

E-Mexico

The Challenge of Integration of Government and Culture

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Abstract

E-Mexico is not a project or technology, it is a nationwide initiative produced by the Mexican Government expecting to motivate stakeholders from several Sectors to participate and contribute on the improvement of the Mexican Infrastructure.

The objective is to leverage the economic level of more than 40 million Mexicans through the resources generated by launching a nationwide digitalization and modernizing of services from Government and private sectors with Internet technology and other tools as the bench infrastructure.

This paper analyzes the planning and strategic perspective from the technology proposed, using a proven methodology we will show how the stakeholders will be affected by several factors during the implementation process, also as a conclusion we will identify the most influenced participants when the Technology adopted will be used commonly at the end of the Plan.

Background

About 100 Million Mexicans live in Mexico today, with a GDP per head of US 5,780 for 2000, Mexico is the 13th economy in the world. With full of resources, Mexico gets most of their income by the production of oil, tourism and maquiladoras.

When the Mexican economy integrates to globalization at early 90's, realizes that a profound structural change must be done to the traditional production methods, a service oriented economy must be developed and trained to overcome the competitive scenario of today's World.

Mexico's Computer infrastructure is not widely spread through the Country yet. There are 21.9 million households in which only 9.3 percent had a Computer counting approximately 2.1 million Computers¹. A similar number (2 million) of Internet Connections have been reported by ISP's. The number is compound by offices which accounts for 1 million of internet connections itself.

Even with large deficiencies in education levels (average is 3^d grade of elementary) and with 40 million people living below the poverty line of 2 dollars a day, Mexico's

¹ INEGI Nacional Census 2000, Aguascalientes México

Telecommunications Infrastructure is quite solid in the 3 “ring” cities (Monterrey, Mexico City and Guadalajara) where 50 percent of people and economy gets going.

Five Fiber optic networks are connected by major Telecommunications Companies and with another same number from Government and Private networks. There are more than 60,000 miles of intercity Fiber optic network deployed in Mexico today.² For the US this number is believed to be around 60 million miles by 2000.³

In phone communication, Mexico has installed recently the 10th Million line, adding up another 2 million of cellular lines add up a total of 12 Million lines, a modest ratio of 1 phone line for every 8 people.

E-Mexico’s main goal is allow access to a higher level of life through technology services for all Mexicans, this goal will be reached by a wave of indirect impact through many sectors investing in the Plan.

Description of the Technology

E-Mexico is a general plan visualized by Mexico’s President Vicente Fox to modernize the Country with components of participation, content and culture where the main detonator is technology. The plan includes the deployment of basic infrastructure to more than 10,000 places in order to offer technology access to services Country wide.

The services will include at least: Education, Health, Business and Government. A great deal of expectation is made from academic and research Institutions, small business sector and particulars, since a wide spectrum of opportunities will arise to satisfy the people without access to formal services.

There are 25 Million Mexicans (25% of population) living in communities or small cities with less than 2,500 people. These localities are the goal of the E-Mexico project, since the 5 largest cities in the Country enjoy high levels of connectivity and services.

The budget for this plan will surpass easily US 400 Million the first year and increasing each year to top US 40 billion for the next 10 years as show in table 1.

² Carlos Casaus, Internet 2 en México, Ponencia E-México Consulta Marzo 2000

³ <http://www.auranetinc.com/Optic-Fiber.html> Metrobility white paper, with personal calculations.

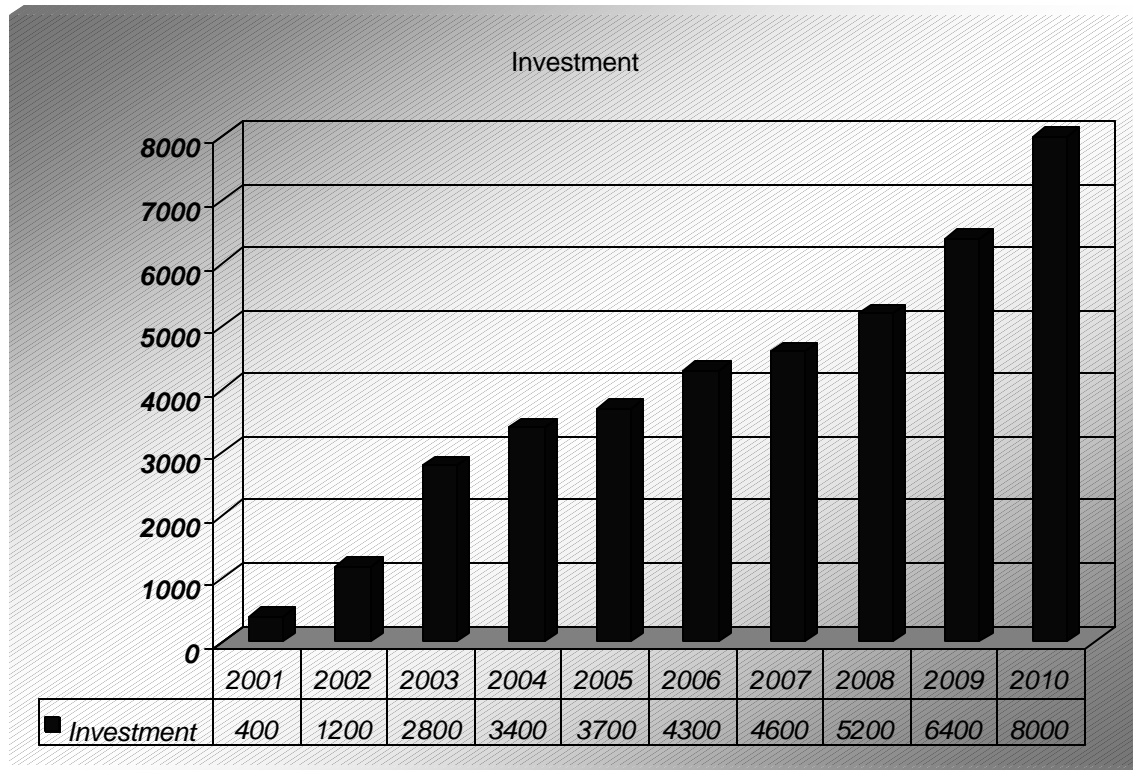


Table 1. Proposed investment schedule for E-Mexico.

The source of funds for E-Mexico is participative from several stakeholders, it is anticipated tax benefit for high technology Companies to participate, The basic infrastructure's phase will be taken care by the Government, the content and services will be provided by Companies with creative schemes as concessions and franchises nationwide, the government will motivate a strong investment atmosphere in the first phase of the plan.

Some international Organizations and donors are also expected to participate in the Plan with long term projects focused in economic development and education. Some development Organization from Europe Union, the Inter-American Development Bank and the World Bank are Institutions interested in support specific projects included in the Master Plan.⁴

ASSUMPTIONS

A plan of this proportions must assume several conditions during the following years until its accomplishment, such as:

- **Leadership continuance.** Since there are several threats to a Political Leader causing risk of failure, the current Government must provide a mechanism to guarantee that some Institution maintains the leadership and direction of its plan,

⁴ E-Mexico, Consulta ciudadana de la Secretaria de Transportes, Marzo 2000

so we will assume that the Institution undergoes the plan to the successful finish under the Leadership of a superior power.

- **Full budget availability.** In the past, several plans have been failed because lack of funding or delay of funding where sudden changes of conditions arise. For the purpose of this analysis we will assume that the availability of projected funds is guarantee.
- **A global market economy.** Most companies in the following years will locate resources with optimal combinations in high quality and low cost, the technological gadgets will provide access to markets of different sizes and locations. A society must be prepared for this job and the conditions are to follow the same. Wars, protectionism and terrorism are not events that are considered in this analysis.
- **Mexican Idiosincrasia.** A peculiar characteristic of our culture is the way it behaves, conducts and reacts to new situations. Mexicans as a mixture of Spanish and Indians could be creative, passive and Latino minded. This assumes that Mexicans are going to deploy their “technology” probably different than other society. Starting with collectivism vs. individualism, government protected vs. government referee, etc.

ISSUES

We now will concentrate in defining the most influential issues related to the Plan formulated by the Mexican Government.

Positive factors to be considered in the Analysis are:

- A great deal of expectations have been following the end of a political era, The last elections in Mexico brought a new Party to power (PAN, Conservative), finishing 71 years of hegemony(PRI, Central), this situation is adequate for new investment and promote the establishment of new infrastructure. Several big companies World wide have showed compromise with the Project. In the summer of 2001 Leaders of CISCO, Microsoft, Intel, HP and IBM stepped in Mexican Land to offer not only products but help with Organization and donations to the Plan, i.e. Intel offered to establish a Network for training Internet Instructors, compromising near to 12,000 courses in the future. Microsoft also offered to donate 50 Million dollars worth of products.
- The new Government’s agenda includes the continuation of the Globalization process, in which Mexico is deeply inserted. Mexico is now one of the most global Countries in the world since have signed free trade agreements with NAFTA, European Community, Asia Pacific, South America, Japan⁵ and Israel.
- The experience revised in similar projects of this size, like in India with the Technological Factories, Singapore with the Docks Infrastructure and South Korea

⁵ Japan Free Trade will be signed next summer.

with the Industrialization have encourage the Government to double the efforts to reach the goals set to this Plan. A great level of development in such Countries have been observed after the elaboration of Plans similar to E-Mexico.

For the negative side, the government should consider the following important issues before proceeding:

- E-Mexico's target is to leverage the income of more than 40 million people that live with less than 2 dollars a day, but before learning and using e-services services, they must enjoy a minimum level of nutrition.
- In third place the issue of Mexican culture and idiosyncrasy towards new technology, it is well know that the process of adopt Technology is customary for every nation, in this case Mexican history have shown that Government must proceed with patient, coordination and in some cases leave the initiative to the public. Most of the large Government projects fail for the implementation phase and the lack of understanding of the Mexican culture.
- The Plan also must consider the actual education level in Mexico, less than 2% of the population have college degree and most of the Country lies in the low 3rd grade elementary school average. Adding to this phenomenon there are less than 5% of the Population that speaks the Internet's language: English.

STAKEHOLDERS AND FACTORS

The number of groups affected by this Plan is very high, but the present analysis will elaborate in the most representative stakeholders and in the following lines a brief description of them will be mention:

- **Government.** The leader of the Plan, responsible for the correct direction of the initiatives, an adequate long term vision, mixed with good political handling and ability and liberty to develop tax schemes, investment premiums, deduction motivation, etc. Is expected from the participants. A defined and forecasted framework for the technology cycle is also needed. The Minister of Communication and Transport is leading the Plan, even there are several government agencies participating in the process.
- **Unions:** One of the largest Institutions in Mexico with long history, they are responsible of defend the laborer's rights, in reality it is a difficult force to overcome with more than 12 million people affiliated, day to day is loosing representation and strength. Mexico's Unions organizations controls the activity of almost any nationwide service, from oil extraction to phone systems. A new relation with the government has not been defined clearly. In the following years the tendency is to let the Unions weaken themselves and allow new rules dominate the picture in the relation of development.

- **Academic / Research:** A mature system of Universities are the center of this important force. A mixed of private, public and government's sponsored research centers and schools are forming a solid brain center of ideas, solutions and critic for all problems in Mexico. Most of the current political leaders are alumni from these large centers of research. It is also a duty from academic centers to bring experiences and new ideas from other Countries that are similar to Mexico in size and level of development. Such Countries are Ireland, Spain, Korea or India where great economic development has been observed after Plans like E-Mexico has been in place.
- **Productive Sector/Companies:** A very large group of Industries are gathered around this sector, food, fishing, agricultural, auto industry, clothing, etc. They are the second source of income to this Country, but most of the industry is conceived as Maquiladoras, factories with external Capital and with few level of Mexican parts and local resources, most of the value of this sector belong to Factories that are used just to do low-tech jobs. This sector will be hardly impacted since most of the new investment will be directed to the Technology Sectors.
- **Technology Sector/Companies:** The most positive impacted sector, a large number of businesses are being prepared to deploy new services, technology and resources to E-Mexico. Telecommunications, Wireless , Software, Hardware and Consulting firms are among the most beneficiary sector for this boom. It is expected to receive directly more than 10 billion dollars for the next 10 years. But some of the money will come from them, so companies must be aware that there is a compromise both ways in order to participate in this Plan.
- **Mexicans,** For the purpose of this analysis we should make a notable distinction between the people of Mexico. Since half of the people will be merely observers of what will happen with E-Mexico and will receive benefit indirectly, they should be called the Low-level income people. Lack of resources like materials, education and opportunities are condemning this group to wait the results of the Plan.
 - Low level income people. Considering close to 50 Million people with limited access to education, resources and food.
 - No-Low level income people. People in the rest of the segments with more opportunities to participate in different parts of the solution.
- **International.** We can separate two groups of Countries, the ones that are Mexico's allies and will be extremely benefited from this Plan's success, and the rest, in which we probably include Countries with competitive interest to Mexico's reaching its goals.
- **Market allies** A different group of Countries may be identified sharing Mexico's vision and interest. Commercial partners (in special those with Free Trade deals),

neighbors (US, Guatemala), Historical identification (Spain, Latin America) and some other European Countries are considered Mexico's allies, since they have demonstrated a level of commitment to help and develop the Mexican vision. These group of Countries play a great role in this Plan, if the Plan keeps working adequately, more trade will be expected, less help and transfer of resources will be needed and several positive goals will be reached (reduce illegal migration, drug traffic, etc.)

- Competitors, International participants that are being affected by Mexicans entering into a e-solutions Market, like India or Brazil.

FACTORS

A group of representative factors were selected in order to facilitate the analysis. Several other important factors such Organizational Structure, Market Condition and Timing were exhaustively considered but they were not as representative as the ones listed below:

Financials (High investment, return unknown). These factor alone represent the core base of the project, assuming that the sufficiency of funds is reached as we assumed before. We need to establish a metrix system in which we could define when the Project has been successful. A cycle in time must indicate when it is necessary to stop Government intervention and when the total availability of return on investment was reached.

Besides for several stakeholders this factor is crucial, for businesses and consumers an expectations of profits and prices is assumed in certain time.

Cultural / Identity (Social Response). For more than 100 years Mexicans perceive influences from English's speaking Countries as "gringos" interventions. A long history of diverse interactions have made Mexicans incredible of what benefit could they get of using other tools than their own hands to produce food or wealth. A great deal of attention must be given to this factor.

Production (Low investment). A correspondent increase in Technological development must be accompanied by a growth in productive outcome in equal circumstances. But a shortage in investment to Production Sector is expected since a shift to Technology Investment is observed, therefore an analysis focusing the Production Factor is needed.

Education (Are we ready, Installed base, skills). A large number of trained people will be necessary in order to deploy a Plan of these dimensions. Education strategy will play an important role during the whole Plan. Adequate participation of Stakeholders on this subject will guarantee an adequate implementation.

Life Technology Cycle. This is the most important factor to observe by all stakeholders.

The Technology is already present in the market. Internet is here but we don't know for how long the market is going to hold the current set of solutions and components. If the responsible of this Plan delays, slows or commit a mistake in the planning of the adoption

of Technology that will enough to make the Plan fail. This Plan is highly dependable on the deployment's correct time.

If the Plan is to succeed a close look to a strong SWOTT analysis must be observed. If there are discrepancies between the Technology used by the Initiative it will bring mature or degraded technology to the Project.

The latest time at which the technology must be deployed in the Project is in the Application Phase, in order to obtain competitiveness globally and relate and be prepared to produce solutions used in other Countries.

Figure 1 summarize the adequate timing of implementation of any technology.

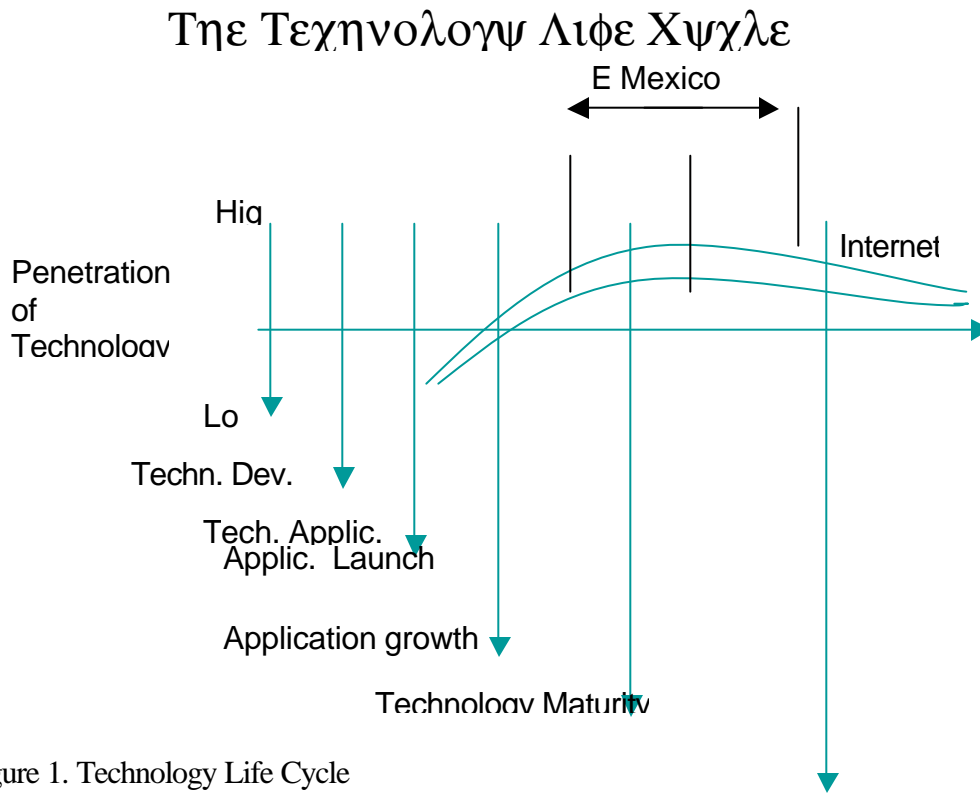


Figure 1. Technology Life Cycle

Law and regulations (Flexibility). The Plan must be shaped by an adequate legal framework, regulations must allow stakeholders facilitate the rapid depletion of resources in to the Plan. By the contrary a wrong set of laws will delay the achievement of partial results and therefore the complete expectations of the Plan.

Assimilation / Timing. Related with the Technology Life Cycle and the culture, the assimilation process must be guarantee in order to have a useful solution, in most developing countries solutions are not used but after long times, generating wasting periods and making obsolete the solutions proposed.

ANALYSIS

Table 3 Summarizes the Analysis developed including all factors.

CONCLUSIONS

Poverty is reduced thanks in great part from Education, strong Institutions and economic develop. E-Mexico will succeed increasing the economic level of its population when all people enjoy the same opportunities and use the Technology in order to benefit of its day to day activities.

Most of the goals set by the Government can be achieved, but the following observations must be taken in to account:

- An equilibrium in investment towards the new Plan and current sectors is maintained.
- Academic and research centers must be active and creative to develop ideas, solutions and mechanisms to improve the implementation of the Plan.
- Unions and big organizations that are productive now and will be affected by the new technology must be considered seriously in order to avoid a possible problems.
- A general Plan should include identification and valorization of Mexican culture, adequate and gradual dissemination of benefits must be shown in order of receive acceptance by general public.
- A long term compromise from the Head of the state must be guarantee in order to receive a continuous flow of investment from diverse stakeholders, as long as the investors perceive the involvement of the President they will join the Plan.
- Several Ministers in the Government must participate actively in the development of the Plan, principally the Education Minister, since most of the important choices are going to be defined by this stakeholder, and since this is not a Technologic Plan, Why should it be dependent of a Technical Minister?.

In General the Plan is solid with some small details to fix, requires a deep study in the technology life Cycle and also a campaign directed to manage cultural values.

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Alfredo Revilak is Assistant Managing Director for the Institute for Knowledge Management from the School of Engineering and Applied Science of the George Washington University.

Mr. Revilak has an extensive and strong expertise as Consultant in e-Government and Banking sectors in the USA and Latin America. He has been working with the World Bank in the Development and Economic Research Area, and with important Corporations from India like HCL in North America.

He implemented several projects nationwide with the Mexican Government ranging from operations in the Ministry of Communications and Transports to surveillance banking operations in the Ministry of Treasury.

He taught courses of E-Government and Technology Impact Analysis at Master's and Bachelors Levels at ITAM and INAP in Mexico City.

Mr. Revilak holds a Computer Engineering Bachelors from ITAM and a Masters in Computer Science from the University of Arizona in Tucson.

For the last 4 years Mr. Revilak has been working closely with Governments and private Corporations to establish a common platform to facilitate the integration of several Technologies, Cultures and Institutions into successful E-Governments Projects.

Currently, M.Sc. Revilak is candidate for Doctor in Science at GWU in the Discipline of

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