, but also citizen training so that both of them, following the government-citizenship co-responsibility principle, can solve the problem they are facing and establish strategies that bring well-being to the population. Access to information and training can also be achieved through virtual means besides the use of traditional government-citizens communication methods.

This new paradigm generated by information society has forced governments, companies, research centers and universities which develop software to design different e-government platform models which can be classified as follows:

*Informative e-government:* most basic model, it provides certain kind of information to citizens and other public agencies. This kind of websites usually provide information related to the history of the territory over which the government rules; existing territorial division, government’s organizational structure, different government programs, public accounting, information on government procedures, different legislations, places of interest in that particular territorial demarcation, achievements of the current administration, virtual training courses for citizens ad tools that allow direct communication: forums, chat rooms, e-mails which promote deliberative democracy so that citizens can voice their opinion on different public and government matters, etc.

*Transactional e-government:* it allows financial operations to be made through a web site, i.e. tax payment, specific procedures, etc. The site has to have excellent security procedures to conduct these operations or redirect citizens to the webpage of banking institutions which can back these operations up; this is why this e-government model has to have at least one banking institution that supports this type of financial operations. It is also an informative website.

*Operational e-government:* it usually comes with the transactional and informative website and promotes interaction with other public agencies. It is some information systems integrated under the inte-
roperability principle that allows re-use of information through the exchange of databases and all kinds of digital information. These e-government platforms will help improve public management in its different levels of organization; thus, budget management would be more transparent, corruption could be reduced and duplication of functions and government programs could be avoided. Sharing databases among public agencies is nowadays an essential element to make administrative processes more efficient.

The most common e-government model is the informative one; it has been developed by multiple municipalities, boroughs in the Federal District, states and Mexico’s federal government. Regrettably, the operational model has not been fully developed in our country because it means changing the political and organizational culture of our public administrations.

E-government development in Mexico

In 1995, a year later that the then vice-president of the United States, Al Gore, invited the countries of the world to join the information superhighway⁴, the Mexican government announced two strategies to modernize public administration in its three levels of government.

The first one of these strategies was the creation of the Program for the Modernization of Public Administration (PROMAP) 1995-2000 (SECODAM, 1995)⁴. This program established that citizens’ participation and attention were the cornerstones to achieve the modernization of public administrations in an environment of greater democratization not only in our country but also in the rest of the world⁵. This program also included some aspects of administrative decentralization by transferring some functions to states and municipalities; this way, local governments could better address their citi-

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³ The International Telecommunication Union (ITU) is the oldest international organization established in the 19th century when transatlantic communication was achieved thanks to the telegraph. Since then, this international organization has established a close collaboration between governments and radio and telecommunication companies. ITU has played an essential role in the construction of the Information Society considering that it promoted the organization of both World Summits on the Information Society (WSIS).

⁴ The Ministry of the Comptroller and Administrative Development is currently the Ministry of Public Function.

⁵ It is important to remember that the early nineties were characterized by democratic and capitalist economy transition processes of all European countries that were part of the socialist bloc.
zens’ needs. PROMAP established some transparency mechanisms in decision making and accountability processes for the first time, this meant the development of a new relationship between governments and Mexican citizens. Somehow, the use of ICT – especially the Internet – means that governments favored the development of more informed citizens and gave them the power to participate in public affairs that had been hitherto denied to them; except for their belligerence and the use of other negotiation procedures and mechanisms with governments to address their demands.

The second strategy designed by the Federal Executive was the creation of the Informatics Development Program (PDI) which was coordinated by the National Institute of Statistics, Geography and Informatics (INEGI) for several years. This program’s main goal was to promote public administration’s modernization process by using informatics as an instrument to increase the quality of public services. This program made clear the need to generate a growing market of demand and supply of informatics products and services so as to develop these new economic sectors that would allow the creation of new jobs. PDI also included tax collection modernization by the Ministry of Finance and Public Credit and the creation of an electronic and transparent system of government purchases and the simplification of procedures by the Mexican Institute of Social Security, among others.

This is how e-government started in Mexico; however, it was until Vicente Fox’s (2000-2006) government and Felipe Calderon’s (2006-2012) administration that the policy became institutionalized due to the pressure exercised by international agencies, especially OECD, because of unsatisfactory results of evaluations carried out by this international organization in regards to e-government in Mexico.

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6 The Government of the United States was the first one to promote e-government implementation. This is not strange considering that it is the country that has developed almost every innovation in micro-electrics, informatics and especially telecommunications. In 1993, under the leadership of the then vice-president Al Gore, Bill Clinton’s administration (1993-2000) started an aggressive e-government strategy in the framework of the National Performance Review Program (NPR), whose goal was to evaluate ways of working in government, private and academic organizations to reduce operation costs. It was observed that the use of ICT helped administrations to be more efficient and effective; they suggested the redesign of public administration processes to improve the quality of citizen services. Similar innovative processes were Japan’s 1993 “administrative information promotion plan” or the European’s Union 1995 “Interchange of data between administrations programme (IDA)”. 
During Fox’s administration, e-government was developed as part of the e-Mexico program which sought to reduce the digital gap in this country caused by the emergence of ICT. To achieve the socio-institutional change needed to include Mexico and its citizens into the information society on June 2002 the Official Journal of the Federation published The Federal Transparency and Access to Public Government. Information Law (LFTAIPG) to define the legal framework that would force the three government levels to modernize their administrative processes using ICT to solve citizens’ information needs. Nonetheless, these efforts proved to be insufficient. In fact, a lot of urban governments still had not developed their platforms. After the aforementioned evaluation and suggestions made by OECD, the Federal Executive announced on December 2005 the creation of the Inter-Ministerial Commission for the Development of Electronic Government.

This Commission meant that the three levels of government made a formal commitment to work jointly in this process of governmental innovation. This Commission was made up by 18 State ministries and is presided over by the Ministry of Public Function. Permanent guests include the Office of the Presidency for Innovation in Government, Tax Administration Service (SAT), Federal Electricity Commission (CFE), National Council for Science and Technology (CONACYT), the Mexican Social Security Institute (IMSS), Mexican Petroleum (PEMEX) and The Office of the Mexican Attorney-General (PGR). Since then, the Federal Executive established the adoption of e-government by all public federal, state and municipal administrations; 2,439 Mexican municipal governments developed e-government platforms.

**E-government as innovation in Mexican local administrations**

The Internet has generated all kinds of expectations regarding the potentialities and advantages this kind of technology has for local governments, especially because they can increase their efficiency by automating their processes, generating important savings in operation and especially having greater transparency and closeness to citizens. In regards to expectations associated with democracy, a new political relationship with citizens was created, such as the possibility to participate in the design of public policies, direct communication with authorities and the expression of demands and monitoring of their work.

Similarly, local governments –especially urban ones- have been pressured by citizens who have questioned their traditional way of
governing. Before the liberalization of internet, no one would have imagined having access to public administration records, carrying out online procedures or placing a complaint from the office or from home. This growing communication between local governments and citizens using electronic means has been a new process in State reforms which seek to strengthen democracy by using ICT, especially the Internet.

Technological change brought on by ICT has created a gap between the techno-economic and socio-institutional spheres (Pérez, 2003); these innovations have been commercialized and a change occurred in the markets’ structure by creating new chains of value around them, meanwhile, changes were made to the legal-institutional framework due to the fact that legal problems associated to them have to be analyzed, topics that have prior discussion and approval processes in legislative areas of the States such as the case of the passing of certain laws or rules that regulate the exchange of digitalized information (electronic signatures, digital invoices).

On the other hand, cultural-organizational change is much slower; it has a different logic which encounters more resistance from potential users who are used to work in another way. The gap between the techno-economic and socio-institutional spheres provokes a turbulent environment that, according to Enrique Cabrero et al. (2000), forces governmental organizations to create new and different ways of relating themselves to their context. In this sense, we think of e-government as an innovation on public administrations that can close the gap of this change of paradigm, brought on by the emergence of information society and democratization processes of the last few decades. This governmental innovation has generated changes within public administrations, but also their relationship with the citizens and other government agencies. As Cabrero et al (op cit) points out, innovation process in public administrations generate organizational changes in three areas: functional, relational and organizational behavior.

These authors think that governmental innovations generate functional-structural changes which are originated in the change of context in which governments operate. This is why local governments have been forced to create within their administrations new organizational structures to meet the context’s demands which are strongly based on the intensive use of ICT. In this case, we can observe that governments have created within their organization new substantial areas or units to support governmental management such as citizen parti-
cipation and informatics units which are essential for the operation of
e-government platforms, the communication channel with citizens.

The transformation brought on by e-government at relational level of
governmental management is associated with the idea of government
that works through networks which is common work organization in
information society (Castells, 2001). The exchange of information
and fluent and timely communication makes the use of ICT easier;
within local administrations —by using intranet- and in their interac-
tion with other agencies, levels of government and citizens. This why
e-government platforms regularly implement three ways of connec-
ting with society: government-citizens; government-companies and
government-government (Marquina, 2010) depending on the adop-
ted platform model, as aforementioned.

Local public administration’s changes in organizational behavior
brought on by e-government is related to its own normative fra-
framework; that is, LFTAIPG and appropriate state laws that make the
country’s public administration provide information on public mana-
gement to citizens that request it, as well as the Electronic Commer-
ce Law which gives legal validity to digital documents and electronic
signatures. We also find the leaderships which emerged from the
Inter-Ministerial Commission for the Development of Electronic Go-
vernment in Mexico which promotes and encourages government to
create their own websites. On the other hand, Mexican Republic’s
state’s governments such as the Federal District’s one through the
Comptroller General’s Office7, issued a series of regulations and ru-
les to achieve control over procedures and information on the central
administration’s and 16 boroughs’ websites.

New regulations also consider the creation of useful virtual spaces
connected to diverse activities that every area in the boroughs carry
out; as well as the improvement of existing spaces in transparency,
procedure and service areas offered to citizens. The goal of imple-
menting e-government at central and borough level is to improve
government programs, promote transparency and generate relevant
public information for citizens.

7 The fifth assembly of the Federal District reformed the Organic Public Administration
Law of the Federal District so as to transfer to the Comptroller General modernization,
transformation and administrative innovation functions which had been controlled by
the Administrative Office of the Government of the Federal District; thus, the Interior
regulation of the Federal District’s Government was reformed to formalize said transfe-
rence and functions needed to instrument modernization and innovation programs.
Considering that the institutional-legal framework is an external factor that alters local government’s organizational behavior, internal change in these governments’ administrations has its origins in the incentives found while developing e-government platforms to improve their performance, yielding results and satisfying expectations held by citizens; it is the government level that is closest to citizens, topics related to the monitoring of public spending as well as the improvement and simplification of government procedures could positively affect citizens’ perception on local public administration’s management.

In this sense, e-government is public administrations’ innovation and an important part of strategies designed by governments to face current challenges such as public spending restriction, democratization processes and risk of ungovernability due to lack of credibility and legitimacy by not having enough capacity to solve satisfactorily demands made by citizens. Local governments cannot solve structural problems by themselves such as insufficient productive investment, growing increase of speculation in financial and real-estate markets, closing of companies, lack of employment, precariousness of wages, informal economy, little confidence in government, as well as the increase of violence and insecurity that brings about Mexico’s and the world’s huge social polarization that has been worsened due to globalization.

E-government platforms can be used for a lot of purposes because they respond to strategies and priorities established by each particular government to support their administrative modernization processes that will get them close to the citizenry. Thus, said schemes can include citizen consultations through the Internet, public tenders and government purchases, improvement and monitoring of procedures, accountability, tax collection, payment of services, etc.

Most local governments in Mexico have found in e-government a key strategy to launch a tax collection system through the digitalization of the register of deeds, solving the serious problem of restriction and budgetary austerity. Cities like Durango have been internationally awarded for their modernization of urban management, especially the collection of property tax (Garza, 2010). Mexico City’s government is currently updating and digitalizing the register of deeds; because over time, new buildings have been constructed in a lot of properties and these modifications and expansions have not altered property tax value and property taxes have not been correctly adjusted. Nowadays, government websites allow citizens to pay all of the-
se taxes; this has improved the collection of income in municipalities and the Federal District.

Public management that is closer to its citizens carries out actions that socialize relevant information for all of its citizens. In this sense, e-government improves governments’ image by giving citizens valuable information that can be accessed via the Internet, such as the creation of information systems regarding government programs. The administration of the Iztapalapa borough has implemented the ‘Basic Information System on Social Development in Iztapalapa’

This system of information can be found in the borough’s website and can be interpreted as one government strategy that seeks to reflect the current administration’s priority: address the huge social gap that exists in this borough; the later has 2 million citizens which represent 25% of the poor people that live in the Federal District (Damián, 2004). Ergo, government innovation is a government action that intends to show the population of this borough that its government intends to use most of its budget to fund programs to fight poverty and build capacities that benefit poor people in Mexico City.

These information systems contain the rules of operation of these social programs, the number of beneficiaries and money spent on each one of them. The design of this system proves that Iztapalapa has a new open attitude and a new relationship with its citizens, so every one of them can access this information and obtain benefits if they meet the requirements to be part of some social program.

Another use is the creation of urban observatories which intend to generate geographic information regarding the city’s status; this is relevant in decision making processes of urban centers. That is to say, said observatories collect demographic, economic, environmental and socio-cultural data of urban territories and even neighborhoods.

This information is stored in said electronic platforms and proves to be very useful for citizens, the government and private and social actors who work in urban planning and management processes. These observatories make it possible to establish action coordination mechanisms of action and permanent discussion forums to evaluate

8 See: www.iztapalapa.gob.mx.
and monitor urban public policies. These exercises take into account public, private, social and academic sectors to formulate suggestions and improve public programs which in turn improve cities’ quality of life and seek to reduce urban poverty. These urban observatories help cities operate a system that generates information and monitors specific management and urban quality of life indicators. Public and free access to information that is relevant for the population is also promoted.

The binational urban observatory in Nuevo Laredo, Tamaulipas was established in 2010 thanks to the signing of a cooperation treaty between the Nuevo Laredo Municipal Institute of Research, Planning and Urban Development and the Binational Center of the Texas A&M International University. The purpose of this observatory is to generate information on the binational metropolitan area of Nuevo Laredo-Laredo; an urban formation that requires convergence of national, American, public, private and social actors to achieve functional integration of this urban area.

Conclusion

Ever since the information society appeared, e-government has become the central element of every public administration modernization program; these platforms allow governments to know their citizens’ opinion and demands and the creation of new communication and interaction channels that seek to improve public services, reduce response time and make administrative processes more transparent.

Nonetheless, it would be a shame that e-government benefits are limited to government procedures, which all citizens need to carry out and that can be very bothersome. The greatest challenge faced by digital governments is to encourage citizen participation in the decision making process and design of policies, be able to justify expenses of government management, generate relevant information to inform citizens of the economic, political, environmental and socio-cultural reality of their territory.

On the other hand, public management transparency is a public life topic which has become one of the most important ways to fight co-

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9 The UN-Habitat program has established a network of urban observatories around the world in order to contribute to the achievement of the Millennium Development Goals.

10 Most urban observatories are operated by municipal urban planning institutes or by universities which are closely monitored and supported by local and municipal governments.
Corruption and create good government practices. It is not easy for Mexican public administrations to be transparent after many years of being obscure and corrupt. Government corruption is one of the greatest problems that hinder territorial development; there is much work to do. Civil society organizations have demanded accountability to ensure the fulfillment of public policies and the respect of human rights through citizen participation mechanisms such as social auditing. The latter helps citizens control, monitor and evaluate government management and the use of public resources under transparency, legality and honesty principles. Undoubtedly, e-government is a cornerstone for all of this.

Some urban municipalities have joined the Federal Institute for Access to Public Information’s (IFAI) efforts to launch the INFOMEX system. This system of information is a tool that has been developed by IFAI to present and monitor information requests and revise non-conformity cases to responses issued by the government and public administration agencies.

Digital governments make it possible, at least in a technical sense, for citizens to be involved in public affairs and promote the strengthening of democracies because they are good tools for the exercise of deliberative democracy which is based on the inclusion of citizens into public debates and government affairs. However, the construction of democratic societies goes beyond technological development in the information society. It means local governments promote the creation of a new political culture based on citizen participation, transparency, accountability and access to public information.

The important thing is not the use of technology, but the possibility of opening direct communication channels to bring local governments and citizens closer. We are facing a paradigm changing situation that will transform governments, will make citizens be more informed and demand more the defense of their rights. This complex and ever changing environment will encourage changes in public administrations in every country and city around the world.

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