National Digital Strategy

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INDEX

ADDRESS

On June 10th, 2013, I enacted the Decree to Amend the Mexican Constitution in regard to Telecommunications and Economic Competition.

This reform, which encourages competition and investment in the sector, will increase the availability and quality of telecommunications services at a lower cost. Moreover, it stipulates that the state has the obligation to guarantee Mexicans' right of access to Information and Communication Technologies (ICTs).

In order to enforce this right, we present the National Digital Strategy. This document will guide the actions and policies required to bring ICTs to the population. The goal is to incorporate these technologies into the everyday lives of people, businesses and government.

The National Digital Strategy, coordinated by the President's Office, will be key to democratizing access to tools such as the Internet and broadband, and making the most of the endless possibilities they offer.

By achieving greater digital inclusion, we will have better informed, more participatory citizens, with more efficient and productive micro, small and medium enterprises, as well as a closer, more open and effective government.

Ensuring the right of access to ICTs will enable us to be a freer society and a country with a greater potential for development, in which every Mexican has the tools required to write his own success story.

ENRIQUE PEÑA NIETO

President of Mexico

FOREWORD

The National Digital Strategy, "Digital Mexico," is the digital action plan the Government will implement over the next few years.

This strategy was devised to meet the need to harness the potential of Information and Communication Technologies (ICTs) as a catalyst for the country's development.

The incorporation of ICTs into every aspect of the everyday lives of people, organizations and government has multiple benefits that translate into improvements in the quality of life.

Empirical evidence has shown that digitization impacts the growth of the Gross Domestic Product, job creation, innovation, transparency and effective delivery of public services, among other aspects.

This document therefore focuses on describing the digital policy the government has designed.

The National Digital Strategy is the result of months of study, work and multisectoral reflection on the Digital Mexico we wish to achieve, in which the exchange of ideas and dialogue were the guiding principles.

The Strategy is based on clear definitions, enabling those involved to strive to achieve the objectives set forth therein, which are aligned with the major goals of the National Development Plan 2013-2018 that guide the government's efforts.

Conscious of the swift pace of technological change, the National Digital Strategy is a living, working document, which will set out the lines and guidelines for the formulation, implementation and evaluation of the government's digital policy.

With the conviction that digitization is the way to further development for our country, the National Digital Strategy Coordination Office of the President's Office will make every effort to ensure that the objectives of this document are achieved for the good of Mexico and all Mexicans.

Alejandra Lagunes Soto Ruiz.

National Digital Strategy Coordinator

EXECUTIVE SUMMARY

The National Digital Strategy is the plan of action the government will implement over the next five years to encourage the adoption and development of Information and Communication Technologies (ICTs) and insert Mexico into the Information and Knowledge Society. This document is included in the National Development Plan 2013-2018, as part of the mainstreaming strategy "Close, Modern Government". [1]

The Strategy sets out the challenges Mexico faces in the digital context and the way it will cope with them through five major objectives: 1) Government Transformation, 2) Digital Economy, 3) Quality Education, 4) Universal, Effective Health, and 5) Public Safety.

The main purpose of the Strategy is to achieve a Digital Mexico in which the adoption and use of ICTs will maximize their economic, social and political impact on the quality of life. Empirical evidence has shown that digitization, understood as a concept that describes the social, economic and political changes associated with the mass adoption of ICTs, impacts GDP growth, job creation, productivity, innovation, quality of life, equality, transparency and efficiency in public service delivery. The Strategy is a response to the need to harness the opportunities that ICT adoption and development create to boost growth.

According to the digitization index constructed in the *Program for a Close, Modern Government*, published in the Official Gazette on August 30, 2013, Mexico is in last position in digitization among OECD countries, and ranked fifth in Latin America, with a value of 37.05 points for 2011. The objective of the National Digital Strategy was set on the basis of this scenario.

The Digital Mexico envisaged by this strategy has a dual purpose. On the one hand, the goal is for Mexico to achieve the average for OECD countries in the digitization index established in the Program for a Close, Modern Government by 2018. At the same time, the aim is for Mexico to achieve the indicators of the leading Latin American country (currently Chile) by 2018. In order to achieve this goal, and each of the five objectives of the National Digital Strategy, five key enablers, which are the following cross-cutting tools, have been proposed: Connectivity, 2) Digital inclusion and skills, 3) Interoperability, 4) Legal framework and 5) Open data.

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[1] The mainstreaming strategy of the National Development Plan 2013-2018, "Close, modern government," cites as one of its lines of action:

 "Establishing a National Digital Strategy to encourage the adoption and development of information and communication technologies and promote an effective government that will insert Mexico into the Knowledge Society."

Unlike the digital agendas previously drawn up for Mexico, the National Digital Strategy represents a fundamental shift in the path towards an Information and Knowledge Society. First, it is the result of cross-collaboration and coordination by all the agencies and institutions comprising the Mexican state. This collaboration has been possible because, for the first time, there is a coordinator within the government, the National Digital Strategy Coordination Office of the President's Office. Second, the fact that it reflects one of the president's pledges means that its implementation is the responsibility of the highest authority in the country. The National Digital Strategy covers the five main objectives in detail, together with the secondary objectives and enablers needed to move to a Digital Mexico. It will become a reference document for all the public policies implemented by the government to promote digitization in Mexico.

In order to make the line of the Strategy compulsory, on August 30, 2013, the *Program for a Close, Modern Government 2013-2018* was published. Objective 5 is to, *"Establish a National Digital Strategy to hasten Mexico's insertion into the Information and Knowledge Society."*

The National Digital Strategy begins with an introduction answering questions about where we are and where we are going in digitization. This section contains the Strategy's objectives for the country, together with the five enablers constituting the structural framework of the document. The following section, the body of the strategy, outlines the secondary objectives and specific lines of action comprising each of the objectives and enablers. In other words, it contains the public policy guidelines established by the Strategy. Lastly, it determines the links between the lines of action of the National Digital Strategy and the *National Development Plan 2013-2018.*

INTRODUCTION AND OVERVIEW

The adoption and use of Information and Communication Technologies (ICTs) have increased in most contemporary societies. ICTs were initially slowly incorporated into everyday life, due to their high costs and low network penetration. However, as technologies have improved and costs declined, their use has spread worldwide.

The global adoption of mobile telephony and the rapid growth of broadband have promoted the flow of ideas and goods in a global environment. ICTs changed the way people obtain information, communicate, have fun, do business, work and study. They have therefore become an element that has contributed to the development of societies that have been able to incorporate and harness them in their everyday activities.

On the basis of this scenario, the government recognizes the importance of the use and adoption of ICTs to promote the development of Mexico. A first step in this direction was taken in June 2013 when the Constitutional Telecommunications Amendment was published, with the aim of achieving greater economic competition in the sector and infrastructure development and ensuring equitable access to telecommunications. It is now essential to define a set of public policies that will encourage the adoption of and maximize the use of ICTs so that digitization will contribute to the country's development.

1. **Digitization for economic, social and political development: Definition and measurement.**

Digitization is defined as the ability of a country and its people to use digital technologies to generate, process and share information. It is also related to the concept that describes the social, economic and political changes associated with the mass adoption of ICT.

Despite the weak global economic growth of recent years, digitization contributed 200 billion dollars to global production and created nearly 6 million jobs in 2011.[1] Digitization contributes to economic growth and creates jobs as a result of improvements in firms' productivity and new industry creation.

ICTs provide a strong impetus for the adoption of new, more efficient means of production. Moreover, digitization is closely linked to innovation and also encourages the more intelligent and ecological use of human, natural and economic resources.

The potential for digitization as a tool for development is a result of its ability to affect every area of a country's life, such as poverty alleviation, the quality of education, health services, government service delivery, economic activities, and citizens' everyday lives. It is therefore essential to devise a strategy that will make technological developments available to everyone.

Regarding the definition of specific targets for digitization, the Digitization Index defined in the *Program for a Close, Modern Government*, published in the Official Gazette on August 30th 2013[2] will be used. The index considers the multidimensional impact of the use and adoption of ICTs in society. Specifically, this index covers various aspects such as affordability, reliability of infrastructure, access to networks, the capacity of the latter, their use and the training of human capital for the development of digital products and services.
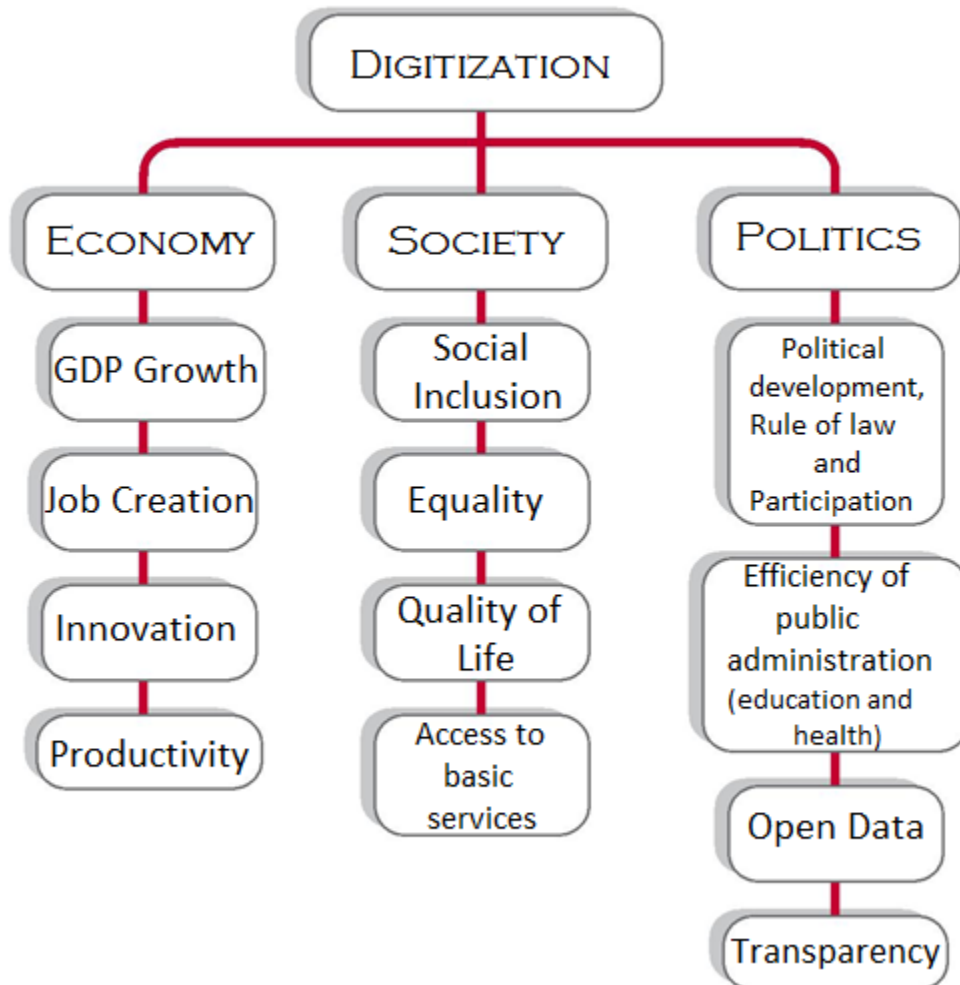
The digitization index considered makes it possible to record the impact of ICT on three dimensions of a country's development: economic, social and political; as shown in the following figure:

1 / World Economic Forum, Global Report on Information Technology,
2013, pp. vi.
2 (see Appendix I0).

Figure 1. Multidimensional Impacts of Digitization

2. The National Digital Strategy: definition, mission, vision and goal.

The National Digital Strategy is a document comprising the actions the government will implement over the next five years to encourage the adoption and development of Information and Communication Technologies (ICTs) and insert Mexico into the Information and Knowledge Society.

In this regard, the National Digital Strategy is the key document that will guide all the government's actions regarding digitization, and from which the progress, achievements and challenges in this field will be measured.

The purpose of the National Digital Strategy is to increase Mexico's digitization and therefore maximize its economic, social and political impact for the benefit of people's quality of life. To this end, the Strategy has five goals and five enablers that together will allow Mexico's digitization.

The Strategy constitutes a strong impetus by the government of public policies that increase digitization. These policies encourage both the deployment and expansion of telecommunications infrastructure and the ICT adoption and use by society to reap its benefits. In this respect, it is not enough to have access to telecommunications services; technologies must be exploited to improve various aspects of people's lives. Insofar as individuals, businesses and government integrate and adopt ICTs in their everyday activities, there will be improvements in people's quality of life, the efficiency of firms' productive processes and the efficiency of management processes, public service delivery, and government transparency and accountability.

Considering the above, the objective of the National Digital Strategy was established on the basis of the digitization index of the *Program for a Close, Modern Government*, published in the Official Gazette on August 30, 2013 (see Appendix). With respect to this index, Mexico holds the last position in digitization among OECD countries and is ranked fifth in Latin America, with a value of 37.05 points for 2011.

The Digital Mexico envisaged by this strategy has a dual purpose. On the one hand, the goal is for Mexico to achieve the average for OECD countries in the digitization index established in the *Program for a Close, Modern Government* by 2018. At the same time, the aim is for Mexico to achieve the indicators of the leading Latin American country (currently Chile) by 2018.

On the basis of this objective, mission and vision of the National Digital Strategy are as follows:

- **Mission:** Facilitate access to and promote the use of ICTs in everyday life of society and government so that they contribute to economic and social development, and improve people's quality of life.
- **Vision:**
  A Digital Mexico with a connected, participatory and innovative society that will boost its capacity for better opportunities, and an open, close, modern and transparent government, to ensure that technology is the engine of development.

3. Structural Framework of the National Digital Strategy.

The National Digital Strategy constitutes a national priority given the positive economic and social effects of digitization. On the basis of its general objective, the Strategy, a public policy document, comprises five objectives linked to the national goals set in the National Development Plan 2013-2018, which are essential to hastening Mexico's transition to an Information and Knowledge Society. The following table describes these objectives:

Table 1. Five Objectives of the National Digital Strategy

1	GOVERNMENT TRANSFORMATION	Build a new relationship between society and government, focusing on the experience of the citizen as a user of public services through the adoption of ICTs in the government.
2	DIGITAL ECONOMY	Develop a digital economy ecosystem that will contribute to achieving a prosperous Mexico, through the assimilation of ICTs in economic processes, to stimulate increased productivity, economic growth and formal job creation.
3	QUALITY EDUCATION	Integrate ICTs into the educational process, in both educational management and teaching and learning processes, as well as teacher training and the dissemination and preservation of culture and art, to allow people to be successfully inserted into the Information and Knowledge Society.
4	EFFECTIVE UNIVERSAL HEALTH	Create a comprehensive digital health policy to harness the opportunities offered by ICTs with two priorities: on the one hand increase coverage, effective access and health service quality and on the other, make more efficient use of installed infrastructure and the resources allocated for health.
5	PUBLIC SAFETY	Use ICTs to prevent social violence, by coordinating the efforts of citizens and authorities around common objectives to promote safety and prevent and mitigate the damage caused by natural disasters.

To achieve these objectives, the National Digital Strategy proposes the following five key enablers:

Table 2. Five Enablers of the National Digital Strategy

1	CONNECTIVITY	Network development and increased use of better infrastructure in the country, expansion of the capacity of existing networks, and development of competition in the ICT sector to encourage lower prices.
2	DIGITAL SKILLS INCLUSION	Refers to the equitable development of technologies and skills to operate digital services, together with social coverage and skills development with gender equity.
3	INTEROPERABILITY	Refers to organizational, technical, governance and semantic capacities, required in technological systems for consistently sharing information and transactions.

4	LEGAL FRAMEWORK	Refers to the harmonization of the legal framework in order to foster an environment of certainty and trust conducive to the adoption and promotion of ICTs.
5	OPEN DATA	Refers to the availability of government information in useful formats that can be reused by the general population to foster civic entrepreneurship and promote transparency, improve public services and foster greater accountability.

In short, the five strategic objectives and the five enablers represent the structural framework of the National Digital Strategy, on which the guidelines of the digital agenda of the Government of the Republic are based. The following figure schematizes this structural framework:

Figure 2. Structural Framework of the National Digital Strategy
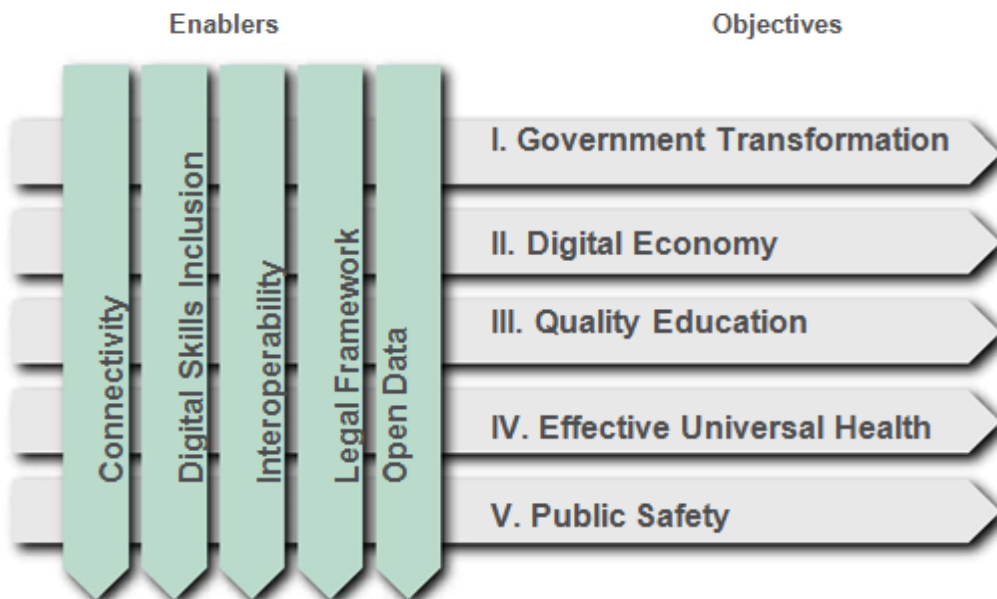
Moreover, the five strategic objectives include 23 secondary objectives (Figure 3) developed in the next section of this National Digital Strategy.

Once the mission, vision, objectives and enablers of the National Digital Strategy have been defined, and the importance of digitization for the development of Mexico explained, the following sections will specifically define the secondary objectives and particular lines of action that this document provides for the integration of the country's digital policy. The subsequent sections constitute the core of guidelines, objectives, tasks and practices comprising the National Digital Strategy, in accordance with the five goals and five enablers established within this general framework.

Figure 3. Structural Framework of the National Digital Strategy

ENABLERS

- Open Data
- Interoperability
- Digital Skills Inclusion
- Connectivity

SECONDARY OBJECTIVES

GOVERNMENT TRANSFORMATION
1. Generate and coordinate Open Government oriented lines.
2. Implement the National Single Window for Procedures and Services.
3. Create a sustainable ICT policy for Federal Public Administration.
4. Implement a national digital land management policy.
5. Use data for the development and improvement of public policy.
6. Adopt digital communication focussed on the citizen.

DIGITAL ECONOMY
7. Develop digital goods and services market.
8. Promote the development of e-commerce.
9. Encourage the innovation of digital services through the democratization of public spending.
10. Ensure financial inclusion through mobile banking schemes.

QUALITY EDUCATION
11. Develop a national policy for the adoption and use of ICTs in the learning-teaching process of the National Education System.
12. Expand range of educational services through digital means.
13. Develop a digital cultural agenda.
14. Improve educational management through ICT use.

EFFECTIVE UNIVERSAL HEALTH
15. Incorporate ICT use to achieve health system coverage and expand health service coverage.
16. Establish a single health register through an overall health list .
17. Implement Information Systems for Electronic Health Record.
18. Implement Electronic Health Record (ECE), Electronic Birth Certificate (CeN) and Electronic Vaccination Certificate (CEV) .
19. Implement Telehealth and Telemedicine Mechanisms.

PUBLIC SAFETY
20. Create tools and applications on multiple plataforms for citizens' complaints.
21. Develop digital tools for the social prevention of violence.
22. Promote civic innovation through ICTs.
23. Prevent and mitigate damage caused by natural disasters by using ICTs.

I. GOVERNMENT TRANSFORMATION[3]

Government Transformation is the construction of a new relationship between society and government, based on the experience of citizens and public service users.[4] This relationship will be constructed through the use and adoption of ICTs in the government.

Plan of Action

Actions to improve government efficiency, transparency in governance and accountability will be promoted while the government will increase its response to the demands of citizens and organizations.

Table 3. Objective I of the National Digital Strategy:
Government Transformation.

	SECONDARY OBJECTIVE	LINES OF ACTION
1	Generate and coordinate actions aimed at achieving an Open Government.	• Publish useful government information in open data format. • Create an effective information governance model. • Improve conditions for innovation through transparency and ICT use. • Create mechanisms to address issues of public concern through the collaboration of government, citizens, businesses and civil society. • Promote, within the framework of the Open Government Partnership, Open Government initiatives in coordination with appropriate agencies.
2	Implement the National Single Window for Procedures and Services.[6]	• Develop a national catalog of procedures and services within a single digital platform. • Standardize procedures and regulations and procedures and services at all levels of government. • Expedite the adoption of standards in all government agencies through guides, digital tools and training materials. • Use the Advanced Electronic Signature as a means of authentication for procedures and services.
3	Create a sustainable ICT policy for Federal Public Administration.[7]	• Establish a Technological Architecture of Public Federal Administration. • Harness and redistribute existing technological capabilities.

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3 / Program for a Close, Modern Government: Strategy 5.1.

4/ Regarding these new government-citizen relations, it is important to note that the "Government Transformation" objective is directly related to the indicator of the United Nations E-Government Survey, currently ranked 55. In this respect, this indicator will be considered for the evaluation and monitoring of the objectives of this National Digital Strategy.

5 / Program for a Close, Modern Government: Lines of action 5.1.7, 5.1.8 and 5.1.10. Pact for Mexico : Commitment 42.

6/ Program for Close, Modern Government: Lines of action 5.1.1, 5.1.2, 5.1.3, 5.1.4 and 5.1.5.

7/ National Development Plan: "Close, Modern Government" strategy.

		• Develop interoperability of systems and applications within the government.
		• Prioritize cloud computing.
		• Ensure technological neutrality.
		• Strengthen information security mechanisms.
		• Devise actions to ensure the sovereignty of data, as a country, and within organizations.
4	Implement a national digital land management policy.[8]	• Create a digital map of the country that is accessible to all citizens and in an open data format that contains disaggregated information at the property level, including land use.
		• Facilitate national territory management as well as procedures for land use changes.
		• Facilitate the development and management of the national land register through ICTs.
5	Use data for the development and improvement of public policy.[9]	• Create data usage tools as empirical support for the public policy design process.
		• Ensure privacy and protection of personal data, as well as classified and reserved information in the usage of open data.
		• Promote data philanthropy by the private sector for projects of public interest.
6	Adopt digital communication focusing on the citizen.[10]	• Establish a Digital Communication Strategy and Social networks for the government, based on the following guiding principles:
		1.-Centered on the individual and his needs as a user.
		2.-Built for inclusion, in other words, accessible to all citizens.
		3.-Simple, with clear messages.
		4.-Useful, with information contents that are useful for citizens.
		5.-Provide digital services, not just electronic portals.
		6.-Open and transparent.

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8 / Program for a Close, Modern Government: Line of action 5.1.6.

9/ National Development Plan: "Close, Modern Government" Strategy in an Inclusive Mexico.

10 / Program for a Close, Modern Government: Line of action 5.1.5.

II. DIGITAL ECONOMY [11]

A digital economy is one in which the uptake of digital technologies in economic processes triggers increased productivity and new business development, digital products and services.

Plan of Action

Public policies will be designed to encourage the supply and demand of digital goods and services, as well as the adoption of ICTs in economic processes.

Table 4. Objective II of the National Digital Strategy: Digital Economy

	SECONDARY OBJECTIVE	LINES OF ACTION:
1	Develop a market of digital goods and services.[12]	• Promote competitiveness and innovation in the ICT industry as well as their integration with the country's economic sectors.
		• Stimulate demand for digital goods and services, through the integration of digital services into firms' everyday business operations.
		• Promote the innovation and competitiveness of micro, small and medium enterprises through the adoption and use of ICTs.
		• Create promotion, financing, training and support mechanisms to boost broad Internet connectivity and the adoption of digital and technological tools in micro, small and medium enterprises.
2	Promote the development of e-trade.[13]	• Promote Internet use for shopping online and by mobile phones.
		• Increase access to financial support and services to expand online payment options.
		• Promote the population's confidence in e-commerce.
		• Build a clear, flexible, inclusive regulatory framework for entrepreneurs, retail dealers and banks.
		• Promote investment and financing in e-commerce.
3	Encourage the innovation of digital services through the democratization of public spending.[14]	• Promote quality banking and logistics services for e-commerce businesses.
		• Expand the universe of potential participants as digital service providers for the government.
		• Encourage that small businesses or small groups can provide innovative digital services for the government, to generate more competition in government procurement.

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11 / Program for a Close, Modern Government: Strategy 5.4.

12/ National Development Plan: Strategy 4.8.4 and Program for a Close, Modern Government: Lines of action 5.4.1, 5.4.6 and 5.4.7.

13/ Program for a Close, Modern Government: Line of action 5.4.3.

14/ National Development Plan: Strategy 4.8.3.

		• Promote the supply and demand for mobile banking services in urban areas.
4	Ensure financial inclusion through mobile banking schemes.[15]	• Build new patterns of connectivity through local networks, expansion of correspondent banking and supply of mobile banking services in rural areas.
		• Promote financial education that fosters the use of savings and credit instruments by the unserved population.

III.   QUALITY EDUCATION[16]

The Quality Education objective refers to the integration and use of ICTs in the educational process to insert the country into the Information and Knowledge Society.

Plan of Action

ICT use will improve educational performance and the range of services offered, will equip teachers and students with digital skills, and foster the creation and dissemination of culture.

Table 5. Objective III of the National Digital Strategy: Quality Education

	SECONDARY OBJECTIVE	LINES OF ACTION:
1	Develop a national policy for the adoption and use of ICTs in the learning-teaching process of the National Education System.[17]	• Provide ICT infrastructure for all the schools in the education system. • Expand digital skills among students through teaching practices. • Create digital content aligned with the master plans and promote the evaluation of these plans in order to incorporate the use of ICTs. • Incorporate ICTs into teacher education as a skill and teaching tool.
2	Expand the range of educational services by digital means.[18]	• Consolidate the existence of digital universities in all fields of study to expand the range of educational services offered. • Develop new educational alternatives on the basis of the supply and demand of human capital through training in technology-related areas. • Expand the supply of online educational contents.
3	Develop a digital cultural agenda.[19]	• Enable universal access to culture through the use of ICTs.

15/ National Development Plan: Strategy 4.2.2 and Program for a Close, Modern Government: Line of action 5.4.9.
16/ Program for a Close, Modern Government: Strategy 5.3.
17/ National Development Plan: Strategy 3.1.4 and Program for a Close, Modern Government: Lines of action 5.3.1, 5.3.2 and 5.3.3.
18/ Program for a Close, Modern Government: Action Line 5.3.4 and Government Commitment 39.
19/ National Development Plan: Strategy 3.3.5 and Program for a Close, Modern Government: Action lines 5.3.5, 5.3.6, 5.3.7, 5.3.8, 5.3.9 and 5.3.10.

		• Develop a national strategy of digitization, online digital preservation and accessibility of the cultural heritage of Mexico and culture in general.
		• Provide national cultural infrastructure with ICT access.
		• Encourage the development of creative industries in the field of culture.
		• Create digital platforms for the supply of cultural contents.
		• Promote the creation and innovation of culture by digital means.
4	Improve educational management through the use of ICTs.[20]	• Develop tools to facilitate educational management at the school level in state education secretariats and the Secretariat of Education.
		• Build databases that integrate information from the National Education System into the Information and Educational Management System.

IV.   EFFECTIVE UNIVERSAL HEALTH[21]

A comprehensive digital health policy entails harnessing the opportunities provided by ICTs with two priorities: on the one hand, increase coverage, effective access and health service quality and on the other, makes more efficient use of installed infrastructure and funds allocated for health.

Plan of Action

ICTs will be used to help ensure universal, effective access to health services.

Table 6. Objective IV of the National Digital Strategy: Effective Universal Health

	SECONDARY OBJECTIVE	LINES OF ACTION:
1	Incorporate the use of ICTs to facilitate the convergence of health systems and expand coverage of health services.[22]	• Achieve the consolidation of information on Mexico's health subsystems through the use of ICTs.
		• Expand health service coverage.
2	Establish a single health register through an overall health list .[23]	• Consolidate a general health list to systematize information on users and health professionals within the register.
		• Develop a single health register.

20/ Reforma Constitucional, DOF 26/02/2013: Artículo Quinto Transitorio, Section I and Plan Nacional de Desarrollo: "Close, Modern Government" Strategy in "Mexico with Quality Education".
21 / Program for a Close, Modern Government:
 Strategy 5.2.
22 / Program for a Close, Modern Government:
 Line of action 5.2.1 and Pact for Mexico : Commitment 1.
23/Program for Close, Modern Government: Line of action 5.2.2.

3	Implement Information Systems for Electronic Health Record.[24]	• Improve information in the National Health System by using ICTs.
		• Promote the exchange of information services between the various institutions comprising the National Health System (SNS) through investment in ICTs.
		• Generate technological applications with useful information for users on the Health System.
4	Implement Electronic Health Record (EHR), Electronic Birth Certificate (EBC) and Electronic Vaccination Certificate (EVC) .[25]	• Create the Electronic Health Record (EHR).
		• Implement the Electronic Birth Certificate (EBC).
		• Develop the Electronic Vaccination Certificate (EVC).
5	Implement Telehealth and Telemedicine Mechanisms.[26]	• Implement Telehealth Mechanism to implement preventive medicine practices at a distance.
		• Improve the quality of health services and facilitate medical care through the development of telemedicine techniques.
		• Promote the use of different devices, both fixed and mobile, and in multiple platforms for the provision of health services at a distance.

V. PUBLIC SAFETY[27]

The Public Safety objective refers to the use of ICTs to promote safety and to prevent and mitigate damage caused by natural disasters.

Plan of Action

Institutional and policy frameworks will be strengthened to coordinate the efforts of citizens and authorities to reinforce and consolidate public safety.

24/ National Development Plan: "Close, Modern Government Strategy" in Inclusive Mexico and Program for a Close, Modern Government: Line of action 5.2.3.
25/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Cuarto Transitorio; Pact for Mexico: Pledge 42 and Program for a Close, Modern Government: Line of action: 5.2.4.
26/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Séptimo Transitorio, Section III and Program for a Close, Modern Government: Line of action 5.2.7.
27/ Program for a Close, Modern Government: Strategy 5.5.

Table 7. Objective V of the National Digital Strategy: Public Safety

	SECONDARY OBJECTIVE	LINES OF ACTION:
1	Create tools and applications on multiple platforms for citizens' complaints.[28]	• Develop tools and applications for citizen's complaints, through mobile or fixed devices.
2	Develop digital tools for the social prevention of violence.[29]	• Develop digital tools to disseminate timely information for the social prevention of violence. • Create digital mechanisms to address issues of violence in children and adolescents. • Strengthen addiction prevention actions through the use of digital tools, from a public health perspective. • Provide information on digital media to enable citizens to engage in preventive actions to avoid being victims of violence. • Detect and intervene in a timely fashion in learning and behavior problems through ICTs.
3	Promote civic innovation through ICTs.[30]	• Promote civic innovation and citizens' capacity to participate in public affairs regarding safety. • Encourage the joint creation with the public, of new public services and solutions to public problems through digital tools.
4	Prevent and mitigate damage caused by natural disasters by using ICTs.[31]	• Promote the use of technologies for prevention, early detection and effective response in natural disasters. • Develop online services and applications that will make it possible to address the population's risk from natural phenomena and make the work of civil protection more effective. • Ensure transparency in the use of federal resources in response to natural disasters through digital tools. • Promote the establishment of prevention and action plans for the use of telecommunications infrastructure, both public and private, in case of contingencies or disasters. • Telecommunications services operators will be obliged to draw up contingency plans.

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28 / Program for a Close, Modern Government: Line of action 5.5.1 and 5.5.2.
29/ National Development Plan: Strategy 1.3.1 and Program for a "Close, Modern Government Strategy"
5.5.3 and 5.5.4/ Program for a Close, Modern Government: Line of action 5.5.5 and 5.5.6.
31/ National Development Plan: Strategy 4.5.1 and Program for a Close, Modern Government 5.5.7.

VI. Enablers

In order to achieve the objectives of the National Digital Strategy, five cross-cutting enablers have been proposed that are necessary for achieving the goals of the strategy, and as such, are tools that are directly related to the lines of action. The five enablers are:

1. Connectivity.
2. Digital Skills Inclusion.
3. Interoperability.
4. Legal Framework.
5. Open Data.

1. Connectivity[32]

Connectivity refers to network development and increased use of better infrastructure in the country, expansion of the capacity of existing networks, and the development of competition in the ICT sector to encourage lower prices.

Given these challenges, the government has made significant progress in expanding access to telecommunications services. The Constitutional Telecommunications Amendment, published in June 2013, recognizes that the state must guarantee competence, quality, diversity, universal coverage, interconnection, convergence, free access and continuity. To this end, efforts are being made to encourage competition by strengthening the regulatory and institutional framework and establishing three concrete[33] mandates to be implemented by the government, in order to ensure universal coverage of television, radio, telephone and data services for the whole country. Moreover, the Investment in Transport and Communications Infrastructure Program 2013-2018 presented in July 2013, provides for investment in telecommunications in order to bridge the digital gap.

In order to achieve connectivity, the following initiatives will be developed:

Table 8. Initiatives for Enablers

ENABLER 1: CONNECTIVITY
1   **Extension of optic fiber backbone.** The optic fiber backbone will be expanded to increase national capacity to transport information and bring it to markets that have not been served due to their lack of capillarity and will thereby make these markets attractive to existing or new, local, regional or national operators of fixed or mobile services that rely on the trunk network.[34]

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32 / Program for a Close, Modern Government: Strategy 5.6.1 and 5.6.2

33/ The construction of a robust, telecommunications trunk network, the installation of a shared network of wholesale mobile services and connection to public sites in the transitory articles of the constitutional telecommunications amendment.

34/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Cuarto Transitorio; Pact for Mexico: Pledge 41.

2	**Use of a shared wholesale mobile service network.** A shared mobile service network will be used to promote the population's effective access to broadband and telecommunications services.[35] Steps will be taken to promote local and regional telecommunications operators that serve populations that do not offer broadband services or offer these services under competitive conditions.
3	**Access to Broadband Internet through the Connected Mexico Program.** Access to broadband Internet in public places will be guaranteed by identifying the number of buildings to be connected each year, until universal coverage is achieved.[36] Efforts will be made to ensure that in public places, broadband connectivity has sufficient capacity to meet demand and therefore the potential number of users at each site must be considered.
4	**Streamlining and cost reduction in the use of telecommunications operators' networks.** Efforts will be made to identify telecommunication operators and make them available in the largest possible range of public places, ducts, poles and, in general, rights of way in the state's passive infrastructure in order to speed up and reduce the costs of the use of their networks. [37] Steps will be taken to encourage infrastructure operators to install these public rights of way, sharing with other operators when technical, safety and operational conditions allow.

5	**National Radioelectric Spectrum Program.**[38]
	Among other principles, the plan:
	  a. Will promote the optimal use of the bands 700 MHz and 2.5 GHz based on the principles of universal, non-discriminatory, shared and continuous access;
	  b. Will reorganize the radioelectric spectrum of radio and television stations;
	  c. Will determine the needs of the radioelectric spectrum to meet the demand for broadband services in the short, medium and long term;
	  d. Will ensure the existence of spectrum for both medium distance and last mile links and;
	  e. Will establish a spectrum tender in the short, medium and long term, aligned with international spectrum remits for broadband services.

6	**Long-term satellite policy.** Incorporate new satellite technologies and encourage the guarantee of national capacities for the following generations of satellites.[39]
7	**Coordination mechanisms between the three levels of government for the joint use of all their networks.** Through the Connected Mexico Project, these coordination mechanisms will be established to avoid the use of unnecessarily redundant infrastructure.[40]
8	**Installation of (IXP Internet Exchange Points).** In order to optimize the use of the backbone networks and allow the transport of the national traffic, border crossings will not be used. These exchange points will be installed, which will result in reduced costs for the benefit of end users.
9	**Content distribution centers and data centers connected to backbone networks and IXP with broadband.** In order to optimize network use and have robust infrastructure for services in the "cloud", data distribution centers will be created. The orderly, timely transition to version 6 of the IP protocol (IPv6) will also be promoted.

35/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Cuarto Transitorio and Pact for Mexico: Pledge 44.
36/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Séptimo Transitorio, fracción II and Pact for Mexico: Pledge 42.
37/ Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Séptimo Transitorio, fracción III
38/ Reforma Constitucional, DOF 26/02/2013: Artículo Décimo Séptimo Transitorio, fracción V.
39/ Plan Nacional de Desarrollo: Strategy 4.5.1.
40/ National Development Plan: Strategy 2.5.3.

10	**Sufficient financial resources for infrastructure.** Domestic and foreign, public and private investments will be encouraged in order to expand the broadband infrastructure, especially in rural and marginalized areas. Efforts will be made to ensure that public investment in telecommunications infrastructure does not displace private investment.

2. Inclusion and Digital Skills[41]

The inclusion and the development of digital skills is linked to the need for all sectors of society to take advantage of and use ICTs on a daily basis, in addition to obtaining access to telecommunications services. This enabler promotes the equitable development of technologies and skills to operate digital services, and democratize access to ICTs, through the following initiatives:

Table 9. Initiatives for Enablers

	ENABLER 2: INCLUSION AND DIGITAL SKILLS
1	**Social Coverage Incentives.** Provide incentives for social coverage by the operators.
2	**National Digital Inclusion Campaign.** Reinforce the National Campaign for Digital Inclusion with particular emphasis on indigenous people, senior citizens, people with disabilities and groups living in marginalization and extreme poverty.
3	**Inclusion and digital skills with gender equity.** Incorporate a vision of gender equity into policies to promote inclusion and the development of digital skills, understanding ICTs as cultural and technical tools that contribute to equal opportunities and gender equity. ICTs will be used for the inclusion of girls and women, encouraging their participation in political, economic and social issues, while the prevention of violence and the various forms of discrimination against women will also be strengthened.
4	**National network of community centers for training and digital education.**[42] Establish a national network of community training and digital education centers to provide the whole population with access to telecommunications services and teach them to use them to benefit their quality of life.
5	**Digital Safety Skills.** Undertake projects that will develop skills for the prevention of criminal acts against children and adolescents, such as cyberbullying, sexting, child pornography and violence, in coordination with the appropriate agencies and institutions.

3. Interoperability[43]

Interoperability refers to the ability of systems to exchange information from the government to achieve common goals. Interoperability has four aspects:

41/ National Development Plan: Strategy 4.5.1 and Program for a Close, Modern Government: Strategy 5.6. 42/
National Development Plan: Strategy 4.5.1.
43 / Program for a Close, Modern Government:
 Strategy 5.6.

- **Technical:** use of technological solutions favoring neutrality and interoperability.
- **Semantic:** use of mechanisms that enable the information exchanged to be understood unambiguously.
- **Organizational:** Implementation of organizational processes for the availability of information.
- **Governance:** development of institutional components, spaces for dialogue and agreements required to define interoperability standards and their implementation.

The following initiatives will be carried out to ensure interoperability:

Table 10. Initiatives for Enablers

	ENABLER 3: INTEROPERABILITY
1	**Guidelines and policies for the interoperability, exchange and validation of information held by the state.** Create policy documents that allow the use of software for processing interoperable data in all government offices.
2	**Interoperability of identification documents.** Promote the interoperability of Birth Certificates, the registration and issue of Birth Certificates, the Single Population Register Code (CURP), and the Advanced Electronic Signature, in order to make management processes within public administration more efficient.
3	**Simplification of relations between citizens and government through interoperability.** Enhance citizens' experience in performing government paperwork, thereby achieving benefits by simplifying and facilitating their relations with the government.

4. Legal Framework[44]

This refers to the harmonization of the legal framework in order to foster an environment of certainty and confidence that will encourage the adoption and promotion of ICTs, which involves the analysis of the legal framework surrounding the various issues included in the Strategy, such as:

- Human rights protection.
- Internet Governance.
- Personal Data Privacy and Protection.
- Information security and cybercrime.
- Advanced Electronic Signature.
- Ecommerce.
- Intellectual property.
- Digital Government.
- Digital education and health.
- Digital economy.

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44 / Program for a Close, Modern Government: Strategy 5.7.

As well as any other aspect of the legal framework that is relevant to achieving the objectives of the National Digital Strategy. This is achieved through the following initiatives:

Table 11. Initiatives for Enablers

ENABLER 4: LEGAL FRAMEWORK
1 **Actions for Internet Governance.**   Determine, from the President's Office, the position and actions to be taken on Internet Governance.
2 **Legal harmonization for Government Transformation.**[45]   Review and harmonize the regulatory framework governing procedures and services, procurement and use of ICTs within the Federal Public Administration, and establish guidelines on civic participation and the open data plan.
3 **Regulatory adjustments for effective health**[46]   Evaluate and adapt the regulatory framework to establish guidelines and best practices in the health sector in relation to the use of ICTs in order to achieve the gradual automation of the different levels of health care, and health care in telehealth and telemedicine, and health management, to enable the convergence and expansion of health service coverage.
4 **Update the legal framework governing the teaching-learning process, skills for ICT use, the Open University and educational contents.**[47]   Generate the regulatory environment that will make it possible to obtain the highest benefit from ICTs for learning and knowledge production.
5 **Legal adjustments for the development of the digital economy.**[48]   Generate a legal environment that will facilitate the development of a digital economy ecosystem, where creativity and innovation thrive and boost the productivity of workers and enterprises.
6 **Promote the incorporation into the regulatory framework of best practices for prevention and public safety.**[49]   The regulatory framework must establish best practices to enable the various sectors of society to prevent risks to their integrity and assets as well as engage in constant legal harmonization regarding preventive measures for security risks arising from inappropriate or appropriate ICT use.

5. Open Data[50]

Open data is a crucial mechanism for building experimental spaces in which participatory and innovative citizens can interact closely with public officials to create solutions to social problems and promote transparency and accountability among citizens. This enabler refers to the use of government information in open formats that will serve as a basic infrastructure for establishing mechanisms for the co-creation of public services and thereby trigger a collective innovation ecosystem around the country's major development goals.

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45 / Program for a Close, Modern Government: Strategy 5.1.9, 5.6.6, 5.6.7, 5.6.8 y 5.7.1 to 5.7.7
46 / Program for a Close, Modern Government: Strategy 5.2.9 and 5.2.10
47 / Program for a Close, Modern Government: Strategy 5.3.3.
48 / Program for a Close, Modern Government: Strategy 5.4.4, 5.4.5, 5.4.8, 5.4.9 and 5.7.3
49 / Program for a Close, Modern Government: Strategy 5.5.3.
50 / Reforma Constitucional, DOF 11/06/2013: Artículo Décimo Cuarto Transitorio; Pact for Mexico: Pledge 42.

The value of open data lies in the ability to derive new services and findings from them. These data must be: i) ubiquitously accessible ii) public information; iii) free and available in machine-readable formats, iv) have clear licenses allowing any use by any person; v) primary, timely, and vi) reusable. Regarding Open Data, the following initiatives will be carried out:

Table 12. Initiatives for Enablers

ENABLER 5: OPEN DATA	
1	**National Policy on Open Data.** Enable the information held by the government to become a public good that will have an impact on social and economic welfare.
2	**Social participation in the planning and evaluation of public policies through ownership, use and re-use by third parties of public information.** Promote participation through free use and re-use, to trigger citizens' participation in finding solutions to public problems and the design of evidence-based public policies.
3	**Economy of new products, applications and services using Open Data.** Promote the creation of new products and applications and trigger the digital economy through the dissemination of public information in open data format.
4	**Open Data Evaluation Mechanisms in the Federal Civil Service.** A cross-cutting mechanism for the monitoring and evaluation of the open data policy will be promoted throughout the Federal Government in accordance with the highest international standards in this area.

The Importance of the National Digital Strategy for the National Development Plan 2013-2018

This section describes the Strategy's contribution to the development of Mexico at the broadest level, in other words, through its contribution to the goals of the National Development Plan *2013-2018*.

1. The National Digital Strategy and the National Development Plan Goals 2013-2018

1. Mexico at Peace

In the National Development Plan 2013-2018 (NDP), the Mexico at Peace objective focuses on the advance of democracy, governance and public safety. To achieve these ends, civic participation is seen as the core of the relationship between government and society, since it allows the development and strengthening of the social fabric that prevent the destruction of peace and the improvement of transparency and accountability by reducing corruption.

In this respect, the use of ICTs that promote the Strategy will encourage civic participation to achieve a Mexico at Peace, through:

i) Open data access to government public information that is useful and valuable for public safety.

ii) Access to channels of communication and interaction as social networks, blogs and wikis that enable people to become more active in strengthening civic culture monitoring public action.

iii) Access to the delivery of public services and digital procedures, available at any time and place, to bring government and individuals closer.

iv) The creation of mechanisms that allow citizens' reports on adverse events or criminal behavior that violate the population's security.

2. *Inclusive Mexico*

The objective of social inclusion emphasized in the NDP is based on several strategies whose effectiveness is directly related to ICTs. In this respect, the digitization promoted by the Strategy contributes to achieving an inclusive Mexico since:

i) It makes it easier for the government to provide access to quality public services, thereby promoting social inclusion.

ii) It enables human rights to be guaranteed regardless of people's social status.

iii) It also allows the exercise of human rights directly related to ICTs.

iv) It enhances accessibility for people with disabilities, and thereby their full social inclusion.

v) It increases access to health services through the use of ICTs to generate a comprehensive digital health policy.

3. *Mexico with Quality Education.*

Within the NDP, education is considered a key factor in the integral development of individuals and the population. The training and strengthening of top-level human capital are linked to the advancement of digitization and the adoption and use of ICTs. It is therefore necessary to develop a scientific-technological ecosystem linked to educational institutions, research centers and public and private sectors around the development of a scientific, technological infrastructure. In this regard, the Strategy's objectives contribute directly to the improvement of education since the adoption of ICTs makes it possible to:

i) Reduce the likelihood of dropout by providing more intensive support for at-risk students.

ii) Expand the opportunities of access to education in all regions and sectors of the population.

iii) Provide universal access to culture.

iv) Promote distance education enabled by digital technologies.

4. Prosperous Mexico

To achieve a Prosperous Mexico, the National Digital Strategy is contributing to the growth of the economy in the following ways:

i) It facilitates the development of a digital economy ecosystem.

ii) It contributes to the efficiency of production processes, the opening of new markets and interaction in the global economy. All this encourages the development of micro, small and medium enterprises.

iii) It promotes the quality of employment, including the reduction of the informal sector and formal job creation through:

   a. Job creation in the sectors directly related to the Strategy, such as the telecommunications sector, professional services and construction.

   b. Job creation in sectors that provide inputs for the telecommunications industry, such as steel and electrical products.

   c. The creation of new businesses based on digital technologies, such as electronic commerce, digital content distribution, the mobile applications market, social media and creative industries on the Internet.

5. Mexico: An Actor with Global Responsibility

Within global society, Mexico needs to resume a more active role and strengthen its presence globally as a country. This will be able to be reinforced by the National Digital Strategy, since it will allow:

i) Integration with developed nations, for the development of digital technology infrastructure; international cooperation, which will reduce the cost of regional integration; cultural, scientific and technical cooperation; and approaching business sectors closer to the rest of the world.

ii) The consolidation of the network of diplomatic missions as an effective tool for the dissemination and promotion of cultural contents and Mexico's image through high-impact activities.

iii) Improved management systems for migration.

In sum, the National Digital Strategy will be important in positioning Mexico on the international level, with leadership, responsibility and commitment, where ICTs are key to the development of a global society in the digital era.

2. Integration of the National Digital Strategy into the National Development Plan 2013-2018.

This section identifies the strategies that make up each of the goals of the NDP, on which the strategy has a positive impact.

Table 13.
National Development Plan Strategies 2013-2018 impacted by Digitization

NATIONAL GOALS	NDP STRATEGIES IMPACTED BY NATIONAL DIGITAL STRATEGY
MEXICO AT PEACE	Encourage activities that promote the construction of citizenship as the axis of the relationship between state and society.
	Expand communication channels that allow citizens to participate in ensuring national security.
	Combat corruption through monitoring processes regarding the performance of state staff.
	Provide access to a transparent context of ministerial action.
	Promotion of the development of institutional capacities and management models to achieve effective state and municipal public administration.
INCLUSIVE MEXICO	Improvement of the quality of life in homes with shortages.
	Economic development of indigenous peoples and communities.
	Ensure access to and quality of health services, regardless of social status.
MEXICO WITH QUALITY EDUCATION	Teachers' Professional Development.
	Modernization of QUALITY "Teaching workshops, laboratories and facilities." Incorporation of ICTs into the teaching-learning process.
	Expansion of tutorial support systems.
	Expansion of opportunities for access to education in all regions and sectors of the population.
	Universal access to culture.
	Promotion of an entrepreneurial culture in higher education.
	Training and strengthening of high-level human capital. Development of regional scientific and technological ecosystems.
	Linking higher education institutions and research centers to the public and private sectors.
	Development of scientific and technological infrastructure.
PROSPEROUS MEXICO	Create sustainable, inclusive economic growth based on the comprehensive, balanced development of all Mexicans.
	Promotion of quality employment.
	Facilitate and provide favorable conditions for the development of creativity and innovation in the economy.
MEXICO: AN ACTOR WITH GLOBAL RESPONSIBILITY	Consolidation of relations with the United States and Canada to promote regional competitiveness and convergence.
	Integration with Central America and Caribbean nations.
	Cultural, scientific and technical cooperation with Europe.
	Bring business sectors closer to Asia-Pacific.
	Consolidation of network of diplomatic missions as an effective tool for dissemination and promotion.

Thus, it is clear that the National Digital Strategy (NDS) directly helps to achieve the national goals and strategies included in the National Development Plan 2013-2018. Even more specifically, Table 20 shows the impact of each of the five objectives of the National Digital Strategy within the NDP goals and strategies:

Table 14. Impact of NDS on National NDP goals 2013-2018[51]

National Goals	NDP Strategies Impacted by the National Digital Strategy	Effective Universal Health	Government Transformation	Quality Education	Digital Economy	Public Safety
Mexico at Peace	Encourage activities that promote the construction of citizenship as the axis of relations between state and society.		✔	✔		✔
	Expand communication channels that allow citizens to participate in ensuring national security.		✔	✔		✔
	Combat corruption through monitoring processes regarding the performance of state staff.		✔	✔		
	Provide access to a transparent context of ministerial action.		✔	✔		
	Promotion of management skills and models to achieve effective public administration.		✔			
Inclusive Mexico	Improvement of the quality of life in homes with shortages.	✔		✔		
	Economic development of indigenous peoples and communities.			✔	✔	
	Ensure universal access and quality of health services.	✔			✔	
Mexico with Quality Education	Teachers' Professional Development.			✔	✔	
	Modernization of workshops, laboratories and teaching facilities.		✔		✔	
	Embedding ICTs in the teaching-learning process.		✔	✔	✔	

51/ The impact of the National Digital Strategy could be extended to other National Development Plan goals. The impact analysis in Table 1 is for information only.

National Goals	NDP Strategies Impacted by the National Digital Strategy	Effective Universal Health	Government Transformation	Quality Education	Digital Economy	Public Safety
Mexico with Quality Education	Expansion of tutorial support systems.		✔	✔		
	Expansion of opportunities for access to education in all regions and sectors of the population.			✔	✔	
	Universal access to culture.			✔	✔	
	Promotion of an "entrepreneurial culture" in higher education.				✔	
	Training and strengthening of high-level human capital.				✔	
	Development of regional "scientific-technological co ecosystems."				✔	
	Linking higher education institutions and research centers to the public and private sectors.				✔	
	Ensure universal access and quality of health services.				✔	
	Development of scientific and technological infrastructure.		✔		✔	
Prosperous Mexico	Generate sustainable, inclusive economic growth.			✔	✔	
	Promotion of quality employment.			✔	✔	
	Facilitate and provide favorable conditions for the development of creativity and innovation in the economy.			✔	✔	
Mexico: An Actor with Global Responsibility	Consolidation of relations with the United States and Canada to promote regional competitiveness and convergence.		✔		✔	
	Integration with Central America and Caribbean nations.		✔		✔	
	Cultural, scientific and technical cooperation with Europe.		✔	✔	✔	
	Bring business sectors closer to Asia-Pacific.				✔	
	Consolidation of network of diplomatic missions as an effective tool for dissemination and promotion.		✔			

Final Considerations

The National Digital Strategy comprises the public policies designed to achieve the digitization of Mexico through five objectives developed in 23 secondary objectives in their respective lines of action, and five key enablers that will make it possible to achieve the objectives referred to. All the components of this strategy were described in detail in this text.

The key action underlying this Strategy is that it must at all times ensure that digitization becomes an instrument for the development of Mexico. Specifically, the goal is for Mexico to become the leading country in digitization in Latin America, and to be positioned with a similar level of digitization to the OECD average by 2018, in keeping with the indicator established in the *Programme for an Open, Close, Modern Government*, published on August 30, 2013.

The incorporation of ICTs into every aspect of the everyday lives of people, organizations and government, has multiple benefits that translate into an improvement in people's quality of life. Empirical evidence has shown that digitization impacts the growth of the Gross Domestic Product, job creation, innovation, transparency and effective public service delivery, among other aspects.

Due to this positive impact on the country's development, the National Digital Strategy, as a central document of the government's digital policy, proposes actions that constitute an unprecedented effort to organize and systematize the digitization policy, in response to growing demands of a world that is increasingly integrated into the Information and Knowledge Society.

The National Digital Strategy is a living document that will evolve during its implementation, and will be complemented by other documents that focus on the definition and development of specific projects and public policy measures comprising each of the lines of action described here.

GLOSSARY

Technological Architecture of the Federal Public Administration: framework that establishes the technological components to be used to improve the functioning of Federal Public Administration (FPA) in order to ensure the interoperability, security and operation of the services provided by the FPA.

Mobile banking: provision of financial services (monetary transactions, savings, credit and insurance) through mobile devices, mainly using cell phones.

Broadband: data transmission capacity which increases the speed of the information flow.

Digital gap: refers to unequal access to ICTs.

Ecommerce: refers to the sale of products and services through electronic means such as the Internet and other computer networks.

Cloud computing: model providing technology and business services on the Internet, where information is kept in Internet servers rather than storage devices, allowing greater security and faster access to the same, as well as increased volume of data transfer in less time.

Digital Communication: government strategy for providing information via digital media, focusing on citizens.

Connectivity: degree of connection between social, government and any other kind of institutions, which involves the level of use of infrastructure in the country.

Open Data: public information available online for free, in machine-readable formats, with a license to be used, reused and redistributed freely by anyone, and subject only to the attribution requirement.

Digitization: social process that involves political, economic and social changes associated with the mass adoption of ICTs.

Digital economy: adoption of ICTs in business processes, such as production, marketing, procurement, which have a positive impact on society, businesses, services and consumers.

Radio Spectrum: medium through which the electromagnetic waves used in wireless communications that transmit information (data, images, voice, sound, etc.) are spread.

Electronic Health Record (EHR): set of patient-centered information stored in electronic media, documenting the medical care provided by health professionals under the health regulations within a health facility. The system whereby an Electronic Health Record is administered is an Electronic Health Information Record System.

Optic fiber: means of transmitting data using light pulses utilized in telecommunications due to its ability to send large amounts of data over long distances.

Advanced Electronic Signature: dataset and characters that allow the identification of the signatory, which has been created by electronic media under his exclusive control. It is linked solely to the signatory and the data referred to, making it possible to detect any subsequent changes to the latter, and has the same legal effects as a handwritten signature.

Open Government: involves a transformation of the government's relations with society, characterized by establishing direct communication channels and forms of collaboration with citizens, with the aim of achieving greater accountability, efficiency and effectiveness in government actions.

Digital Government: entails the adoption of ICTs in government to improve the provision of goods and services, and the enhancement of administrative efficacy and efficiency.

Digital skill: skills and knowledge for personal development in any situation of the Information and Knowledge Society. Ranges from the ability to use digital devices (computers, smart phones, etc.) to using the Internet, so that it can be utilized for all activities (social, relations with government or economic).

Digital Inclusion: is the democratization of access to ICTs so that the whole population can be successfully inserted into the Information and Knowledge Society.

Creative industries: refers to industries that combine the creation, production and marketing of creative contents that contain intangibles and are cultural. It also includes those in which the product or service contains a substantial artistic or creative element and includes areas such as architecture and advertising.

Civic Innovation: schemes to generate innovative solutions to public problems through the participation of civil society.

Interconnection:
 "The way in which different networks are connected to allow traffic to pass between them, including driving traffic on the network of one operator on behalf of another operator or service provider" (OECD) and *"the commercial and technical arrangements whereby service providers connect their equipment, networks and services to enable consumers to access the services and networks of other service providers "(ITU).*

Interoperability. ability of information systems to exchange data and facilitate the pooling of information and knowledge.

IPv6: new version of the Internet Protocol (IP) designed to replace the Internet Protocol version 4 (IPv4).

Technological neutrality: position of Public Administration regarding goods and service providers, who are entitled to a free choice of technology.

Net Neutrality: Principle designed to ensure that there are no restrictions or discrimination for data transmission on the Internet.

IXP or (Internet Exchange Points): physical infrastructure through which Internet service providers exchange Internet traffic between their networks.

Information security and data protection: set of preventive and reactive measures of organizations and technological systems making it possible to safeguard and secure information, seeking to maintain the confidentiality, availability and integrity of the latter,

Information Society and Knowledge: refers to the transformation of a society that comprises ethical, social, political, and economic aspects, because of the widespread adoption of ICTs.

Information Technology and Communication (ICTs): media and communication channels integrated into a single technological tool that allows interactive communication, capable of generating information and sharing knowledge.

Telemedicine: provision of medical services remotely through the use of ICTs, such as consultations, diagnoses and surgeries remotely and in real time.

Telehealth: provision of health services by professionals, for which distance is a critical factor, using ICTs to exchange valid information for improving the quality of health of individuals and communities.

Backbone: main Internet backbone connections, consisting of interconnected commercial, government, university and other large capacity routers that transport data between countries and continents. Not to be confused with backhaul, networks that link the backbone to local or last mile networks.

Digital Universities: Higher education institutes offering online and distance courses.

Appendix: digitalization index set in the Program for an *Open, Close, Modern Government.*

INDICATOR DETAILS	
ELEMENT	FEATURES
INDICATOR	Digitization Index (ID).
CROSS-CUTTING OBJECTIVE	5. Establish a National Digital Strategy to hasten Mexico's inclusion in the Information and Knowledge Society.
GENERAL DESCRIPTION	Measures the cumulative effect of the adoption and use of ICTs in the economic and social fabric of a country, through its integration at three levels: individual, economic firms and corporate companies. The index identifies four stages of development in digitization: 1) Advanced (ID> 50), 2) Transitional (35 <ID <50), 3) Emerging (20 <ID <35), 4) Limited (ID <20).
OBSERVATIONS	The index has been calculated for 184 countries, using data from 2004. It consists of six components: 1) Affordability. It takes into account the cost of a residential line • ja, the cost of mobile telephony and the cost of Broadband, all three being adjusted for per capita GDP. 2) Accountancy This is the per capita investment (mobile, broadband and landline). 3) Access. Measured by different metrics, penetration and coverage of network infrastructure. 4) Capacity. Measures the ability to access international internet kbps/user as well as Broadband speed. 5) Use It takes into account electronic commerce as a percentage of retail trade, the e-government index based on the Internet, the percentage of Internet users, spending on mobile services per user, per capita single visitors to the dominant social network and the use of text messages per subscriber. 6) Human Capital. Includes the percentage of engineers in the total population and the labor force with secondary education as a percentage of the labor force.
Measurement Frequency	ANNUAL
Source	KATZ, R., KOPUTROUMPIS, P. and CALLORDA, F. "THE LATIN AMERICAN PATH TOWARDS DIGITIZATION".
ADDITIONAL REFERENCES	National Digital Strategy Coordination Office President's Office.
37.05	Goal 2018
Baseline 2011	59.29

Components of Digitization Index

Pillars	Components	Definition
Affordability	Residential Fixed Line Cost adjusted for GDP per capita.	Residential Landline Rate (3-minute call to landline at peak rate) adjusted for GDP per capita.
		Residential Fixed Line Cost adjusted for GDP per capita.
	Cost of Mobile Telephony adjusted for GDP per capita.	Mobile Telephony Prepaid Rate (1 minute call off the grid in peak rate) adjusted for GDP per capita.
		Connection fee for Prepaid Mobile Phone adjusted for GDP per capita.
	Fixed Broadband Cost adjusted for GDP per capita.	Monthly Cost of Fixed Broadband Connection adjusted for GDP per capita.
Network	Per capita investment (mobile, broadband and landline).	Investment in Mobile Phones per capita.
		Broadband investment per capita.
		Investment in Fixed Telephony per capita.
Accesibility	Network penetration.	Fixed Broadband Penetration.
		Mobile Telephony Penetration.
	Other metrics of infrastructure penetration and coverage.	Mobile Broadband Penetration.
		PC penetration in the population.
		Mobile Telephony Network Coverage.
Capacity	Broadband speed.	International Internet Access Capacity kbps/user).
	International Internet Access Capacity	Broadband speed (peak Mbps, Average Mbps).
Use	Ecommerce.	E-commerce as a percentage of retail commerce.
	E-government.	Index of Internet-based e-government.
	Internet use.	Percentage of Internet users.
	Spending on data services.	Sole visitors per capita to dominant social network.
	Access to social networks.	Expenditure on data, SMS and value added services as a percentage of income by mobile user.
	Texting traffic.	Use of text messages per subscriber.
Human Capital	Engineers.	Engineers as a percentage of the total population.
	Skilled labor.	Labor force with secondary education as a percentage of the labor force.