

# **Technological Development of priority tourist destinations and magic towns**

*Handbook T-I*

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# Volumen I

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## **ECORFAN Sciences of sustainable tourism development**

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The Handbook will offer the volumes of selected contributions of researchers contributing to the scientific dissemination activity of ECORFAN in its area of research in Sustainable Tourism Development. In addition to having a total evaluation, in the hands of the editors of the Instituto Politécnico Nacional who collaborated with quality and punctuality in their chapters, each individual contribution was refereed to international standards (RENIECYT - LATINDEX - DIALNET - ResearchGate - DULCINEA - CLASS - Sudoc - HISPANA-SHERPA-Scholar Google-DOI-REBID-Mendeley), the Handbook thus proposes to the academic community, recent reports on new developments in the most interesting and promising areas of Technological Development of priority tourist destinations and Magical Towns

Miranda-Elizarraras, Bruno • Cuevas-Rasgado, Alma Delia • Galicia-Palacios, Alexander • Santiago-Reyes Javier • Reyes-Bonilla, Jorge Arturo • Aguilar Cruz, Karen Alicia

Editors

## **Technological Development of priority tourist destinations and magic towns**

Instituto Politécnico Nacional. March, 2017.

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## Preface

Mexico is a country which has as one of its strengths, cultural and natural resources in each of its states, municipalities and localities. Customs, traditions, gastronomy, ceremonial centers, archeological zones, waterfalls, the abundance in flora and fauna; so describe each of its wonders. These resources require laws and regulations to protect and maintain them, to improve infrastructure, to be sustainable, and attractive to national and international tourism without being damaged or that the inhabitants of those places are benefited by the generation of jobs, social security among others. Balancing all the factors involved is an arduous task and requires studies such as those carried out by various governmental and educational institutions, the private sector among others.

In the next work to be published called "Compendium of tourist indicators of priority tourist destinations and magical towns", the analysis of variables and indicators of Priority Tourist Destinations is analyzed, taking as reference various guidelines, standards and information sources as The National Development Plan (NDP) 2013-2018, Tourism Sector Program 2013-2018 (TSP), Identification of Tourism Potentials in Regions and Municipalities (Fascicle 8), Competitiveness Agendas of Mexico's Tourist Destinations, (IMCO), the World Economic Forum (WEF), the Alliance for Excellence in Tourism (EXCELTUR), ITESM, the Guide for Incorporation and Permanence of the Magic Towns of the Tourism Secretariat (Sectur) with the analysis for the automation of the evaluation of the Magic Towns, INEGI, DATATUR, DENUE among others. As a result of this in-depth analysis, we reach a concentration of 2610 indicators, which are found in an indicator matrix, which can be structured in a hierarchy with a level three depth (Component, subcomponent, factor and indicator).

It is necessary to reduce these indicators, so that they identify and select those that have the greatest impact on the observation of tourism development of the destination, taking into account the sustainability, competitiveness, potential and tourism performance of priority tourist destinations and magic towns. The selection of these indicators is done with an affinity diagram or K-J method (Kawakita Jiro), which allows SWOT analysis of the CAs of priority tourist destinations and magic towns and the matrix of the 2610 indicators.

This work is intended to be of support and utility for the Ministry of Tourism in Mexico, so that they can build a future SWOT evaluation of tourist destinations. As well, for those who are interested in areas related to the topics presented in this handbook. It presents the development of incorporate indicators of the Priority Tourist Destinations and Magic Towns of Mexico, derived from Sectorial Project 242853 called Development of Information Systems for the Management of the Tourist Destinations of Mexico, where the analysis of the Project is detailed, until the Achievement of the technological innovation generated, through an Information System.

*Santiago, Galicia & Flores*, presents a preamble to the Competitiveness and Magic Towns Agendas. Also, the topic of the increase on the economic spill is addressed, using the Intelligent Management Model of Priority Tourist Destinations and Magic Towns.

*Campos, Ortega, Velázquez, Sánchez & Sánchez*, includes three field studies conducted in Tequisquiapan, Queretaro using indicators of CAs; Loreto, B. C. S with methodology WEF and Tequila, Jalisco, where an index of competitiveness was designed for Magic Towns based on the CCRR methodology.

*Jiménez & Ceron*, we present the reduction and analysis of the elements or concepts obtained when using the affinity diagram in the SWOT of the priority tourist destinations and magical towns and 2610 tourist indicators resulting from an analysis done in Project 242853.

*Ramirez, Ceron & Miranda*, we find the analysis of the processes of Incorporation and permanence of the Magic Towns through the creation of a model, which arises from the merger of Petri Nets and Pert diagrams.

*Guzmán, Reyes & Dorantes*, contains the technological development, as a result of the analysis of indicators for Magic Towns and Priority Tourist Destinations.

The following institutions were indispensable for the accomplishment of this work; through the 242853 project called Development of Information Systems for the Management of Mexico's Touristic Destinations.

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Consejo Nacional de Ciencia y Tecnología (Conacyt)  
Institute of Tourism Competitiveness (Ictur)  
Secretaría de Turismo (Sectur) y el área de la Dirección General de Gestión de Destinos (DGGD)  
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Mexico City, March, 2017

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## **Competitiveness and strategic management in destinations with high touristic potential**

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## Abstract

In the present article a proposal is developed to improve the economic spillage in destinations with high potential of use of the optimization of the public and private resources, the increase of productivity from the competitive advantages, the technological innovation and the use of the systems Information, as well as the economic trends of the tourism sector in the global environment. It addresses the management of the tourism sector through the analysis and design of competitiveness agendas, performance index and tourism indicators, with emphasis on the use of productive factors, and respect, conservation and protection of the natural, historical and cultural heritage.

**Key words: competitiveness, strategic management, productivity, technological innovation, information systems, performance evaluation**

## Introduction

Global economic trends in the 21st century are characterized by constant macroeconomic imbalances, interventionism from international organizations and metropolitan countries in the dispute over strategic resources, deregulation and liberalization of productive sectors, and international trade, consolidation of the international division of labor and the strengthening of international monopoly capital. The productive capacity of the countries like Mexico is diminished by the ignorance of the society, of programs and projects that look for the specialization within the globalization to enhance the competitive advantages.

In this scenario, the present research deals with the management of destinations with high tourism potential, based on technological innovation and the use of Information Systems (SI), which optimize the use of public and private resources to increase local and national economic pours. For this purpose, the design of competitiveness agendas, the performance index and tourism indicators is proposed, with the objective of taking advantage of productive factors, as well as proposing strategies for respect, conservation and protection of the natural, historical and cultural heritage, linking tourism promotion to detonate employment and regional development.

The first section shows the articulation of the National Development Plan (NDP) with the National Tourist Policy and the strategic value of the sector for competitiveness, growth and economic development. Within the framework of strategic management, a survey is made of statistical data as an argument for better decision-making and productive investment, given a context of macroeconomic imbalances and increasing global inequality.

The second section addresses competitiveness agendas for destinations with high tourism potential, and studies the formulation, implementation and evaluation of tourism policy as a determinant of economic output, which can be measured under a scheme of indexes and quantitative variables. To increase competitiveness and impact on the population's quality of life, it is proposed an adaptation of the Competitiveness and Sustainability Model for tourist destinations of Ritchie and Crouch, which considers the exogenous and endogenous conditions of the tourism system and its impact on the outflow of the sector.

The research also addresses the evaluation of the performance of destinations with high tourism potential, and shows the evolution of factors of production, in particular the use of technological innovation and the use of IS. In a schematic way, the results of productivity and prosperity of 140 countries from 2007 to 2016 are presented through the Global Competitiveness Index of the World Economic Forum, which intends that the decision makers benefit from data such as the sophistication of the financial Market, the conditions for the opening of business and the impulse to innovation. Similarly, the comparative results from 2015 to 2017 of the World Bank's "Doing Business" report, which identifies the results of structural reforms for doing business and protecting property, are addressed.

The research proposes as an alternative for the increase of the economic spill, the use of the Coordination Agreements on Resource Reassignment (CCRR) and the adequacy of the components of the tourism system.

Finally, the indicators of tourism and the results obtained in the economic spill and the improvement of the quality of life of the population are addressed. This section includes the recovery of the Tool of the European System of Tourist Indicators for Sustainable Destinations, where through interaction in three orders of government and economic agents, it is possible to measure the objectives, strategies and lines of action.

### **Strategic management of destinations with high tourist potential.**

The National Development Plan (NDP) of Mexico has been, during different federal administrations, the guiding axis for designing, implementing and evaluating the results of public policies with an emphasis on economic growth and development, through Sectoral, Institutional, Regional and Special Programs. Based on article 26 of the Political Constitution of the United Mexican States, the NDP 2013-2018 proposes to maximize Mexico's potential through five national goals: peace, inclusion, quality education, prosperity and global responsibility. In the same sense, three transversal axes are proposed for the articulation of the three orders of government in public policies: democratizing productivity, near and modern government, and gender perspective, with indicators that allow decision making on priority issues, through objectives, strategies and lines of action.

Contemporary economic dynamics are reflected in the decline in the incomes of countries such as Mexico, mainly as a result of fluctuations in oil prices, dependence on remittances from migration, exchange rate depreciation and insecurity. The use of natural, historical and cultural wealth, allows tourism to become a strategic productive sector and a priority of the State, to which Article 25 of the Constitution gives it the rectory of national development, which will promote competitiveness, promotion of economic growth, promotion of investment and employment, with responsible actions of equity, productivity and sustainability, of the public, private and social sectors, who must adhere to the public interest and to the use of productive resources and the care of the environment.

According to the National Institute of Statistics and Geography (INEGI), tourism accounted for MXN \$ 17,126,791 million at current prices in 2015, representing 8.7% of Mexico's gross domestic product (GDP) and 2,322,218 paid-for jobs, equivalent To 5.8% of the national total. The Tourism GDP of the year of study, includes 21.3% in rental and business services, 17% in passenger transport, 14.6% in goods and handicrafts, 10.5% in restaurants, bars and nightclubs, 9.1% in accommodation, 1.8 % In recreational services, 1.2% in timeshare, and 1% in travel agencies and tour operators. In the same vein, tourist consumption was constituted in 2015 with 78.2% internal, 13.6% receptive and 8.2% issuer; In the case of the travel motive for domestic tourism consumption is broken down into 20% for business, 37.8% for vacations, 15.7 hikers and 23.8 others. It should be noted that from 2004 to 2015 the number of international tourists dropped from 99,250 to 87,129 thousand, while "outbound" tourism decreased from 128,903 to 94,988 thousand, respectively, and in domestic tourism there is no data recorded from the autonomous public agency (INEGI, 2016). The importance of the sector in the economy lies in its vocation to create jobs, in the strengthening of small and medium enterprises, in attracting foreign exchange and in respect, conservation and protection of the natural, historical and cultural heritage.

The National Council for the Evaluation of Social Development Policy (NCESDP) based on the National Household Income and Expenditure Survey (NSHIES) indicates that in 2014 there are 55,341.6 thousand people living in poverty, of which 11,442.3 thousand of people live in extreme poverty, representing 46.2% and 9.5% respectively of the total population (CONEVAL, 2016). Faced with the disappointing results of the Mexican economy, it is urgent that Mexico generates better living conditions for the population, and use tourism as an alternative to reduce the poverty gap, in particular through the management of community enterprises for the supply of goods and services to tourists.

To achieve greater global competitiveness, the added value of destinations with high tourism potential should be improved. According to data from the World Tourism Organization (WTO), international tourist arrivals evolved from 1950 to 2015 from 25.2 to 1.186.3 million people worldwide, resulting in an economic spill of US \$ 2 to US \$ 1260.1 billion during the compared years. Data from the same agency indicate that international tourism generated in 2015 US \$ 211 billion of exports through passenger transport service to non-residents, bringing the value of tourist exports from US \$ 1.5 trillion to US \$ 4 trillion a day on average, with international tourism accounting for 7% of global exports of goods and services, and growing faster than world trade in the last four years, just below the fuel and chemical industries, and ahead of the food and automotive industries, although it is the primary source of income in many developing countries.

In the ILO Classification, Mexico received 87.1 million international visitors in 2015, made up of 55 million hikers and 32.1 million international tourists, placing it ninth in the world, only below France, the United States, Spain, China, Italy, Turkey, Germany and the United Kingdom, and above Russia, Thailand, Austria, Hong Kong, Malaysia, Greece, Japan, Saudi Arabia, Canada, Poland and the Netherlands. In the same vein, Mexico attracted income from abroad in the amount of US \$ 17,733.7 million, of which US \$ 15,825.7 million comes from tourist spending and US \$ 1,908 million from international hikers, who placed the country in the sixteenth position at the global level (UNWTO, 2016).

For the management of destinations with high tourism potential, it is necessary to establish a policy of reception of international tourism, coming from developed or emerging countries with currencies and strong economies in a context of international macroeconomic imbalances. From the countries that lead the origin of international tourism in 2015, it is a priority for Mexico to design strategies to attract visitors and capture the economic flow, but at the same time, there is an urgent need to expand tourism supply that meets the domestic demand, so as not to generate unsustainable pressures on the balance of payments.

Based on the above, it is pertinent to draw routes that attract the 128 million international tourists of China (country that registers double digit in the expenditure of tourism of constant way from 2004 to 2016) with a spending of US \$ 292.2 trillion, the 73 millions of United States with an expenditure of US \$ 112.9 billion, the United Kingdom 64 million with an expenditure of US \$ 63.3 billion. In the same way, tourists from Germany (US \$ 77.5 billion), France (US \$ 38.4 billion), Russia (US \$ 34.9 billion), Canada (US \$ 29.4 billion), Republic of Korea (US \$ 25 billion), Italy (US \$ 24.4 billion) and Australia (US \$ 23.5 billion), which are among the ten economies with the highest spending on tourism and international travelers, without losing sight of economies that since 2015 have a positive trend in the same variables as they are Spain, Sweden, Taiwan (Republic of China), Kuwait, Philippines, Thailand, Argentina, Czech Republic, Israel, Egypt and South Africa (UNWTO, 2016).

To improve decision-making in the tourism sector, as one of the strategic strategies of the Mexican economy, it is necessary to identify the interests of visitors in destinations with high tourism potential, for example, in 2015, Mexico captured 23,226,973 visitors to museums and archaeological zones, of which 18,632,503 were national and 4,594,470 foreigners; likewise, 5,929,223 passengers arrived in 2,180 cruises to the main ports of the country (SECTUR, 2015), data that are relevant to strengthen public policies to promote the national tourist supply.

Mexico can improve the participation of the Tourism GDP through the use of IS focused on the 44 priority tourist destinations and 111 Magic Towns, thereby reducing the gap of economic and social inequality. For the Ministry of Tourism, priority tourist destinations are selected localities that have a large tourist potential to detonate economic and social development and directly impact their communities (SECTUR, 2015), while a magical town is a locality that has symbolic attributes, legends, history, transcendent facts, everyday life, magic that emanates in each of its socio-cultural manifestations, and which today mean a great opportunity for the tourist use (SECTUR, 2016a).

It is important to generate wealth and strengthen productive investment in the sector with a model of sustainability in production factors, based on tourist attractions such as the following:

**Table 1** Classification of tourist attractions in Mexico

Cultural	Nature	Sports	Gastronomic	Sun and beach	Health & Wellness	Meetings	Spas & Waterparks	Certificatio	Other alternatives
<ul style="list-style-type: none"> <li>- World Heritage</li> <li>- Magic towns</li> <li>- Mayan world</li> <li>- Craft houses</li> <li>- Wine tourism destinat</li> <li>- Art</li> <li>- Galeries</li> <li>- Museums</li> <li>- Heritage sites</li> <li>- Theater</li> <li>- Archaeological areas</li> </ul>	<ul style="list-style-type: none"> <li>- Biodiversity</li> <li>- Adventure</li> <li>- Eco parks</li> <li>- Ecotourism</li> <li>- Natural spaces</li> <li>- Garden</li> <li>- Museum</li> <li>- Indian</li> <li>- Parade</li> <li>- Rural villas</li> </ul>	<ul style="list-style-type: none"> <li>- Sportandre-createonal fishing</li> <li>- Golf Courses</li> <li>- Marinas</li> </ul>	<ul style="list-style-type: none"> <li>- Treasures of Mexico</li> <li>- Best Latin American Restaurants</li> <li>- Best restaurants in the world</li> </ul>	<ul style="list-style-type: none"> <li>- Fully planned center,</li> <li>- FONAT UR</li> <li>- Beach destinations</li> <li>- Cruise ships</li> </ul>	<ul style="list-style-type: none"> <li>- Spas</li> <li>- Physiotherapists</li> </ul>	<ul style="list-style-type: none"> <li>- Exhibitin and convention centers</li> </ul>	<ul style="list-style-type: none"> <li>- Spas and Waterparks</li> </ul>	<ul style="list-style-type: none"> <li>- Hotels and restaurants</li> <li>- Blue Flag and SEMAR NAT certified beaches</li> </ul>	<ul style="list-style-type: none"> <li>-LGBTT TI</li> <li>-Romance</li> <li>-Religious</li> </ul>

**Source:** Own elaboration with data from the Tourist Atlas of Mexico, 2016

Under this scheme, it is necessary to design programs for financing and promoting tourism in the three orders of government, which through cooperation and inter-institutional coordination, have as a priority to strengthen the sector's economic growth, increase competitiveness and contribute to the dignification of human life, through a greater distribution of GDP per capita, the reduction of inequality, poverty and insecurity, gender equity and the empowerment of communities for decision-making. Likewise, it is necessary to attract private sector investments that are strategically channeled into the projection of tourism at the international level, support for small and medium-sized enterprises, and the creation of formal jobs.

Achieving greater economic output, which impacts on local, regional and national prosperity requires the use of demographic bonuses, increased productivity and the reduction of structural gaps. It is required for such achievement of strategies for productive linkages, programs and projects aimed at destinations with high tourism potential, workforce training and equity in access to opportunities. According to the Economic Commission for Latin America and the Caribbean (ECLAC, 2016), productivity is defined as the ratio between the quantity of what is produced and the quantity of inputs used in that production. The average annual growth of Mexico's labor productivity from 2000 to 2014 (0.9%) was significantly lower than that of the United States (2.1%), and widened the gap between the two economies; Under these rates, the productivity increase of these countries will be possible in 34 and 78 years respectively.

Tourism policy should not separate productivity and equality from human and constitutional rights, if the population seeks a better quality of life, it must permeate the slogan of increasing distribution, increasing profits with respect to the ownership of collective property in the framework of international law, development of people's skills and abilities, construction of life projects, intergenerational vision regarding the sustainability of the natural environment and the value of culture. Structural change, as a way to achieve economic growth with equality, is associated with two dynamic efficiencies, which combine paths of rapid growth of production and employment over time: the Schumpeterian efficiency, where the presence of sectors with higher rates of productivity growth, with a greater diffusion of knowledge and skills to the whole economy and society, and leading the process of innovation, boosting productivity increases in both its own sector and other sectors; As well as Keynesian or growth efficiency, which refers to a pattern of specialization in sectors benefiting from higher rates of growth of external and domestic demand, with positive effects on production and employment (CEPAL, 2012).

The analysis of macroeconomic variables linked to tourism, in particular monetary, fiscal, science and technology policies, should be analyzed synergistically on a perspective of the evolution of decision variables that encourage long-term investment, diversify supply and tourist demand, and increase the productivity of the sector. Particular attention should be paid to the incorporation of technological advances in the national tourism policy to stimulate demand, through the design, implementation and evaluation of strategies that promote employment and protect nations from macroeconomic imbalances in the face of market volatility.

Economic growth during the Mexican miracle (1940-1970), the result of the import substitution model, decreased before the global dynamics of neoliberalism imposed by industrialized countries. The behavior of macroeconomic variables generates from a point of uncertainty, as a result of oil price volatility, the public debt crisis, the global flow of remittances from migration, deregulation of the financial system, policies of attraction of foreign direct investment (FDI), the privatization of companies and strategic resources, as well as the balance of trade deficit despite the promises of neoliberalism.

A weak policy for the use of renewable energies and financing the energy transition, as well as the fall in oil fuels and the depletion of fossil fuels, cuts in public spending and constant changes in growth projections. Under this scenario, it is urgent that Mexico diminishes its dependence on crude oil exports and remittances from migration, and increases the revenue collection through the integral model of the management of destinations with high tourism potential.

The Tourism Sector 2013-2018, as part of the strategic planning of the Federal Public Administration, proposes to take advantage of potential tourism to generate a greater economic spillover in the country, which deploys four strategies to follow: boosting the order and transformation of the Tourism sector; To foster innovation in supply and increase the competitiveness of the tourism sector; Foster a greater flow of investment and financing in the tourism sector and the effective promotion of tourist destinations; And promote sustainability and that income generated by tourism is a source of social welfare (DOF, 2013).

Destination management requires inter-institutional articulation in the three orders of government, where technological capabilities are optimized in decision-making and in order to better capture economic leverage. Management needs to integrate, facilitate and promote the proper use of the different resources, goods, services, equipment and infrastructure that directly or indirectly affect tourism. The present study takes as reference the five forces proposed by Porter (2009) that shape competition in a sector: rivalry between existing competitors, bargaining power of suppliers, bargaining power of buyers, threats of new applicants and threat of substitute products or services, which allows the articulation of competitiveness strategies to increase the economic output in destinations with high tourism potential.

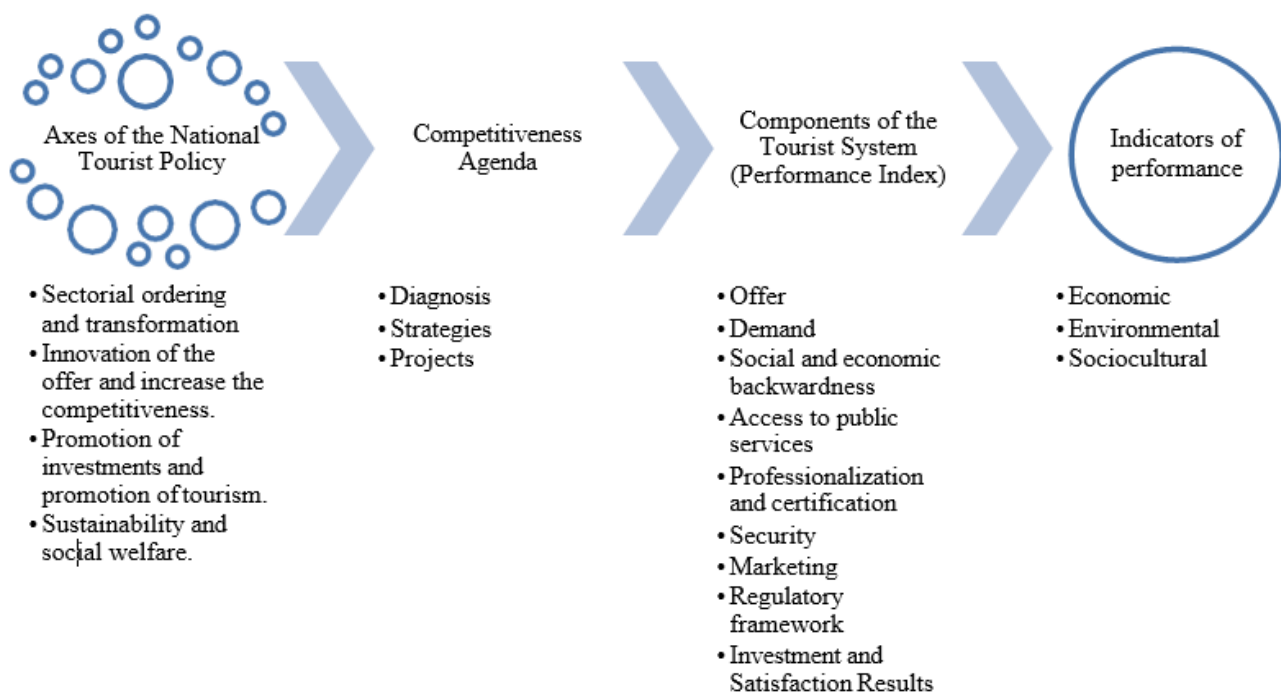
The structure of a particular sector, as manifested in the intensity of the five forces, determines the potential for long-term benefits of that industry because it establishes the way in which the economic value it creates is shared: how much is in the hands of companies, how much customers and suppliers retain, or are limited by substitute products or the threat of new applicants (Porter, 2009).

Based on the above, governments and investors seeking to develop long-term competitiveness and profitability for the sector or at the level of small and medium-sized enterprises should consider strategic management to include a structural analysis of market forces, characteristics of participating economic agents, increased productivity from competitive advantages, technological innovation and the use of IS.

Macroeconomic growth is not enough to be competitive globally, it requires that policy makers act strategically and have timely information. In this sense, it is necessary to consider patterns of behavior that affect the growth and sustainability of the tourism sector, such as the optimum use of factors of production above the abundance of natural resources and cheap labor; market segmentation, consumer analysis and knowledge of competition; The use of IS for the recognition of market trends; the recognition of the national tourist policy by public, private and social sectors; and the management of local, regional and national agreements that encourage the consolidation of destinations with high tourism potential.

To support this, Fairbanks (2002) points out that decisions must be of advantage, coverage or reach and technology, the first two define the strategic position of the organization to be built in the long term, technology accompanies the previously defined strategic materialization. A destination management model with high tourism potential (Figure 1 ), should be committed to the use, exploitation, respect, conservation and protection of productive factors, community organization, environmental, cultural and socioeconomic environment, through SI and technological development, that increase the local, state and national economic spill, optimize public and private investment, and facilitate the interaction of suppliers and demanders of tourist goods and services, and other participants in the sector, in permanent scenarios of macroeconomic imbalances.

**Figure 1** Model of strategic management of tourist destinations



**Source:** Own elaboration according to results of the present investigation

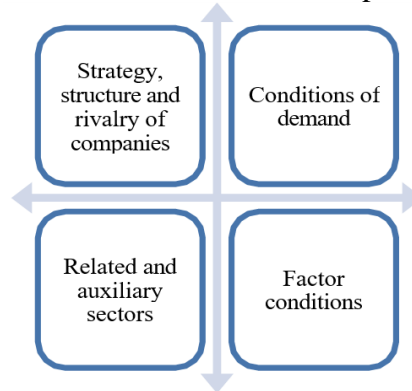
### **Competitive agendas for tourism destinations (CATD)**

The economic spill can be increased through the use of IS, knowledge of the characteristics of the destination, the participation of different economic agents and innovative strategies to achieve competitiveness, which is considered by governments and productive sectors one of their greatest concerns. Despite the fact that there is clarity regarding the competitiveness of economic organizations, there is no hegemonic paradigm with respect to national competitiveness, so the approach of their analysis lies in macroeconomic aspects that include monetary policy (interest rates, type of exchange rate and inflation), fiscal policy (public debt, revenue and expenditure budget, collection capacity, etc.), labor policy (GDP per capita, minimum wage, professionalization and training of the labor force, etc.) and the natural resources of a country.

In the same way, competitiveness is studied from the formulation, implementation and evaluation of public policies, in particular with regard to the construction of diagnostics, strategies and projects that protect and promote the strategic sectors of the economies. No country is competitive in all of the above aspects, so the closest definition of national competitiveness is productivity, however, it is necessary not to rely on foreign investment in strategic sectors and take care that the capture of economic pumping is directed towards continuous innovation, market segmentation, diversification of supply and the use of technology and knowledge, so as not to jeopardize the growth of sectors and the economy itself. According to Porter (1991), the competitiveness of a nation depends on the ability of its industry to innovate and improve. Companies gain advantage over the best competitors in the world because of pressures and challenges. They benefit from strong national rivals, dynamic domestic suppliers and demanding national customers. In this sense, the term addresses the results of growth and economic development from the comparative and competitive advantages that can be measured and analyzed under a scheme of indexes and variables.

Macroeconomic imbalances and market uncertainty require the planning, implementation, evaluation and innovation of tourism products and destinations, able to be placed in the preferences of the consumer and international competitiveness. The present research recovers the determinants of national competitive advantage (Figure 1.1) of Porter (1991), which creates the environment for organizations to be globally competitive at the outset. In this sense, the conditions of factors such as the situation that deprives Mexico of productive factors (resources, specialization of the labor force, capital raising), community organization and infrastructure for the tourism sector are conceived; to the conditions of demand due to the characteristics of the market for tourism goods and services at local, regional, national and international level; the similar and auxiliary sectors as the degree of participation of external economic agents in the dynamics of the sector and the national productivity; the strategy, structure and rivalry of companies, such as the State's policies to increase economic output and the well-being of the population through incentives for the creation, management and organization of companies dedicated to promoting tourist destinations and increasing National competitiveness.

**Figure 1.1** Determinants of national competitive advantage



**Source:** Own elaboration, based on Porter (1991)

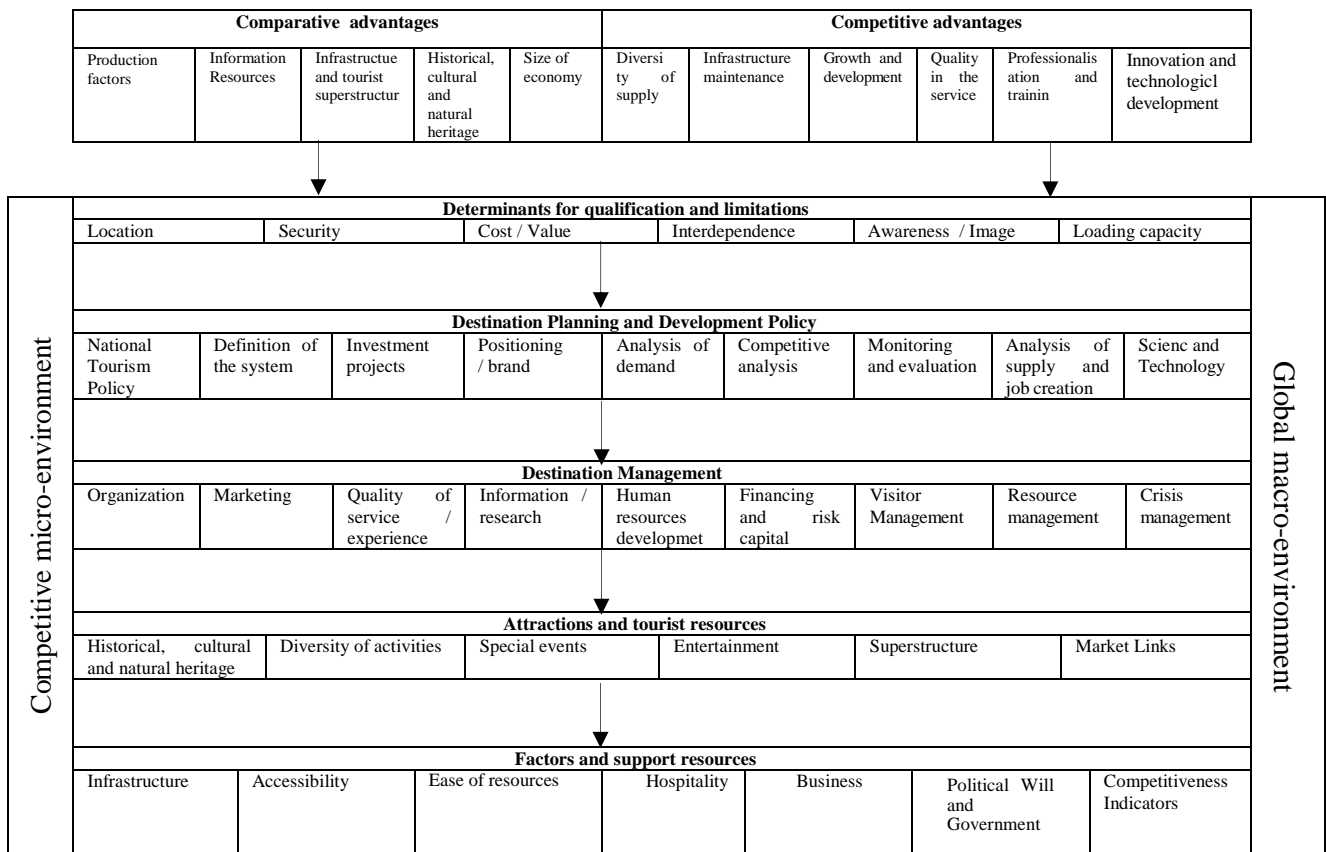
With respect to competitiveness in the tourism sector, Crouch and Ritchie (2003) provide a frame of reference to increase it and impact on the quality of life of the population, they propose a model whose key are the resources, since they function as factors of attraction. In the same, it is the natural resources that initially attract the tourists to the destination, without leaving aside the cultural, social and political aspects for the creation of value that requires of the segmentation of the market and the diversification according to the demand. The concept of regional, country, or state, city or local tourist destinations (Valls, 2004) is a specific geographic space, with its own characteristics of climate, roots, infrastructures and services, and with some administrative capacity to Develop common planning instruments, which acquires centrality by attracting tourists through products perfectly structured and adapted to the satisfactions sought, thanks to the value and ordering of the available attractions; Endowed with a mark, and which is marketed taking into account its integral character.



In this sense, a tourist destination allows to measure the impact it has on the economic spill at the local, regional, national and international level, so that each of the tourism management units is configured according to its historical-cultural characteristics, Spatial, anthropological, sociological, political, or any other integrative motive; The centrality requires that tourist destinations are a target of visits, and that from the attractions and resources available and put into value, the destination must present a structured offer to the service of certain satisfactions of customers, with a brand that is presented as an attractive image that symbolizes the entire offer, facilitates its identification in the markets and generates an interaction of affections and feelings, all from a joint marketing function.

The concept, in turn, contributes to the strategic management of destinations and emphasizes the integration of a global competitiveness model, which includes sustainability, consumer satisfaction, and full use of productive factors that impact growth and economic development. Based on the competitiveness and sustainability model for tourism destinations by Ritchie and Crouch (2003), an adaptation is proposed that aims to increase tourism's economic potential and the quality of life of the population, and where it is considered that the tourism system is constantly conditioned by influences and pressures that arise outside the system itself. The economic, technological, environmental, political, legal, sociocultural and demographic factors are identified as macroenvironment. At the same time the microenvironment is defined with the main elements that define the immediate competition, in which a destiny must adapt to be able to compete: residents, employees, media, financial institutions, tourists, tourist companies, etc. (See Figure 1.2).

**Figure 1.2** Competitiveness model for strategic management of tourist destinations



**Source:** Own elaboration based on the competitiveness and sustainability model for tourist destinations (Ritchie y Crouch, 2003)

An important factor for the strategic management of destinations with high tourism potential is to measure the impact on GDP and control of urban expansion with the objective of generating diagnoses, strategies and projects that use variables to make strategic decisions in tourism sector. Since cities are strategic centers for production, distribution and consumption of goods and services, participate in innovation activities, attract investment, generate employment, bring together trained and professional staff in the sector, concentrate physical infrastructure and connectivity, have policies More defined in public security, incursion in gender equity and possess a wide range of cultural and tourist offer.

A strategic diagnosis does not seek to identify but to construct possible realities based on diverse criteria in order to compare these realities with the desirable scenario imagined in the mission (Arellano, 2012). That is, a diagnosis helps define strategies and projects that organizations want to build, optimize resources according to the priority of the problems that are intended to solve and establish mechanisms of interaction between the economic, political and social actors involved in an agenda of competitiveness.

### **Performance evaluation of tourist destinations**

For better decision-making, it is necessary to have statistical information on the evolution of factors of production, which serves for the calculation of productivity, the identification of economic activities that capture investment flows and their contribution in the economic, based on the use of IS and technological innovation.

Access to the internet and the use of digital technologies, boosts economic growth and improves the provision of tourism services. Currently, more than 40% of the world's population has Internet access, while 7 out of 10 households in the poorest 20% have a cell phone, which in turn facilitates the participation of women in the labor market and the inclusion of people with disabilities and the way people use their leisure time and the exchange of information between economic agents (World Bank, 2016a). Notwithstanding the above, the effect of technology on productivity has not increased and inequality increases due to the development of more specialized skills, so only countries that adapt to the digital economy can participate in the increase of dividends. In order for technology to become the basis of economic development, it is necessary to strengthen a prosperous business climate with a qualified workforce, the political will of the government, an ideal legal framework for global economic dynamics, and the operation of companies with inclusion, efficiency and technological innovation.

The Global Competitiveness Report of the World Economic Forum (Table 1.1) assesses the productivity and prosperity of 140 countries since 1979 and is a very comprehensive tool to identify the evolution of competitiveness at the national and global levels. The report shows a Global Competitiveness Index (GCI), which is divided into 12 pillars grouped into the basic requirements sub-index (BRS), which include institutions (P1), infrastructure (P2), macroeconomic environment (P3), health and primary education (P4); The efficiency-enhancing sub-index (EES) that includes higher education and training (P5); Market of goods (P6), labor market (P7), sophistication of the financial market (P8), technological preparation (P9), market size (P10); And the innovation and sophistication subsystem (ISS), which includes business sophistication (P11) and innovation (P12).

This research recovers a comparison of 2007-2008 to 2016-2017 with 131 to 148 economies for different years, where Mexico has not advanced in the ICG in ten years, moving from place 52 to 51 despite the structural reforms driven by At least since the last decade. It is transcendent the fall in the BRS where it loses 5 positions when passing from place 56 to 71, mainly by the fall of P1, P3 and P4, and the almost null growth of P2. On the other hand, there is a 5-step advance in SPE, although factors such as P5, P6, P7, P9 and P10 stagnation remain low, while the evolution of ISS in 10 positions is a result of the use of its factors.

With these data, it is suggested that the decision makers consider at first moment, to benefit from the competitiveness in elements such as the sophistication of the financial market, the sophistication of the businesses and the impulse of the innovation.

**Table 1.1** Global Competitiveness Report 2000-2017

Year	Compared economies	GCI	BRS	P1	P2	P3	P4	SPE	P5	P6	P7	P8	P9	P10	ISS	P11	P12
2007-08	131	52	56	85	61	35	55	50	72	61	92	67	60	13	60	54	71
2008-09	134	60	60	97	68	48	65	55	74	73	110	66	71	11	70	58	90
2009-10	133	60	59	98	69	28	65	55	74	90	115	73	71	11	67	62	78
2010-11	139	66	66	106	75	28	70	61	79	96	120	96	71	12	69	67	78
2011-12	142	58	67	103	66	39	69	53	72	84	114	83	63	12	55	56	63
2012-13	144	53	63	92	68	40	68	53	77	79	102	61	72	12	49	44	56
2013-14	148	55	63	96	64	49	73	55	85	83	113	59	74	11	55	55	61
2014-15	144	61	69	102	65	53	71	60	87	86	121	63	79	10	59	58	61
2015-16	140	57	73	109	59	56	71	53	86	82	114	46	73	11	52	50	59
2016-17	138	51	71	116	57	51	74	45	82	70	105	35	73	11	50	45	55

**Source:** Own elaboration based on The Global Competitiveness Report (WEF, 2007 - 2016)

Based on the above, the proposal to improve the competitiveness of destinations with high tourism potential, based on the use of IS and technological development, as a strategic part of the economic sector of reference, is of great importance for a country that remains in recession for at least two decades with weak GDP growth, the loss of purchasing power implied by the depreciation of the exchange rate, the behavior of inflation and the volatility of interest rates, coupled with the political and social crisis in the territory and in particular the change of government that will take place in the United States after 2017. Of relevance for the Mexican economy are the fall in raw material prices and the crisis of the primary export model, the composition of the balance of payments, the soundness of public finances and the growth of public debt.

The productivity of the tourism sector is also exalted from the strengthening of institutions, so it is suggested that the implementation of national tourism policy be accompanied by reliable and responsible processes of allocation, use and accountability of public resources, and adheres to an efficient legal framework in the fight against corruption, influence peddling, dispute settlement and protection of the economic interests of bidders and claimants. Likewise, competitiveness can increase from a government regulation without excessive procedures, with policies on the professionalization of security forces that protect investors and tourists from crime and organized crime.

Even though each local, state or federal administration is labeled with funds to improve infrastructure, it has not been possible to articulate alternatives that provide the same to destinations with high tourism potential, which is why it is a priority to formulate national and national connectivity projects. International cooperation under schemes for the conservation and protection of the natural, historical and cultural heritage, with special attention to the construction and maintenance of roads, investment in the construction of tourist train routes, improvement of ports and airports, access to electricity, telecommunications and hospitals, as well as quality public accommodation and services.

Based on the economic importance of tourism, the government must be attentive to improve competitiveness through professionalization and training for the best decision-making and operability of the sector. The creation of professions must be strategic in their plans and programs of study according to the tourist destinations to be developed, for which it is vital the permanent collaboration between companies and educational institutions, the link between the acquisition of knowledge with centers of research and development, enhance technological innovation and the use of IS, and contribute to the training of service providers working in the sector.

Raising productivity in destinations with high tourist potential requires in turn to sophisticate the financial market and make policies inclusive of the general population for access and responsible use of financial products and services granted by the first floor and development banks. This alternative can increase formal employment, savings, investment, financing to organizations and optimize the value chain through access to financial infrastructure such as tellers, branches, correspondents or mobile banking.

For the Mexican tourism sector to place itself in the preferences of world competitiveness, it is a priority that programs and projects of technological development be generated to enhance their competitive advantages. The increase in factor productivity depends to a large extent on the sector's access to state-of-the-art technology, in close collaboration with strong public institutions and a private initiative with the capacity to innovate through intelligent digital technologies, controlled in the value chain of tourist goods and services.

A comparative analysis of the World Bank's Doing Business report for the years 2015 to 2017 sets forth quantitative indicators on regulations for doing business and property protection, thereby identifying the economic outcomes of structural reforms (Table 1.2)

It is notorious that in Mexico has decreased the world rank on the facility to open businesses, from the 47th place in 2017 and down 8 positions since 2015, which in turn is a result of the fall in 26 positions in the opening of companies reaching the place 93 for the same years, in addition to a weakness in the payment of taxes that collapses 9 positions and is placed in the place 114 and with that affects the incorporation of organizations to the formal market, as well as a slight collapse in the resolution of the insolvency of 3 points to place 30 of the 190 countries compared; by identifying these areas of opportunity there is scope for coordinating efforts among the three orders of government to achieve better results.

Notwithstanding the above, there are positive results in the years and the number of countries of comparison, in elements such as the procedure for construction permit that increases 25 positions and is placed in place 83, obtaining electricity that advances 18 places to be located in the 98, property register that advances from 110 to 101 to grant greater certainty to the investors, and the fulfillment of contracts that passes from place 57 to 40. One of the strongest achievements in the Mexican economy is the obtaining of credit, where Mexico reached 7 positions and is placed in 2017 among the first five countries worldwide, and where financial users are recommended to strategically manage their revenues to conduct business in the tourism sector.

**Table 1.2** Ease to do business in Mexico, 2015 – 2017

	2015	2016	2017
Compared countries	<b>189</b>	<b>189</b>	<b>190</b>
GDP per capita	<b>US\$9,940.00</b>	<b>US\$9,980.00</b>	<b>US\$9,710.00</b>
Ease of doing business	<b>39</b>	<b>38</b>	<b>47</b>
Total Border Distance Score, DTF (0 - 100)	<b>71.53</b>	<b>73.72</b>	<b>72.29</b>
Business start-up	<b>67</b>	<b>65</b>	<b>93</b>
Starting a Business Score (0 - 100)	88.85	88.94	85.74
Procedures (number)	6	6	7.8
Time (days)	6.3	6.3	8.4
Cost (% of GDP per capita)	18.6	17.9	17.8
Minimum capital (% of GDP per capita)	0	0	0
Procedure for construction permit	<b>108</b>	<b>67</b>	<b>83</b>
Building permit score (0 - 100)	68.43	71.76	69.79
Procedures (number)	11.3	10.5	13
Time (days)	87.6	86.4	86.4
Cost (% of store value)	10.3	10.2	9.8
Obtaining electricity	<b>116</b>	<b>72</b>	<b>98</b>
Score for electricity (0 - 100)	68.47	73.27	68.32
Procedures (number)	6.8	6.8	6.8
Time (days)	78-9	78.9	100.4
Cost (% of GDP per capita)	346.1	332.9	336.7
Property registration	<b>110</b>	<b>106</b>	<b>101</b>

Score to register property (0 - 100)	62.45	58.74	61.05
Procedures (number)	6.8	6.8	7.7
Time (days)	63.7	63.7	42.1
Cost (% of property value)	5.1	5.1	5.2
Obtaining credit	<b>12</b>	<b>5</b>	<b>5</b>
Score for credit (0 - 100)	80	90	90
Index of strength of legal rights (0 - 12)	8	10	10
Index of depth of credit information (0 - 8)	8	8	8
Coverage of credit bureau (% of adults)	100	100	100
Coverage of credit registry (% of adults)	0	0	0
Protection of Minority Investors	<b>62</b>	<b>57</b>	<b>53</b>
Score to protect minority shareholders (0 - 100)	57.5	58.33	60
Tax payment	<b>105</b>	<b>92</b>	<b>114</b>
Score for payment of taxes (0 - 100)	71.17	73.67	65.81
Payments (number per year)	6	6	6
Time (hours per year)	334	286	286
Total tax rate (% of profit)	51.8	51.7	52
Contract fulfillment	<b>57</b>	<b>41</b>	<b>40</b>
Score to enforce contracts (0 - 100)	64.61	67.39	67.01
Time (days)	389	389	340.7
Cost (% of claim)	30.9	30.9	33
<Previous Next>	<b>27</b>	<b>28</b>	<b>30</b>
Punctuation to resolve insolvency (0-100)	72.59	73.03	73.11
Time (Years)	1.8	1.8	1.8
Cost (% of equity)	18	18	18
Recovery rate (cents per dollar)	68.1	68.9	69.1
Index of strength of the insolvency framework (1 - 16)	11.5	11.5	11.5

**Source:** Own elaboration based on Doing Business (Banco Mundial, 2015 a 2017)

Based on previous results for Mexico, it is necessary to accurately evaluate the results of the national tourism policy. The performance evaluation of organizations is now a priority given the constant growth of society's needs and the allocation, use and accountability of available public resources. Beyond the legitimacy discourse of public management, the responsibility of administrations is measured by the achievement of visible objectives and respect for the legal framework on the subject.

From the instrumental point of view, performance evaluation can be defined as a set of technical procedures used by public administration control institutions to obtain, process and design relevant information by reviewing and evaluating activities, projects, programs, government policies and bodies, in aspects of efficiency, effectiveness, good management practices, equity, achievement of goals, capacity and performance management, among other criteria oriented to the results of public management (Barros, 2002).

However, there is no clear definition of tourism performance, so according to the objectives to be measured by organizations, the present study focuses on the achievement of competitiveness by increasing the productivity of tourist destinations, their efficiency and quality of service delivery, satisfaction of investors and demanders of goods and services in the sector, the impact on economic output and the improvement of the quality of life of the population, including strategies for productive linkages, as well as their programs, projects and the achievement of results.

According to the above, it is complex to link the design of the national tourism policy with the Performance Evaluation System (PES), which the Public Service Secretariat defines as a tool to objectively measure and evaluate the performance of budgetary programs of the Federal Government (PSS, 2015), based on the Federal Law on Budget and Fiscal Responsibility and its regulations, as a tool of the Budget based on Results (BbR). In the same sense, the Ministry of Finance and Public Credit defines PES as the set of methodological elements that allow an objective evaluation of the performance of the programs under the principles of verification of the degree of compliance with the goals and objectives, based on strategic and management indicators that allow to know the social impact of the programs and projects, according to the provisions of articles 2, fraction LI, 27, second paragraph, and 111 of the Law of Budget. (SHCP, 2007).

Performance evaluation is assisted by strategic management and the design of indicators to make clear diagnoses about the objectives pursued, actions to be implemented, monitoring and evaluation. As an instrument of results evaluation, it allows organizations to establish a bridge between citizenship and accountability. A PES is an organizational learning tool for the design and evaluation of programs (sometimes organizations), which makes explicit theories, assumptions and axioms of action, in order to define a possible causal chain connecting the definition of the public policy problem, policy instruments, and organizational strategies with products, outcomes and, finally, the impacts of programs, policies, and other government actions (Arellano, 2012).

The performance evaluation is an alternative for the development of the competitiveness of the tourism sector and the increase of the economic spill. In order to consolidate the National Tourism Policy, the federal government coordinates with state and municipal governments through the Coordination Agreements on Resource Reassignment (CCRR), where the components of the system (Figure 5) have the potential to improve The Tourism Performance Index (TPI) that is expressed in the improvement of the quality of life of society, to develop tourist destinations with high economic potential, to diversify and innovate the supply and demand of the sector, to sensitize economic agents in the importance of Activity and influence their professionalization and training for the operation of services, boost the creation of formal jobs, attract tourists with high consumption capacity, strengthen responsible private investment with history, culture and the environment, promote social participation In decision-making, to reduce poverty rates and to include technological innovation and IS in the destination management process.

The present investigation proposes the measurement of the TPI according to the components of the system and a proposal of adequacy, according to the following:  
 $IDT = f(S_1O, S_2D, S_3Seg, S_4M, S_5ASP, S_6PC, S_7IS, S_8G, S_9CP)$

Donde:

- $S_1O$  = Supply Sub-index
- $S_2D$  = Demand Sub-index
- $S_3Seg$  = Security Sub-index
- $S_4M$  = Marketing Sub-index
- $S_5ASP$  = Access to Public Services Sub-index
- $S_6PC$  = Professionalization and Certification Sub-index
- $S_7IS$  = Investment and Satisfaction Sub-index
- $S_8G$  = Governance Sub-index
- $S_9CP$  = Characterization of the population Sub-index

Based on the above, decision-makers have access to budget allocation information according to the results of low or high performance of the national tourism policy and its correlation with the degree of stagnation, development or consolidation of the same, as an impact Of the CR in the increase of the economic spill of each one of the destinations with high tourist potential, and the improvement of the quality of life of the population. It is important to mention that the implementation of the sector policy will be reflected in the medium and long term, but it is through its monitoring that adjustments can be made to obtain better results.

**Table 1.3** Proposal to update components of the Tourism Performance Index

Offer	Demand	Security	Marketing	Access to public services	Professionalization and certification	Investment and satisfaction	Governance	Characterization of the population
Characteristics of the destination	Composition of visitors	Public Safety Programs	Promotional Policies	Infrastructure	Professionalisation and training	Investment Attraction	Marco regulatorio	Poverty and marginalization
Availability and access to transport	Composition of tourists		Use of Technologies and SI	equipment	Investigation and development		Accountability	Social and economic backwardness
Lodging and gastronomic routes		Composition of travelers	Travel agency	Coverage		Tourist Certification	Combat corruption	
Tourist destination vocation	Strategies against crime and organized crime		Brand Use	Alternatives	Satisfaction and quality of service		Respect for human rights	
						Sustainability		

**Source:** Own elaboration based on the results of the research and components of the SECTUR system

The Supply Sub-index is a component that considers the characteristics of the destination in its historical, cultural and natural dimensions, as a condition for development, as well as the availability and access to transportation, so that tourists, visitors and travelers can travel by bus, private vehicles, public transport, cable cars, ports, airports, trams and other means, as well as policies for the recovery of public spaces with respect to pedestrians and cyclists, and with the existence of ramps, sidewalks and signs.

As accommodation agents and gastronomic routes, the tourist industry is enriched by the promotion of the standards of Mexican and international hotel and food standards, distinctions and certifications, origin, and ventures into associations and chambers of the restaurant and food industry. In the same section is the tourist vocation, which values the attractive tangible and intangible attractions that identify the applicants, without losing the harmony of the place and the tranquility of its inhabitants.

The Demand Sub-index recovers the classification of the ILO and adheres to INEGI statistics, in that sense, it is considered the internal tourism, receptive and emitting in its composition of visitors, tourists and travelers. Tourism spending not only directly benefits tourist industries but also has a multiplier effect in other sectors and the exchange of experiences and knowledge to strengthen social cohesion. Macroeconomic imbalances at the global level and the prevailing political and social conditions in the country increase uncertainty about demand, so it is necessary to measure it on a constant basis and build proposals for its rapid recovery. It is necessary to include variables such as seasonality, linkage with other sectors and the availability of resources to measure demand.

The Security Sub-index helps to identify public programs to guarantee the physical integrity of providers and claimants of tourism products and services. Strategies against crime and organized crime give greater certainty to investors about the fate of capital, promote crime prevention and professionalize police forces.

Public security is a function of the state whose main objective is the protection of individuals and their property, political institutions from threats of internal and transnational violence, intimidation, corruption or predatory acts of government (Bailey, 2009). To measure this component, a distinction should be made between government programs to reduce insecurity and studies assessing society's perception of it, particularly because of its lack of trust in the police, the criminal justice system or the government, the fear of being victims that generates psychological traumas in the medium to long term, vulnerability to physical threats, cybernetics or social disorder, criminal behavior and image of public space, as well as damages and costs as a result of crime.

The National Survey of Victimization and Perception on Public Security (INEGI, 2016a) estimates that by 2015 the total cost of insecurity and crime in households represented an amount of 236.8 billion pesos, or 1.25% of GDP, which is equivalent to \$5,905 per person affected by insecurity and crime. The same survey estimates for 2016 at the national level that 59.1% of the population aged 18 and over considers Insecurity and delinquency as the most important problem that afflicts today in their state, followed by unemployment with 40.8% and poverty with 31.9 percent; In the same sense 72.4% of the population aged 18 and over considers that living in their federal state is unsafe as a result of crime, statistically unchanged since 2013. In the National Survey of Victimization of Companies (INEGI, 2016b) it is estimated that 35.5% of the country's economic units were victims of some crime during 2015, while in 2013 it was 33.6%, and in 2011, 37.4%.

The Marketing Sub-index proposal consists of policies to promote organizations and their growth strategies, which include the creation of tourism startups, benchmarking, targeting, advertising, sales and pricing policy. The use of technologies and SI, allow optimizing the value chain through innovation applied to marketing, in particular through the use of social networks, mobile devices, interface design, process optimization, know-how, digital management, access to professional marketing services, web pages and Business Intelligence.

This factor considers travel agencies as part of the tourist attraction to the country, in addition to the positioning and use of the brand. According to the World Economic Forum's 2016 Report on Information Technology (WEF, 2016a), Mexico ranks 76th out of 139 countries according to The Networked Readiness Index, where 92 positions for skills, 84 for individual use, 52 for government use, 64 for economic impact and 71 for social impact. The results show advances in fixed broadband subscriptions where Mexico ranks 66th globally, mobile network coverage with 37th place, and business use with 66th place as a result of the availability of the latest technologies that places the country at position 58, and the number of days and procedures to start a business at positions 40 and 54 respectively.

With the intention of increasing the competitiveness and the influx of tourists, visitors and travelers, as well as their expenses and days of stay, the Public Service Access Index serves to promote infrastructure projects directly related to tourism, conservation, rehabilitation and maintenance of buildings with historical or cultural value, and improvement of urban image. In the same sense, the equipment generates greater satisfaction in the sector's applicants, among which can be found the tourist information modules, quays, jetties, walkways, signage, lookout points, convention and exhibition centers, financial services, health services, parking, among others.

In this component, it is important to measure the coverage and tourism alternatives that increase the economic spill at the local, state or national level. The Professionalization and Certification Sub-index, on the other hand, makes it possible to assess the competitiveness of the sector through the professionalization and training of human resources, research and development with an emphasis on innovation, the linking of educational institutions and the needs of the productive sector and of society, the transfer of technology and the generation of knowledge.



The component must measure tourism certification in order to achieve significant progress in the satisfaction of the applicants on the quality of service delivery. The Investment and Satisfaction Sub-index aims to identify the impact of Foreign Direct Investment (FDI) on the productivity of the sector, employment generation, growth and economic development, increased savings and foreign exchange, and the transfer of technology. The item also measures the satisfaction and quality in the service, to contribute with information in decision making for entrepreneurs and government, as well as in the processes of improvement and innovation.

The strengthening of the sector is possible through the participation of economic agents with respect to the regulatory framework, allocation, use and accountability of available resources, combating corruption, respect for human rights and sustainability. With these factors the Governance Sub-index is built, which serves as a parameter to measure the success of the strategic management of destinations with high tourist potential according to the present research.

In Mexico, the demographic bonus is not used to boost GDP growth. The Population Characterization Subscript favors the formulation, implementation and evaluation of policies to combat poverty and marginalization. In the same sense, it measures the social and economic backwardness in urban and rural areas, and the degree of participation of society in the construction of development. The tourism potential of towns and cities will have an impact on their growth and will aggravate their problems, so that they must be implemented prior to the demographic explosion, strategies to strengthen gender equity and the community and family fabric to mitigate violence, migration, discrimination and social exclusion.

### **Tourism indicators**

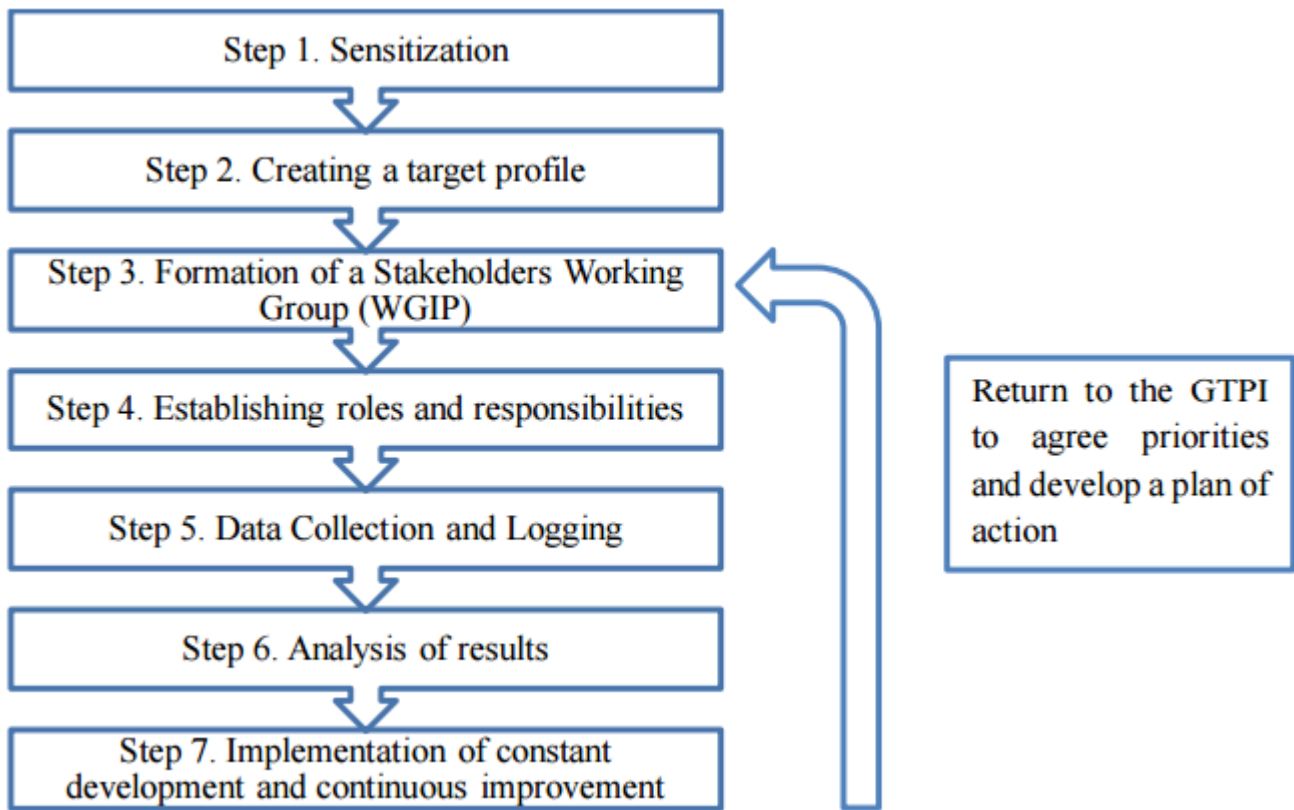
The national tourism policy requires that the exercise of public resources be based on legality, and that through indicators, which are understood as an approximation, an isolated data that, connected with some argument, may be showing advances, setbacks (Arellano, 2012), impartiality, rationality, austerity, efficiency, effectiveness and transparency are achieved. An indicator is the result of the interaction between two or more variables that shows whether the actions or strategies have the expected results. Through the results, decision-makers note progress in development policies, the well-being of the population, the effectiveness of public management, transparency, accountability and the exercise of public spending.

In order for the tourism sector to achieve optimal results in terms of economic output and a better quality of life, it is important that the goals of the Tourism Sector Program, and in accordance with the corresponding legal framework, correspond to the objectives, strategies, lines of action and indicators, and that involve the economic agents in the local, state or national scope for its realization.

In the 2015 "Matrix of Indicators of Results" of the Secretariat of Tourism, calculation methods are included to determine if the goals correspond to the problems and objectives that are intended to solve, in addition to their correspondence with the potential destinations and the population characteristics. Within the framework of the RCs, it is proposed to recover the Tool of the European System of Tourist Indicators for Sustainable Destinations as a tool to assess the strategic management of tourist destinations and the inclusion of economic, environmental and socio-cultural indicators to measure performance.

The tool is integrated with the idea of destination management, the application of the system (Figure 1.3), basic and optional indicators, database retrieval and supporting information.

**Figure 1.3** Seven steps to implement the indicator system in a tourist destination



**Source:** Tool of the European System of Tourist Indicators for Sustainable Destinations (European Union, 2013)

The Integral Destination Management Model of the Tourism Secretariat contains similar criteria to the European tool (Table 1.4), which can be adjusted according to the needs of the tourist destinations and the model components. (Example shown in Table 1.5 ).

**Table 1.4** Criteria for the Indicators of the Comprehensive Model of Destination Management.

<b>Destination Management</b>	<b>Economic value</b>	<b>Environmental impact</b>	<b>Social and cultural impact</b>
<ul style="list-style-type: none"> <li>•Public policy on sustainable tourism</li> <li>•Sustainable tourism management in tourism enterprises</li> <li>•Customer satisfaction</li> <li>•Information and Communication</li> </ul>	<ul style="list-style-type: none"> <li>•Tourist flow at the destination</li> <li>•Results of tourism companies</li> <li>•Quantity and quality of employment</li> <li>•Security and health</li> <li>•Supply chain of the tourist sector</li> <li>•Local prosperity</li> <li>•Economic viability</li> </ul>	<ul style="list-style-type: none"> <li>•Reducing the impact of transport</li> <li>•Climate change</li> <li>•Management of solid waste</li> <li>•Treatment of waste water</li> <li>•Water Management</li> <li>•Energy consumption</li> <li>•Protection of landscape and biodiversity</li> <li>•Light and noise management</li> <li>•Quality of bathing water</li> </ul>	<ul style="list-style-type: none"> <li>•Community / social impact</li> <li>•Gender equality</li> <li>•Equality / Accessibility</li> <li>•Protection and enhancement of cultural heritage and identity and local assets</li> <li>•Cultural offer</li> <li>•Community Well-Being</li> <li>•Contribution to local development</li> </ul>

**Source:** Tool of the European System of Tourist Indicators for Sustainable Destinations (European Union, 2013)

**Table 1.5** Matrix of Indicators for Results

Criterion	Criterion	Objective	Definition	Calculation method
<b>Economic Value</b>	Investment Index Direct in sectors With activity Public and private tourism (RTD).	Contribute to facilitate financing and public - private investment in projects with tourism potential by encouraging investment for the development of the Sector.	It measures the increase in investment channeled into tourism activities using the Gross Formation of Fixed Capital (FBKF) reported by INEGI, using the Mexican Tourism Satellite Account base 2008. The indicator is composed of the sum of funds invested by the federal, state and municipal governments as well as private, national and foreign investments. The indicator compares the growth of the annual investment in tourism for the sector of the year that is measured with respect to the base year and expressed in percentage. The desirable value is positive, in the investment increases over time.	Gross fixed capital formation in year t / Gross fixed capital formation in base year) * 100
<b>Economic Value</b>	Rate of percentage variation of the investment for the development of the tourist destinations of FONATUR.	Tourist destinations have high levels of investment for the development of the Tourism Sector	It measures the percentage variation of the investment in FONATUR's destinations.	$((\text{Total investment Exercised For the development of FONATUR tourist destinations in year T}) / (\text{Total investment for development Of tourist destinations Of FONATUR in the year t-1}) - 1) \times 100$
<b>Economic Value</b>	Real estate marketed satisfactorily	Percentage of respondents who qualified as very good or good in the Fund's attention to the sale of land, compared to Surveyed	Measures the degree of satisfaction with the seller's land sales service	$(\text{Number of buyers who qualified as good or good the service they received from the Fund in the purchase of land}) / (\text{Total number of buyers surveyed}) * 100$

**Source:** Matrix of Indicators for Results 2015, SECTUR

## Conclusion

The uncertainty of global economy represents an opportunity to replant the use of the strategic resources of a nation. The present research shows that the use of technological innovation and the IS, contribute to the increase of the economic spill through the optimization of public and private resources. It is necessary that the National Tourism Policy is the help of the agendas of competitiveness and performance indicators, to achieve the maximization of the use of productive factors and interaction between economic agents.

In this sense, they suggest that the objectives, strategies and lines of action are articulated in the three orders of government, generating programs and projects that take advantage of the productive capacity of the sector, the demographic bonus and reduce structural gaps.

Likewise, it is proposed that the construction of competitiveness agendas be an obligation of States and Municipalities to discover destinations and consolidate the attraction of investment and tourism through the increase of the productivity of places and routes with high tourist potential. The promotion of Mexican destinations must de facto take on the nationalities with the highest expenditure on tourism and strengthen in particular the productive links, the financial market, the ease of opening new businesses, property protection and the promotion of innovation.

The success of tourism policy has a heavy burden on the Coordination Agreements on Resource Reassignment (CCRR), so it is proposed to adapt the components of the tourism system, so that through strategic management, evaluation of the performance and measurement of the indicators, it is possible to strengthen the public expenditure in tourist destinations that positively affect the GDP, the sustainability and the improvement on the population's quality of life.

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## How to measure competitiveness in magic towns?

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## **Introduction**

There are several efforts made by different agencies and institutions to measure the competitiveness of a country, whether at the international or local level. Such is the case of the tourism competitiveness agendas promoted by the federal SECTUR in Mexico, the Tourism Competitiveness Index of the Mexican States developed by the Tecnológico de Monterrey, or the Evaluation of the performance of tourist destinations within the framework of the agreements of Coordination in the field of reallocation of resources proposed by the Universidad Anáhuac and the Institute of Tourism Competitiveness of SECTUR.

However, these initiatives have been isolated, that is, each organization has measured the competitiveness under particular guidelines without reaching an agreement on the indicators that help to balance competitiveness in such a way that not only serves internally but also together compare with other countries in tourism. The present work shows an effort to analyze and adapt the aforementioned models to the particularities of three destinations named as part of the Magic Towns Program (PPM). The result obtained is an exhaustive and coherent approach to the use of different competitiveness models to make homogeneous measurements in destinations with different characteristics.

## **Metodology**

There are several efforts made by different agencies and institutions to measure the competitiveness of a country, whether at the international or local level. Such is the case of the tourism competitiveness agendas promoted by the federal SECTUR in Mexico, the Tourism Competitiveness Index of the Mexican States developed by the Technological of Monterrey, or the Evaluation of the performance of tourist destinations within the framework of the agreements of Coordination in The field of reallocation of resources proposed by the Anahuac University and the Institute of Tourism Competitiveness of SECTUR.

However, these initiatives have been isolated, that is, each organization has measured the competitiveness under particular guidelines without reaching an agreement on the indicators that help to balance competitiveness in such a way that not only serves internally but also together compare with other countries in tourism.

The present work shows an effort to analyze and adapt the aforementioned models to the particularities of three destinations named as part of the Magic Towns Program (PPM). The result obtained is an exhaustive and coherent approach to the use of different competitiveness models to make homogeneous measurements in destinations with different characteristics. The formulation of the questions was made based on an analysis of the operability of variables of the key concepts, which are competitiveness, CATD model, CCR model and WEF model, understanding what each variable refers to is an approximation of the form of Measure and evaluate the development in the target studied.

The purpose of the use of snowball sampling was to identify suitable subjects to provide accurate information on the subject of interest on the recommendation of subject number one, the recommended ones should have similarity of characteristics, including knowledge, mastery of the subject And that it be considered, like the first one, as a main actor in the development of the activity to investigate. This type of research is limited to a small group, therefore, the selected subjects should be those considered as the main ones in the area of interest.

## **Theoretical framework**

Since its inception in 2001, the Magic Towns program as a public policy of the federal SECTUR has emerged as a development tool for sites with a tourist vocation. Thus, the localities included in the program do not escape the competitive dynamics of activity anywhere in the world.



In order to contribute to the measurement of tourism competitiveness, work has been carried out such as the Agendas of Tourism Competitiveness in Mexico, the study of Coordination Agreements on Resource Reassignment (CCRR) and the Competitiveness Index of the World Economic Forum international level. However, efforts to generate models that fit the particular reality of the Magic Towns program have been insufficient.

In this way, it is crucial to review the implications of competitiveness and the main studies and methodologies for their measurement in the tourism sector at local, national and international level.

### **Competitiveness and tourism**

The development of tourism had a marked increase in the 50's, thanks to the increase in purchasing power and leisure time; which generated new needs and demands on the part of society. On the other hand, thanks to the scientific and technological advances that characterized the Enlightenment, important developments were generated in terms of transportation, allowing the start of mass travel (Soneiro, 2011).

According to the World Tourism Organization (2015), tourism growth has experienced expansion of destinations around the world, which has made it a key sector for socio-economic progress, through vacancies in companies, income generation for the export and execution of infrastructures. Thus tourism plays an important role in the world economy reflected in the balance of payments, income of foreign exchange, generation of jobs, investments, among others. But at the local level, tourism is characterized by generating and maintaining a value-production chain that benefits not only those directly involved in the industry but also the whole destination.

Wall (1982) defines this activity as the temporary movement of people, for periods of less than one year, to destinations outside the place of residence and work, as well as the execution of activities undertaken during the trip and the facilities created for meet the needs of tourists.

In this way, tourism is made up of four fundamental elements: consumer demand; The offer of products, services and organizations in the tourist experience; The geographic space defined as all that physical base where the encounter between supply and demand occurs; And finally the market operators identified as companies and intermediary organizations between supply and demand. The dynamics of these elements will determine the success of the destination in the reach of its objectives and therefore its level of competitiveness (Daniel, 2012).

Competitiveness has been a concept that has crystallized over the years as a fundamental element for the success of any industry and country. This is demonstrated in the first references as Adam Smith, who in his work "The Nature and Cause of the Wealth of Nations" emphasizes the importance for a nation to produce at low cost, assuming that the free market would efficiently help That the production of one country could meet the needs of others (González & Mendieta, 2009).

On the other hand, David Ricardo in González & Mendieta (2009) after analyzing the conditions by which a country would be able to import goods still producing at low cost; Publishes in his book "Principles of Political Economy" the theory of comparative advantages, which is based on identifying the differences in the conditions of production of the countries, as well as on the possession of differentiated factors of production.

Until then, the aspects of competitiveness had not exceeded the criticisms that stood out as a self-destructive element, individualistic in nature and deeply dependent on economic growth; it is up to the works of Michael Porter that competitiveness takes on a useful and for the first time dynamic connotation. It should be mentioned that the concept of competitiveness has been approached from a variety of approaches and perspectives depending on factors as peculiar as the geographical, political, temporal, social, cultural or demographic context, to mention a few.

Given this scenario, a consensus is inferred that an economy is competitive as long as it shows an economic system capable of supplying and supplying its domestic market, as well as exporting goods and services.

In 1994, Esser proposes that competitiveness arises from "a complex and dynamic interaction pattern between the State, companies, intermediary institutions and the organizational capacity of a society", suggesting that competitiveness is achieved when a set of systems Act in the synergy necessary to reach high levels in the established indicators.

With the orientation towards companies as a unit of analysis, Bordas (1993) defines competitiveness as the ability of an industry to achieve the objectives that has been raised above the average of the sector of reference but sustainably; In other words, competitiveness is the ability to obtain a higher than average return on investment, in a reasonable way and with the capacity to do so with low environmental and social costs.

With respect to competitiveness among countries, Krugman in González & Mendieta (2009) emphasizes the role played by the business sector, stating that the decisive factors for the competitiveness of a nation are internal to the companies that compose it and not external, These factors cannot be affected in the short term if there is an adequate economic policy; That is to say, the competitiveness of a nation is sustained almost exclusively by the performance of each of its economic units as a whole.

For Porter (1991) there is a key element of a country's competitiveness: productivity. This author states that competitiveness is not part of a process of inheritance, but is created and can be maintained through the ability of the industrial sector of each country to adopt technological innovations that have a direct impact on productivity; Reason why the essence of the competitiveness of a country will be in its disposition to invest in technological innovation. In this way, the study of competitiveness in tourism planning, provides valuable information to know the capabilities of the territory and determine which can be positioned as real competitive advantages.

The relevance of the competitiveness of a destination will depend on its capacity, innovation and improvement, that is, on the generation of competitive advantages in the sector.

The objectives of competitiveness in the tourism sector are focused on promoting the generation, maintenance and growth of destinations through the coordination of the representatives of companies, government, society and academia (Aquino, 2012).

The measurement of tourism competitiveness in the world has been governed by the following general indicators such as prices, human factor, infrastructure, environment, technology, human factor in the tourism industry, opening and social development (Puccio, 2008).Competitiveness being a pressing aspect in any tourist destination, the analysis of its factors allows the support of tourism planning and management activities, thus reducing the uncertainty of the future development of the place.

In this regard, Ritchie and Cruch (1999) affirm that in the tourism sector, competitiveness is defined as the ability of a country to create added value and thus increase welfare through the management of advantages and processes, attractive, And proximity, integrating the relationships between them in an economic and social model. In this sense, Ejerque (2005) emphasizes that the added value of tourism products allows to sustain local resources and maintain their market position with respect to their competitors.

On the other hand, Daniel (2012) refers that tourist destinations and their competitiveness are established according to the attractiveness they possess, their management, organization, information and efficiency.

Thus, in order to determine and measure the aspects that influence the competitiveness of destinations, there have been methodologies such as the "Agendas of competitiveness of tourist destinations" proposed by the Mexican government; The study of the Anahuac University on Coordination Agreements on Resource Reassignment (CCRR); And the Travel & Tourism Competitiveness Index published by the World Economic Forum.

### **Competitiveness Agendas for Tourist Destinations**

In 2013, it was proposed to develop the Competitiveness Agenda for Tourism Destinations (CATD), whose purpose was to evaluate the current and actual situation of the destinations, taking their shortcomings as the starting point for undertaking a program of actions. The competitiveness tool is understood as the diagnostic tool for analyzing the situation of the main tourist destinations in the country (SECTUR, 2014), but in turn it is consolidated as a tool that constitutes a solid base of planning in contemplating the necessary elements For the sustainable tourism development of one's own destiny.

In addition, the CATD becomes an auxiliary tool in the comparison of contrasts between the different destinations of the country and thus understand the behavior of the variables of the competitiveness of each locality.

In this way, 44 destinations were chosen with the highest revenue from tourist activities, a higher rate of national and international visitors, among other points that highlight them.

In order to establish the methodology, it was necessary to establish a steering committee formed by the Tourism Ministry (SECTUR), the Fondo Nacional de Promoción Turística (FONATUR), the Consejo de Promoción Turística de México (CPTM) and the Centro de Estudios Avanzados de Turismo (CESTUR), coordinated by the undersecretaries of operation with the intention of enriching the methodology and that the vision of the topics was broad, considering all topics of sustainable local tourism development. However, a key element for the achievement of the objectives was the involvement of the authorities, as well as of the state governments with the cooperation of the federal (SECTUR 2014). To ensure the quality of the research, the participation of multiple higher education institutions was requested.

The methodology for the CATD was based on theories of competitiveness and sustainability as well as the particular characteristics of the respective destinations (SECTUR 2014). For the measurement of competitiveness, the CATD took as its basis nine indicators that include a list of more than one hundred variables related to the evaluation of competitiveness. These indicators are as follows:

1. Tourist offer
2. Democratization of tourism productivity
3. Tourism sustainability
4. Training and certification
5. Accessibility and Infrastructure (Facilities and services)
6. Patrimonial Security and Fiscal
7. Promotion and Trade
8. Destination Management
9. ICT and Tourist Information

## **Travel and tourism competitiveness report**

The World Economic Forum (WEF) is one of the institutions specialized in assessing competitiveness among nations. In addition, the WEF is responsible for a number of annual publications, including the Global Competitiveness Report, the Global Information Technology Report, the Global Gender Gap Report, and the Global Enabling Trade Report. Publishes the Travel & Tourism Competitiveness Report (TTCI) with the objective of providing a comprehensive strategic tool to measure "the set of factors and policies that allow the sustainable development of the travel and tourism sector, which in turn contributes to the development and the competitiveness of a country "(The Travel & Tourism Competitiveness Report 2015).

By providing detailed assessments of the travel and tourism environments of countries around the world, the results can be used by all stakeholders to work together to improve the competitiveness of the industry in their national economies, thus contributing to growth and prosperity national. It also allows countries to track their progress over time in the different measured areas.

## **Coordination Agreements on Resource Reassignment**

At present, the tourism activity is assumed as a significant opportunity to promote local development in the destinations, so that have been configured public policies that promote their diversification and consolidation in developing countries. These initiatives aim to promote the development of the activity from three perspectives: conservation of cultural heritage, environmental preservation and improvement of living conditions of local populations.

Among its primary objectives, the Ministry of Tourism (2007) has considered contributing to the consolidation and strengthening of the country's tourist destinations by increasing the competitiveness of the national tourism supply, thus guiding efforts to achieve an increase in tourist flows, their stay and average expenditure. Since 2003, the SECTUR has contributed to the Federative Entities for the development of high-impact tourism projects through Coordination Agreements on Resource Reassignment (CCRR).

The CCRR intends to develop a deep and systematic evaluation scheme in order to maximize the results of the public expenditure and, therefore, of the Secretary of Tourism. In this way, its main objective is to establish clear rules for reallocation of resources to the states with equity and transparency, as well as to promote actions aimed at strengthening the competitiveness of tourist destinations. However, given the lack of elements that will determine the effectiveness of the program, through the support of the Sectoral Fund, the Universidad Anáhuac carried out the study entitled "Evaluation of the performance of tourism destinations within the framework of Coordination Agreements on Reassignment of Resources."The tourism destination performance evaluation model consists of seven sub-indicesIn order to carry out the reallocation of resources, two aspects must be taken into account:

1. The tourism performance that the destination has had in recent years.
2. The stage tourism development in which is the destination.

Under these criteria four types of destinations are suggested:

- The first group of destinations are those that are in the stage of stagnation but are destinations with a high IDT and also with low populations.
- The second group where it should be supported are high-level RTD development destinations that are generally populations with more than 100,000 inhabitants but less than 1 million.

- The third group consists of destinations where the marginal impact is very low since they have very high or very low RTD and are also in stages of consolidation or stagnation, so there must be a very careful selection in the projects they wish to carry out.
- Finally, the fourth group is the destinations that do not have a high RTD but are also in the stagnation stage. For these destinations it is urgent to verify the strategic vision of the destination. It is necessary to identify the true potentialities of the destination and to redefine whether tourism should be the scheme to be followed for the generation of economic development.

### **Magic Towns Program**

The utility of establishing a tourism competitiveness measurement system that is useful both internally and externally, reflects the need to focus the indicators according to the characteristics of the destinations in the country. In this way, the present work covers the theme of Magic Towns as the platform that joins 111 tourist destinations in Mexico with similar characteristics and that are susceptible and necessary to subject to measurement in terms of competitiveness.

The Magic Towns Program (PPM) emerged as an initiative of the federal government in 2001 in collaboration with various government agencies and state and municipal governments, such as the UNWTO, the Instituto Nacional de Estadística, Geografía e Informática (INEGI), the Instituto Nacional de Ecología (INE) and the Naciones Unidas (UN); With the aim of diversifying the country's tourism offer as well as providing a sustainable development tool for regions with a high historical, cultural and natural value and whose population is interested in seeing tourism as a development option.

The foregoing derives from the national objectives of making tourism an activity that contributes to raise the welfare levels of the receiving population, maintain and increase employment, promote and make profitable investment, as well as strengthen and optimize the rational use of resources And natural and cultural attractions with the basic action of all the actors of the society.

In this way, the aim is to enhance the small and medium-sized towns with a series of buildings, festivities, cultural traditions, gastronomic, that is, an imaginary environment that could be attractive for tourists.

This program contributes to revalue a set of populations of the country that have always been in the collective imagination of the nation as a whole and represent fresh and different alternatives for national and foreign visitors, directed to picturesque Towns that are characterized by meeting some requirements related to its natural wealth and culture. In this sense, the Magic towns program is a public policy that seeks to develop the various tourism potential of Mexico (SECTUR 2016).

In this context, a Magical town is defined as "a locality with symbolic attributes, legends, history, transcendent facts, everyday life, magic that emanates from each of its socio-cultural manifestations, and which today represent a great opportunity for Tourist use "(SECTUR, 2016).

In order for a locality to be a candidate to join this program, it is necessary to have a set of differentiated tourist attractions, in addition it must approve a rigorous administrative protocol called Rules of Operation. A town called Magic town must contain historical or contemporary architectural elements, emblematic buildings, traditions, handicraft production, traditional cuisine and, above all, that have a tourist destination of support within a radius of influence no greater than an hour away Federation Official, Magic Towns Program, 2015).

In addition, these populations must have important and specific characteristics, such as:

- To have a base population of 20,000 inhabitants and be located at a distance not exceeding 200 km, or the equivalent of 2 hours of travel by land from a consolidated tourist destination or a population considered as an issuing market.
- You must apply for incorporation through the municipal and state authorities in order to carry out a formal process.
- Civil society must have a petition for incorporation.
- Community participation strategies should be developed.
- Have plans for cultural development, environmental protection, tourism plan, among others.
- Design and implement a commercial reordering program, especially for the problems of informal commerce.
- To have a symbolic tourist attraction as a reference.
- Possess a variety of tourism products to offer tourists.
- Have a vernacular or twentieth century architecture with emblematic buildings.
- Preserve and promote intangible heritage as festivals and representative traditions
- Significant local artisanal production.
- Maintain a traditional cuisine in its original context.
- Have tourist services and intermediate level accommodation as a minimum requirement.
- Health and Public Safety Services.
- Have an inventory or declaration of heritage: historical monuments, real estate or other.

Once some of the requirements that SECTUR have been identified for consideration as PM, an evaluation and subsequent decision on incorporation into the program are made. In case the verdict is favorable, the guidelines set forth in the rules of operation of the program in question must be respected. The localities that achieve the appointment will receive training in an induction workshop to the Magic Towns Program and a Planning and Management workshop for Municipal Tourism Development.

The SECTUR has named in 2016, Magic Town to 111 populations in all the Mexican territory. The environment of each one varies from the marked influence of the indigenous past, the legacy of the old Spanish colonial empire, the preservation of secular and ancestral traditions, and important places of historical events in the life of Mexico. The present work focuses on three Magic towns that were constituted as object of study when applying the methodologies of measurement of the competitiveness mentioned above.

## **Development**

The development focuses on three Magic towns that were constituted as object of study in applying the methodologies of measurement of competitiveness mentioned above.

### **Tequisquiapan study case**

A review of the place and the analysis is presented with the methodology of Competitiveness Agendas.

### **Review of Tequisquiapan, Qro**

Tequisquiapan is a city located in the southeast of the State of Querétaro, named Magic Towns as of 2012. Its territory comprises 343.6 square kilometers, which translates as 2.3% of the state's surface. Its population is estimated at 54, 929 inhabitants (CPTM, 2016). The city was founded in 1551 by royal credentials of Charles V, endorsed by the Viceroy of New Spain Don Luis de Velasco and made by Don Nicolas de San Luis Montañez.

It emerged with the name of Santa Maria de la Asunción and the Aguas Calientes, much of its population was of indigenous origin, this is reflected in the architecture that denotes the uses of local materials with simplicity and harmony, although also manifest designs Colonial and cobbled streets. In 1656 it changes its name to Tequisquiapan, the origin is Nahuatl and means place of waters and tequesquites, it makes reference to the traditional thermal waters of Querétaro (SECTUR, 2016).

This place, since pre-Hispanic times, has enjoyed a special recognition for a unique attraction, the springs of hot springs, and although it has to be pumped from the subsoil to be able to reach the spas and hotels, it continues to be an element that attracts tourists. It also has attractions such as temperate climate, squares and streets of colonial style, the local crafts, balloon flights, and enjoy a privileged geographical location, as it is the starting point for the Wine and Cheese Route, Which, together with the thermal waters, forms the motive for its integration into the Magic Towns Program.

On October 10, 2016, the Federal Government announced, through the SECTUR, the appointment Tequisquiapan would receive upon joining the list of Magic Towns , the fourth locality belonging to this program of the State of Querétaro and the number forty Three at a national level, ensuring an annual income, from federal resources, destined to the development of infrastructure and tourist programs.

To enter into the consideration of Magic Towns it is necessary to demonstrate that the elements mentioned above are in the description of the PPM, a special element that is part of the life and culture of Tequisquiapan is the Route of Wine and Cheese, despite Be a strong enough element to be considered as unique account with more tourist attractions that diversify the image of Tequisquiapan. Among its main attractions can be listed the following:

- Parish of St. Mary of the Assumption.
- Miguel Hidalgo Square.
- La Pila Park.
- Parade ground.
- Monument to the Geographical Center of the Country.
- Opal Mine.
- Museum of Cheese and Wine.
- Vineyards the Round.
- Finca Sala Vivé by Freixenet.
- Cheeses Go.
- Market of the Rod and the Wicker.
- Museum of the Canasta.
- Mexico Museum Loves Me Another important element is the events that take place throughout the year, have become iconic and representative of the time in which they are carried out. The main events are as follows:
  - Festival 100 Mexican Wines, in March.
  - Cheese and Wine Fair, last weekend in May.
  - Harvest Festivals in July.
  - Christmas Concert at Finca Sala Vivé, early December.

### **Tequisquiapan using methodology Competitiveness Agenda Tourism (CATD)**

With the intention of obtaining objective results, results of the theoretical and practical basis are tied with an interpretation analysis. The flagship product of Tequisquiapan is the Route of Wine and Cheese, which is part of the identity of the place and is very representative, in addition that a whole culture has been created around it, however, it is not the only thing that is offered, When arriving at a diversification of products considering the routes of art, adventure, hot springs, music fairs and so on, it can cover a larger market, seek not to be limited with just one identity.

Therefore, it is suggested to complement the point of attention of wine and cheese, seeking a renewal of attractive products that can be equally profitable. An essential part to which the local population is entitled is to receive social, cultural and economic benefits for the development of tourist activities in their usual place, what is perceived economically is the most quantifiable and notorious in the distribution. Certainly, a high percentage of the population of Tequisquiapan participates directly and indirectly in tourist activities, by affirmations of the interviewed actors, we obtain the data that is more than 70% are those that are developed in this industry, but for the same affirmations Found that they are engaged in less rewarding activities by being bellboys, waiters, maids, receptionists, tourist guides, taxi drivers, street vendors and handicraft traders, leaving the most paid positions to non-local people.

The data obtained by the research is that more than 50% of the owners of the main tourist businesses (hotels, restaurants and tour operators) originate in Mexico City and more than 25% are from Santiago de Querétaro and the same percentages are they are reflected in the managerial or managerial positions of the same organizations. The remaining 20% is divided between some local and other originating from places in the interior of the Republic, keeping the local community in minority, being that in the ideal scenario they should be the ones that occupy the largest percentage.

Therefore, it is correct that the majority of the population is benefited by the tourist activity, that there is distribution of the goods and that there are jobs for them, however, the distribution is not equitable so the development can be improved.

Analyzing from another angle the benefits obtained is cultural exchange, it is more complicated to be able to make comparisons or measurements of this by not having a quantifiable measure, but the important thing to mention is the mutual benefit obtained by both tourists and service providers. This is an important factor for globalization and trade, in addition to enriching both cultures.

An important element is the legal framework under which the measures of protection, care and maintenance of the place are governed, trying to minimize the negative effects of the intervention of the visitors. Tequisquiapan, offering different types of destinations, requires specific regulations for each one, it has natural places, places like the vineyards and the part of the center that is distinguished by its architecture and colonial style, of the three previous ones that needs a greater care is The vineyard, in Mexico there are only four regions where wine is produced, one is Tequisquiapan, so it is indispensable to take care of the quality of the product and all production processes.

In natural areas where adventure activities do not require such precise care of the activities to be carried out, although it is necessary to have a control of the way in which they are carried out, besides taking care that the natural spaces are not affected. In this case any ecological regulation can be applied in the applicable by the nature of the same.

Regarding conservation measures for the area of the center, there is an agreed regulation but not with legal bases that make it mandatory, such as the use of advertisements and posters painted and not making use of plastic elements that are harmful to the environment , The form of operation reducing the amount of waste generated, among others; Even so, 100% of establishments comply with this regulation, equally all inhabitants cooperate in maintenance, ensuring that streets, sidewalks and green areas are always clean. Thus, it presents a clear advantage with the moral fulfillment of the citizens, but does not exempt that a legal base is always better to guarantee enforcement.

As in the previous cases, there is a lack of specific regulations for the situation of Tequisquiapan, in any of its areas, and although similar senses are occupied in other destinations and Magic Towns, it is always necessary to be guided by local regulations that consider all the unique aspects.



Regarding the preparation of human resources, it is specified that it is an indispensable factor for the success of any company, destination or Magic Towns; It is recognized the need to have well-trained and qualified personnel, in the case of Tequisquiapan it is observed that the service providers lack a correct preparation and have opportunities of improvement in many aspects, as with the certifications since the knowledge that they have referent To the service they acquire by observation, it is true that in general opinion they offer a good service, although they are based more on the friendly and warm treatment to the professional theoretical questions.

An important factor is that people of greater preparation choose not to engage in tourism activities, despite being the most common practice, this percentage of the population decides to work in sectors of industry and others, taking advantage of its proximity, this 30% Moved daily to work in San Juan del Rio and Santiago de Querétaro, the decision is encouraged by the lack of work well paid and suitable for professionals. 70% of the population that dedicates to the tourist activities are people who lack of a professional preparation, their level of studies is low, in the majority of the cases, therefore they can not aspire to have positions of greater hierarchy.

As a consequence of the above, there is a situation of bilateral responsibility, since, because they do not have well-trained and qualified personnel, the owners of tourist companies decide to hire personnel that are not local for managerial and managerial positions, in contrast, people Locals who do have a correct preparation choose to work in different places and activities, taking away the opportunity of internal promotion to employees of low ranks.

On the subject of preparation, from another perspective, it is important to mention that not only employees are properly trained, certifications of services and facilities are equally relevant, it is a way to ensure that the services and products offered to the Tourist are of quality and that there is an established standard with which they must comply. Federal distinctions are applied equally and with the same validity in this Magic Town as are the H, M and Crystal.

Regarding the accessibility issue, it was found to be limited since there is only one way to get there and by land, the closest places (Mexico City, Mexico State and Santiago de Querétaro) are the main emitters of Tourists, a factor that influences this is that there are direct trips in the respective bus stations to Tequisquiapan, its price is accessible and the service is good. Not having direct trips from other cities is more complicated access, it is viable to arrive by own car, but for those who travel from far away can be a very long journey. One option that many visitors find is that they travel from their place of origin to Mexico City or Santiago de Querétaro, either by land or by plane and from here depart to Tequisquiapan, it is a long trip and for those who belong to the market Captive it can be difficult to take this choice.

The decision that must be taken is to increase the number of places that have direct trips, increase the capacity of the local bus station and thus bring the connectivity of Tequisquiapan with other destinations that are not only the nearest.

Speaking of hotel supply, it was agreed that since 2014 there has not been a formal study that counts service establishments (hotels and restaurants) and the capacity they have, one reason why they have not done so is that No major investment or expansion increases have been recorded, even though it is necessary to have a control to know the real situation of the Magic Town, that is why the figures given by the interviewees vary, coinciding that they are more than 1,000 ( Thousand) quarters, based on the previous data and considering a projection of zero growth without arriving at a correct data.

Likewise, it is not necessary to corroborate that the same hotels that were in operation in the year 2014 continue to operate and continue with the same capacity, this is a vital fact to be able to consider the previous information as valid for a base and pending updating.

This, in the same way, serves as control of the inclusion of accommodation establishments and corroborate that each one complies with the measures and norms prepared by the government of Tequisquiapan, as well as the corresponding dependencies at the federal level, otherwise it can not be guaranteed The fulfillment of these.

With the supply of food establishments a similar situation occurs, they mention that they have an approximate record of 100 restaurants, however, this amount has not been verified since 2014, also mention that a problem to have a control over these is the trade Informal and that the Tequisquiapan program, the force of the transformation, was not effective in trying to register all the informal sellers, both crafts, food and others. It presents a good variety and a good number of restaurants, it is only necessary to maintain a better control to take care of the quality and to know the situation of Tequisquiapan in general terms.

In the area of property and fiscal security, two positions are taken. In the first one, concerning property security, you need to know the elements that make up your identity, which are wine and cheese. The next thing is to state the form in Which protects this heritage, it has already been mentioned that the quality of products is taken care of as the processes for their elaboration, from the protection of the wine fields and the stables where the raw material is obtained, until the last process where Finished product. Legally there is a vacuum that does not oblige cheese and wine companies to protect the identity of Tequisquiapan, they are only guided by the general regulation of companies that produce edible and alcoholic beverages, however, it is recognized that this maintains the quality of Products, and in fact it is not pertinent to create norms in favor of identity since there is no denomination of origin that is in between. In the area of fiscal security, it is guaranteed that all service providers that are registered are required by law to comply with their tax obligations as stipulated in the Fiscal Code of the Federation, however, as a state rule is determined the collection Of a special tax for development of tourist activity that is 5% of the total, is applicable to services in restaurants, bars, cafes, hotels, inns, inns, travel agencies, tour operators, and all those who develop activities Of a similar nature. Here is clearly a specification in local obligations as it is handled by most of the states of the Republic.

With regard to the promotion campaigns were very clear the explanations and the process to which they must comply to execute the concrete in the campaigns. Planning is about questioning whether it is being carried out strategically and if it is correct, comparing the places where most campaigns against the places of origin of tourists take place, with the intention of understanding the real effect On the consumer public and to know if it is more feasible to start campaigns in another part of the Republic or even to think about international campaigns, to be able to do this, several deep market studies are needed in which the place that Tequisquiapan occupies in The mind of the tourists belonging to the captive market and the latent markets.

In the trade topics are positive comments, since more than 60% of all products are produced, distributed and marketed by local people who perceive direct benefits, another point in favor is that these products have a competitive price and is no longer Low to its cost of elaboration, which reflects a greater benefit to not having losses. It is a vital part of the economic activity of Tequisquiapan, complementary to the tourist activity and the cultural exchange, giving to know the local artistic and artisan work, is one of the most common ways in which the local population can interact directly with the tourists and with industry. Hardly any other place can have such a wide offer of local products that is an advantage for the development of self-sustaining tourism and the development of the area.

An essential issue for the development and correct operation is the application of information technologies to the services offered. According to data obtained, more than 70% of tourists arrive with reservations, travel packages, tours and other services already established via internet that 70% prefer to make use of facilities that provide wireless connection, either in the place of lodging, Restaurants and transportation units.

It is here that reflects the importance of being part of these technologies, if you do not have a form of Internet contact and are not offered these connectivity services to the tourist, is similar to the establishment does not operate and covering only To 30% of tourists who do not pay attention to these details are translated in very low numbers, without considering that the percentage of those who prefer the connectivity facilities is increasing, fortunately the Magic Town takes it in a correct way and more 80% of the hotels are registered in pages and search engines of reservations.

A complicated situation for Tequisquiapan is its development in investment in the last eight years, the last major investment period was 2000 to 2008, in this time contrary to presenting a growth have been depleted investors. Most of the investments are national, occupying between 95% and 99% the rest is foreign investment, which, like the national, has not increased in this time. There may be several reasons that have affected this situation, the ease of starting a business, the growth of the Magic Town market or the low yields obtained, despite this reasoning, the interviewed actors mention that the returns have not been affected, Which remains a profitable destination, but with the potential to grow.

The market that has captive is the national and coming from the closest states, according to the expansion planning is to reach the North American market, the United States and Canada being the main emitters of tourists to the Mexican Republic, in order to achieve this need to improve and To change multiple situations, such as the training of service providers, since as an indispensable requirement should be asked to master the English language, also establishments must be prepared to act before the scene of receiving foreign tourists.

Another market to be embraced is that of those who are looking for adventure, already offer the products and services oriented in this, the current demand is low since few know this new image, so the promotional campaigns must begin To be focused on the new products that has Tequisquiapan without depositing the Wine and Cheese Route, but with an emphasis on the new offer, product diversification must be made known.

An important situation is the one that has arisen lately with the incidents that occurred on the Mexico - Querétaro highway, acts of violence that have given a negative image and as a result has been under the influx of tourists from Mexico City, this being the place of origin Of 60% of the usual tourists. In the information obtained mention that there is no decisive factor affecting the tourism industry, but the interaction of various factors does affect greatly, despite that it is argued that insecurity is one of the most important to make a destination A success or a failure, that is why authorities must work to ensure the safety of tourists, service providers work on what they offer and local governments in maintaining legal bases that ensure the physical and moral integrity of visitors.

In the themes of competition between tourist actors, it is mentioned that, although there is no relevant growth, they have identified the types of tourists arriving in Tequisquiapan and based on that, they have innovated their services and products focusing on a specific target, reaching The variations of the same service, like the lodging, there are big hotels that offer the conventional services, there are boutique hotels that offer a more personalized service, a small hotel, a special treatment and especially the attention to the tastes of the guest, of equal There are hostels that are focused on backpackers who do not have a high budget, look for adventure and generate experiences.

With similar food establishments, there are restaurants with formal and elegant dishes, bar restaurants that offer a more festive atmosphere and a less formal label, informal establishments that generate experiences different from the previous two and more.

It is thus that diversifications of the same service have been used, seeking to fully satisfy the tourists and that the competition between actors is not aggressive.

## **Tequila study case, Jal**

In this section, a review of the magic town and the analysis of the CCRR methodology.

### **Tequila Review, Jal**

Tequila is located in the center of the state of Jalisco, slightly to the west, at the coordinates 20 25 '00' 'at 21° 12' 30 " north latitude and 103° 36 '00' 'at 104° 03' 30 " West with heights of between 700 and 2,900 meters above sea level. The main economic sectors are agriculture and livestock in which the local crops of maize, maguey, mezcal and sorghum are highlighted, as well as the cattle breeding of meat and milk. The main activity is the manufacture of tequila; As well as the elaboration of barrels, barrels and amphorae made from oak and pigskin.

The tequila industry is the main economic source in the municipality; According to the years, the companies that inaugurated the elaboration and distribution of tequila, such as: "La Riojeña", founded in 1795, "El Tigre" (today La Constancia) founded in 1923; Distiller of the West (today "Tequila D'Reyes") founded in 1840; Perseverance (today Tequila Sauza), have been the triggers that the industry, is named World Heritage and which has given world renown to tequila.

Tequila is the "place where it is cut" or "place of tributes", or for acquiring some of its oldest traditions, as well as its handicrafts produced in the municipality allude to the agave and the production of tequila. In 2003, Tequila received the label of Pueblos Mágico, whose purpose was centered on the renovation of the urban image of the Tequila center and the creation of infrastructure for the provision of services.

This appointment was driven by the efforts of a small group of business owners who are the most important company in the Mexican tequila industry, interested in taking advantage of the federal program as a way to promote tequila as a historical and cultural legacy of the country. Between 2003 and 2005, the three levels of government contributed 16.5 million pesos. Between 2006 and 2008, another 70 million pesos were available, both by the state and by UNESCO, since in 2006 the agavero landscape and the old tequila facilities became part of the cultural heritage of mankind (Hernández, 2009).

### **Case of Magic Town Tequila, Jal. Using the methodology of Coordination Agreements on Resource Reassignment (CCRR)**

One of the most relevant objectives in applied research, which supports this work, was the tourism destination performance evaluation model, based on the CCRR methodology, which is made up of seven subscripts of tourism performance: 1) Sub-index of conditions for tourism in the destination, 2) Strategic planning and sustainability, 3) Operation, 4) Results, 5) Satisfaction, 6) Governance and 7) Security. Each of the mentioned sub-indices are broken down, according to their characteristic, according to the first subscript which are the conditions for tourism in the destination, takes into account the components of destination characteristics, supply, promotion capacity and tourist vocation .

In which it is stated that Tequila has the necessary conditions to develop itself as a competitive Magical Town, but without proper monitoring it prevents the great potential that the locality has. As for Strategic Planning and Sustainability, it is worth mentioning that tequila exists innovation and technology, but sustainability is one of the most worrying components within the locality, since the division of capital and projects are consumed by the private sector. According to the Director of Tourism in the municipality, said about the existence of applications for smart phones, which will be called "Smart City Tequila" or "Smart Destination" in which the first application will be based on offering the tourist National and foreign, the ease of knowing all the services of a city, immediate information, of tourist interest.

That stimulates the commerce and generates value for the citizen and in this way the private and public institutions, will be able to know what the affluence Of tourists in the attractions presented in the application. While in the mobile application of "Smart Destination". Its objective is to boost tourism in the province, so that tourists or visitors, have the option to organize their trip through the web and on the mobile device. It is considered two of the most innovative strategies to make Tequila, located in a competitive destination.

Operation at destination, according to tourist aspects, is effective, but not yet efficient, due to the lack of training, as well as adequate or assigned personnel to perform this sector. According to the results, the destination has interventions of the private sector in most of the locality, which makes that Tequila, is dependent of the Industries.

Governance in Tequila, is based on the majority of the private sector, since the lack of synergy in decision making, causes that the results of the strategies are not given. Security in Tequila is efficient in its entirety, making the town one of the quietest in the state of Jalisco. It is vital to mention, that outside the dates of cultural events, at the end of the year, at night there is little supply for entertainment.

Since the appointment of Magic Towns has grown 100% of restaurants and hotels and there is currently an increase of companies dedicated to tourism; In terms of emigration, figures have fallen, since all the public services are already available.

### **Loreto case study, BCS**

Here, the review of Loreto, BCS and its analysis with the methodology WEF.

### **Loreto Review, BCS**

Another municipality that is part of the Pueblos Mágicos Program, since 2002, is Loreto, located in Baja California Sur. This municipality is distinguished for being a cultural tourist destination located 151 km from Ciudad Constitución and 361 km. Of City of La Paz. Due to its geographical location, Loreto has a humid and hot climate with an average temperature of 24 °C.

The location and characteristics of this locality, is ideal for tourism development. Loreto has extensions of beaches, areas in natural state, as well as a cultural wealth; among its main destinations are: Mission of Our Lady of Loreto Concha, Museum of Jesuit Missions, Cuevas Pintas and La Pingüica, Loreto Bay National Park.

Loreto has emerged as one of the main tourist destinations in the north of the country as it has valuable natural resources as well as cultural distinctive of the Mexican environment. Loreto was the center of the Jesuit and Spanish culture during the colonization, so it has a vast wealth of cultural attractions.

The wealth that Loreto demonstrates is not only appreciated in its main destinations but also in the flora and fauna that surrounds the Magic Town, example of it is National Marine Park of Loreto, that protects 2,065 km<sup>2</sup>. In 1996 residents of the town and The Nature Conservancy, a non-profit organization, joined forces to form a National Marine Park, in order to shelter the ecosystems of the five existing islands.

From North to South you will find Coronado Island, Danzante Island, Monserrat Island and the oldest, Isla Catalina. The strange forms of the terrain demonstrate the geological past, formed by the union of the tectonic plates, the Islands remain where the mountains sank in the sea, while others rose like volcanoes.

Since the appointment of Loreto, BCS 2012 as a magic town, the National Fund for Tourism Promotion (FONATUR) has sought to guide the future of the destination towards new trends in the global tourism market, aimed at the nautical, health and golf segments, as well as Attract ecological tourism for the greater use of the natural resources of the area.

Its natural market is made up of tourist flows from Mexico, the United States, Canada and Europe, and highlights two important holiday seasons in the year: from November to February and from March to September.

The essence of each country is reflected by the culture that each region has according to their beliefs and lifestyle. As in the rest of the country, Loreto counts on diverse festivities and events that are celebrated during the course of the year where one can appreciate the culture that surrounds to this Magical Town; The most representative are: Festival of the Jesuit Missions, Festivities of the Foundation of Loreto, State Fishing Tournament Gobernador Cup, Loreto 400 and Festivities of the Virgin of Loreto. Loreto has three main access routes: by air (Aéreo Calafate, Alaska Airlines Loreto International Airport, by land (Transpeninsular) and finally, it is possible to arrive by sea to Puerto Loreto.

### **Case of town Mágico Loreto, BCS. Using the methodology of the World Economic Forum (WEF)**

The main objective of The Travel and Tourism Report 2015 is to measure the positive and negative factors that influence the development of tourist activity with the purpose of making information available to entrepreneurs looking to bet on the tourism sector and investing in the development of Business within the destination.

The analysis made to the answers obtained by the key players of the industry, show the limitations that the destination has and that avoid the boom of the tourist activity from its appointment as Magic Towns.

The first limitation that was found is the lack of air connectivity in the place, which prevents a greater flow of tourists due to the difficulty to reach Loreto; Currently there are two airlines that go directly to Loreto, Aéreo Calafia; Regional airline that goes from La Paz to Loreto from Loreto to Tijuana and vice versa, to get to Loreto it is necessary to make a stopover in La Paz where the next flight will be taken to Loreto. And the second airline is Alaska Airlines, it goes from Canada to Loreto. In 2014 Aeroméxico suspended the flight connecting with Los Angeles, Culiacan and Mexico City, key players say that the reasons were diverse but the main one was the lack of existing demand; was considered the flight that fed the most tourism to Loreto.

Some of the actors interviewed mentioned that during the promotional fairs of Magic Towns, tourists are interested in visiting the destination but knowing the way to move and the time it takes to get to the place, they decide not to visit the Magic Town, that is to say, Which becomes a problem to grow the destination within the tourism industry. Another limitation is the lack of access to specialized human resources, people who have an important position do not have the knowledge and expertise to be the head of companies or institutions in the tourism sector, to such a degree that they speak poorly of the rest of The key players.

The same owners and managers of the companies take drastic measures and provide the training to its collaborators to improve the quality in the service as well as the specialization in 40 different areas. Few are the collaborators trained to 100% to give a good service to the tourists, nevertheless the lack of dominion of another language affects the competitiveness of the destiny and gold therefore the demand of the products and services of the destiny.

When interviewing the key players, 50% of them showed a lack of knowledge about the industry, as they did not have the technical expertise to take on the position they now occupy, and as a consequence they can not properly direct companies and institutions and This way the tourist industry is affected by the lack of strategies to increase the potential of Loreto. Aerial connectivity and the non-specialized human resource already mentioned are the main problems for the adequate development of the tourist industry, adding the limitations described in the results. According to the WEF in the results obtained in the measurement of the tourism competitiveness indexes, they found four key findings in the hand of an additional quantitative and qualitative analysis.

First, the T & T industry continues to grow rapidly. Second, new trends are emerging, and the countries with the best TTCI results are the ones best equipped to capture the opportunities they bring. Third, the development of the T & T sector offers growth opportunities for all countries, regardless of their wealth, and offers employment opportunities at all skill levels. And finally, the development of the travel and tourism industry is complex, requires interministerial coordination (international and public-private partnerships).

However, given a microeconomic (regional) approach, to the previous analysis the growth that the tourism industry is having is due to the characteristics with which Mexico counts, considering that each destination is the foundation of the nation, each magic town Has the potential to take the tourist industry to the top and surpass the rest of the nations that lead this sector.

The results in the TTCI show that the countries that have the most equipment are the ones that better capture the opportunities that the industry entails but according to 17% of the interviewed actors affirm that the threats or weaknesses must be transformed into opportunities using the resources belonging. If the weaknesses that each Magic Town has become opportunities, they will have greater advantage that benefits the people that make up the destination. In order to achieve all of the above in addition to the natural qualities, it is necessary to strategize and coordinate the tourism sector through collective work by the key actors of industry and public-private institutions.

It should be considered that although the Travel and Tourism sector is growing faster globally than many other sectors, seven ongoing transformations can have significant implications if they are not addressed in an appropriate and timely manner, and if it affects Mexico, affects all Magic Towns: Administrative barriers; The potential generated by the growth of the travel and tourism sector is being hampered by visa practices and border controls. According to a UNWTO study, the proportion of global travelers applying for a visa has declined from 77% in 2008 to 62% in 2014 (UNWTO, 2014). However, much more could be done.

It is logical that there is a regulation for the regulation of entry and exit of people but the incorrect application of these avoid generating greater economic output. The WEF research estimates that the elimination of bilateral travel visas would increase more than three times the flow of travel between countries. In fact, improved visa processes alone could generate an estimated \$ 89 billion in additional international tourism revenues and an additional 2.6 million jobs by 2016 (WTO, 2013). Perceptions of instability; the diversity of social phenomena that generate disturbances and alter the security of a nation influence the tourist flow.

Whatever the root cause, the impact on the affected destination is the same: a decrease in the number of tourists and an increase in income, which may be temporary but nonetheless significant. In times of high risk, the natural instinct of nation-states is to reevaluate their borders and immigration policies. However, closing borders is not a viable solution as it will not solve security challenges and lead to further major economic losses. However, it is known that the perceptions of insecurity do not only affect where they arise, but also affect the nation in general, which affects the destinies belonging to it. The key is to generate the necessary levels of collaboration between international institutions, governments and the private sector to increase security for tourists.

Difficulties in attracting the best talent; the travel and tourism industry is one of the largest employers in the world, with enormous potential for creating new jobs. The travel and tourism industry expects to employ 338 million people by 2023. However, the industry has a hard time attracting the best talent, both for technical and managerial positions.

According to the WTTC, the total global impact of talent gaps could cost the global economy about 14 million jobs and a loss of \$ 630 billion of GDP. Changes in the composition of tourist demand; the industry will have to adapt to the needs of new travelers (such as milenials and senior travelers) to avoid failure, as these will define business strategies. The industry has to generate strategies to meet the demands and needs of these groups as they look for totally different experiences. Environmental impact; Passenger air traffic is expected to increase by 31% by 2017, with environmental implications including a projected 20% increase in energy demand. 43 The increase in the tourism sector can also affect local destinations through increased waste, water use and possible deterioration of cultural and world heritage sites.

International organizations and institutions, including ICAO, IATA, UNWTO, WTTC, ITP and Forum - have brought together industry leaders to promote dialogue on these issues and help establish industry standards and objectives (TTCI, 2015). Investments in infrastructures; while the tourism industry is growing strongly, infrastructure investments (development of airports, roads and railways, and communication technologies) are lagging behind, leading to significant bottlenecks. The lack of investment affects in greater impact than other transformations since it is considered fundamental for the development of tourist activity in the first instance.

The public and private sectors, including airlines and airports, need to create strategies that integrate infrastructure, investment, regulation, sustainability, security if they believe they will continue to maintain and even have a growth in the sector, synergy is needed in all processes.

New technologies and innovations; New technologies and innovations, such as GPS-enabled smartphones and growing reliance on online transactions, are reshaping parts of the travel and tourism industry by requiring businesses to rethink the way they deliver services.

In this transformation is reflected the ability of each company to react to changes that the external environment generates and that are outside its control, but that have to adapt to not be left out. It is clear that new technologies and innovations are revolutionizing the industry in an unexpected way. The transformations mentioned are important aspects for the industry since everything that a change or growth is good or does not generate should be considered. Likewise, an environment of uncertainty is replaced by actions to be taken in the event of an unexpected phenomenon.

## **Conclusions**

By combining the effort of three case studies, the conclusions drawn by the three separate studies are presented, having at the end a general conclusion that covers the whole picture of the usefulness and importance of these research works.

### **Tequisquiapan case, Qro**

One objective of this research was the evaluation of the program of Competitiveness Agendas of the Mexican Tourist Destinations implementing their indicators to the Magical Town Tequisquiapan to know if they are functional for the nature of a similar destination. The first indicator is the tourist supply, it refers to the measurement of the products and services that maintain their disposition for the consumption of the tourists.



As in every destination whose main activity is tourism, there can be a varied offer, but preserving the elements that are those that give identity to the place, being in this case, the Wine and Cheese Route the star product, besides Additional ones that seek to satisfy the increasing demand in the variety of activities and services. This indicator is applicable to the main destinations as the so-called Magic Towns, since without offer it can not be considered as a tourist place.

Another indicator is the democratization of productivity, it is interested in how the benefits of tourism activities are distributed to the receiving population. This was a topic full of contrasts in the case applied to Tequisquiapan, since the local population does gain benefits, but not those that should, and they are not given the opportunity to increase them by accessing better positions in the local tourist industry. This is a vital factor when it comes to sustainable tourism, which takes care that the local population benefits from being participants. This indicator does not give a completely positive response despite having a complete application to the Magic Town.

The third indicator is sustainability, to what degree the site is sustainable by itself and takes care of its resources to maintain them. In many aspects, it is linked to the previous indicator, with the difference that in the present one considers elements such as the index of work, the activities to which the inhabitants dedicate themselves, how they use local resources not to depend on foreign elements and the benefits Remain among the premises, as well as measures to care for and preserve the tourist attraction and natural areas. Based on the results obtained, it is affirmed that in matters of participation of the premises there are great improvements to be made, however, in the care and maintenance of the attractions and natural resources are carried as expected, in addition to the care that has For preserving the identity of the Magical Town with local elements. Indicator is applicable and is partially accomplished.

The training and certification indicator qualifies both the professional preparation of the tourist actors and the fulfillment of the establishments to be able to receive the corresponding certifications according to the turn. The result of the training of service providers was very low, demonstrating a clear need to implement training programs, this can be a decisive factor to increase tourism and even cover other markets, if not carried out can be a deterrent For the growth and development of the place, despite the potential it may have. Regarding the certifications of the establishments, it was stated that they had the necessary acknowledgments to guarantee that what is offered is of quality, a fact that can make doubt this is that there is no control over the establishments that currently operate in the area of lodging and Restoration, if they are not known what these are and their capacities less can be assured that they are regulated by the established in the required certificates. Training and certification is a vital indicator for any tourist development center, it is applicable to the situation of Tequisquiapan, but does not comply with the request.

The next indicator is accessibility, the ease of being able to arrive at the Magic Town. Being a smaller place than the most important destinations in Mexico it is normal to find the situation that only has a route, mainly by land, if you want to arrive by air you must first get to Santiago de Querétaro and then you can Take a direct trip to Tequisquiapan as this does not have an airport, but it does have a bus terminus. The advantage that can be taken is to increase the direct trips from different points of the Republic, although the main tourist-sending cities are already covered. The indicator is applicable to the Magic Town, although not in the form that was originally proposed, and does comply with the characteristics to consider it competitive.

The sixth indicator refers to infrastructure, specifically to lodging and catering establishments that encompass hotels, boutique hotels, hostels, restaurants, coffee shops, among others. The information provided is not up-to-date, but considering it to be valid, Tequisquiapan has a reduced capacity for tourist reception, a capacity below Mexico's great destinations, but proportional to the current demand it has. This indicator is applicable to every tourist place and is a basic to be able to carry out activities of this nature, Tequisquiapan complies according to its current situation.

Regarding the patrimonial and fiscal security indicator, it was found that there is a state and local regulation for fiscal issues in reference to the development of tourism, a situation that is contrary to the preservation of heritage security, however, there is a commitment Tacit by all inhabitants to maintain, care for and preserve it, despite this is clear the need to create a normative that guarantees the responsibility that the population has put on it. This is an indicator applicable to the reality of Tequisquiapan, in which it complies fairly.

The following indicator refers to the promotion, they mention that the campaigns are carried out with the collaboration of SECTUR Querétaro and CPTM, however, the campaigns that are given the most attention are those of the destinations, mainly the destinations and Consolidated, the campaigns of the Magic Towns have a much smaller diffusion, this influences that tourism is not growing and, on the contrary, is going through a period of stagnation and that there are no new markets interested in the new routes and products that they have developed. Every tourist destination and place needs a good promotion, the indicator is applicable to all, Tequisquiapan complies moderately.

In the trade indicator, there is an interesting perspective of Tequisquiapan, since this activity is where an important part of the inhabitants are developed, it is very important that the products offered be elaborated with the elements of the zone and be processed by Local people, this is a sign that there is interest in reaching the model of sustainable tourism. Since commercial activities are presented with variety, representing a clear benefit to the community and strengthening the identity of the Magic Town, it is affirmed that it complies with the indicator, which is favorably applicable.

In the areas of resource management, natural, economic, technological, cultural and, above all, the human factor are mentioned, which makes it possible for the others to have a value and condition that is suitable for tourism. The management of the elements with which they are counted is indispensable, since it is to manage the resources to maximize the benefits with the minimum damage or expense, if not taken in a proper way can suffer significant losses. Therefore, it is an indication that applies both to destinations and to the Magic Towns, each proportionally to its situation, Tequisquiapan complies with a proper management of its resources having as main idea the use of these seeking its preservation, only in the Human factor are deficiencies and it is because of the lack of interest that has been put in their training.

The last indicator is that corresponding to ICTs, Tequisquiapan service providers have been able to take advantage of these advantages, it is a reality that are necessary to compete in the market of any area and have been applied correctly. Although the incidence of tourists is low, the fact that services are provided via the internet and that connectivity is facilitated is a factor that helps to ensure that it is not lost as a relevant and worthy destination. At present, if these technologies are not available, it is similar to not operating so it is an important indicator when indicating the level of competitiveness, in which Tequisquiapan complies.

Of the eleven indicators contemplated in the agenda of Competitiveness Agendas in Tourist Destinations, the Magical Town Tequisquiapan fully complies with five of them, which are tourism, accessibility, infrastructure, commerce and ICTs. It complies in moderation with four of them, the sustainability, the patrimonial and fiscal security, the promotion and the management of resources. It does not meet two indicators, the democratization of productivity and training and certification.

Based on the above analysis, it is concluded that under the ACDT model, the Tequisquiapan Magic Town has numerous opportunities for growth, and factors in which to improve, identifying and acting on them could change the level of competitiveness to compete with destinations of international recognition as it has the potential. The ACDT program considers nine indicators for the measurement of competitiveness, however these are designed for the characteristics of the main tourist destinations of Mexico.

Which are different in their nature and typology to the Magical Towns, despite these contrasts the indicators Which are considered to be applicable to the Tequisquiapan Magic Town, but it is suggested that instead of nine, the implementation of eleven should be considered when dividing the accessibility and infrastructure segments, since accessibility can also be considered elements such as ease of doing Use of their land routes, the cost of transportation, they do present direct trips and of what type they are, while in the infrastructure the viability of the use of the roads, roads and airports is taken.

Similarly, the promotion and trade indicator is suggested to be considered separately its headings as they are focused on two different meanings and each has relevant information to consider.

Thus, it is possible to study the competitiveness of the Magical Town in greater detail in the relevant factors and not generalizing data that can be decisive in the decision making, reaching the eleven indicators proposed.

### **Tequila case, Jal**

The municipality of Tequila, because of its geographical location and social, cultural, denomination of origin and declared by UNESCO, World Heritage, is inserted within a framework with extensive possibilities to develop a series of productive vocations, especially In tourist matters in which private and public institutions are involved, in order that they may be exploited by and by their inhabitants; However, the municipality must continue to cover the allocation of outstanding resources in social, economic and environmental matters.

Meanwhile, the methodology of Conventions in the Field of Resource Reassignment (CCRR) was executed, based on seven dimensions of tourism performance, and according to the contribution, a pair of dimensions was added, in which its objective was based on topics According to the adaptation of the Magic Towns program, as mentioned above, gathering information can lay the foundations for developing the potential of tourism, thus representing an opportunity for local development.

These sub-indices are listed below: Sub index 1. Determinants of tourist development. It takes into account the components: characteristics of the destination (infrastructure, general services, environment), offer (Recreational equipment and tourist services), promotion and tourist destination vocation. It identifies the tourist attractions, as well as other necessary elements that incentivate the tourist displacement.

Sub-index 2. Strategic planning. It is understood by the scope of the actions of strategic planning at state and municipal level; the objectives, strategies, lines of action and orientation of the administrative process are verified to achieve the goals set by the different institutions for the tourist development of competitiveness in the destination.

Sub-index 3. Sustainability. It is that habitual or social development, which seeks a homogeneity and coherence between the economic growth of the population, as well as the existing social classes and natural resources.

Sub-index 4. CCRR knowledge and impact. It refers to the appropriate degree of management in which the projects of the destination function properly in terms of execution and administration, by local governments under the normative guidelines for their planning and implementation.

Sub-index 5. Business development. It identifies the contribution that private institutions have made to the development of the tourist sector in the locality.

Sub index 6. Investment. Amount of money allocated to the Magic Towns program and its trust in the destination.

Subscript 7. Satisfaction of visitors. It shows the way in which the destination is able to satisfy the value proposition offered to the visitors, incorporating for it several dimensions as the traditional ones of valuation on the perception of the quality of the attractions, the accessibility and the services and also incorporating, the Elements that shape the new approach to the economy of experiences, and whether the destination has instruments that allow it to measure the degree of satisfaction of tourists.

Sub index 8. Involvement of entrepreneurs in tourism. It considers elements that allow to understand the result of the processes of participation of the private sector. The processes and the necessary but not sufficient condition to guarantee the tourist success in order to collaboratively combine the actions promoted from other sectors of society. It incorporates elements from the private sector, and civil society; Involvement of society in the planning and operation of initiatives; Transparency and accountability; Conformation of collaborative networks.

Sub index 9. Security. It implies the perspective of an additional and inherent theme of the tourist reality of the country. It largely functions as a matter of perception that is directly related to travel decisions to many current resorts and that often see it as a transcendental factor for the development of tourism in Mexico.

It is essential to have the knowledge of the conditions in which a tourist destination is, thanks to the application of the classified sub-indexes, which are: Determinants of tourism development, Strategic planning, sustainability, business development, investment and security; It is worth mentioning that they are the basis for the implementation of a base competitiveness index for a program of magical towns, since if these points are followed up and there is a Sectoral Fund, which regulates capitalization to the magic town. In the case of Tequila, just because it is a designation of origin is one of the destinations, that the investment will prosper to be duplicated, if the monitoring is given and the path of access to the destination is modified, only what is due to Implement training in the municipality, for the opportunity to be one of the competitive and sustainable magical Towns.

According to the factors that would generate tourism development in the destination of Tequila, emphasis is given to the access route to the Magic Town, due to the lack of signage, diversions and local transport of quality, make accessibility a factor Raise and carry out, with the support of the State and Federal Government for some SME loans, which will improve the conditions of access to the Municipality 70% is included in the other hand, the evaluation of the destination is inefficient, because of the capital management of the destination, 70% is included to private companies, as far as the social community, implement actions that are only at their possibilities, and Do not Look for ways to transcend and expand into other markets.

The construction of Strategic Planning at the destination is based on the Tourism Development Program of the Tequila Route, which was elaborated by FONATUR, as well as the appointment by UNESCO of the Agavero Landscape as a world heritage Site. Innovation and technology today are based on the applications that destiny has created for its consumption and benefit, as well as its appointment, to be one of the most competitive magical towns.

In terms of sustainability, the existence of several civil associations, working on environmental, cultural and social issues, highlighting the José Cuervo Foundation and the Tequila Route, has demonstrated a development in the expansion of private companies, but the balance of Economy in the municipality, does not reflect that there is sustainable economy in the destination, reason why the actors of the municipality, require to foment the investment of microenterprises for his benefit in the town.

The CCRR operation has not been the best reaction, since many of the interviewed actors did not know that the projects are supported by this type of Sectoral Fund, which has involved a proposal, but without proper monitoring.

The entrepreneurial development within the Magical Town of Tequila is notable for the fact that since it was named Magic Town, the increase in investment by private companies has benefited, as well as hotels and restaurants, in addition to 24 Tequilas, have conditioned facilities to receive tourists, highlighting Mundo Cuervo, Cofradía and Herradura in Amatitlán. As well as the increase of the average expenditure of the tourist and the stay that realizes.

In the evaluation of visitor satisfaction, it is used under a system in which it is the "Survey of the profile of the visitor to the main tourist of Jalisco" and it is compiled by the Secretary of Tourism of Jalisco. Based on Security, the destination does not have problems of insecurity, in which it has prospered by the municipality, creating trainings to the elements of security and assistance to the tourist.

In general terms, it is worth mentioning that the destination of Tequila has Guadalajara as its main market, where it has become a place for cabins, rest and activities linked to nature. The Magic Town Committee is in coordination with businessmen, Municipality and State, and the works have changed the appearance to the center area of the town. This has influenced a large number of companies that offer activities such as hiking, horseback riding, mountain biking, quad biking, zip line, parapet, boats and everything related to nature.

The Magic Towns program can be transformed into a development opportunity in which local actors have the possibility to generate their own benefit in an endogenous way and according to their needs and abilities. However, this program, as well as generating favorable processes for a better quality of life and social welfare, can also create phenomena that detract from the social, political, economic, cultural and environmental structure of the localities or places where the program is exercised. Thus, the success or failure of such a program in a certain locality will depend on the level of citizen participation, the agreements that the municipal authorities carry out with society, the channels of communication proposed and, Terms of sustainable development.

In the case of tourism activity in Tequila, based on the results of consultation, it is argued that the activity is considered important, which affirms that it occupies a relevant position for the population and may present an opportunity for local development. However, despite the fact that Tequila has a number of endemic resources, both natural and cultural, potentially exploitable for tourism purposes, most of the interviewees consider that there is still a lack of actions of various types to be made so that the destination is considered a Sustainable tourism destination.

The interviewed actors consider that the tourism activity in Tequila, exercised through the Magic Towns program is an activity that only benefits a small percentage of people, which integrates merchants and authorities and that the benefits of tourism are far from reaching To the popular masses of the locality; Causing with it, phenomena of discontent and dissociation. Therefore, tourism, exercised with responsibility and social sense, can represent an opportunity for local development, which encourages and encourages the improvement of the quality of life of the inhabitants; at the same time, if the necessary consensus is not generated among the actors involved, risks can be generated for the same receiving population, such as the so-called Magic Towns.

Although the tourist activity in Tequila is currently fluid, most of the actors consider that the entrepreneurship activity of new micro, small and medium enterprises can contribute to the economic and social development of the place. While it is true that Tequila can be considered an article of consumption, they can also promote economic recovery and reinforcement of values, for which it would be necessary to reverse the policy until now, i.e., tourism is put at the service of localities Recipients, for the benefit of the local population first and after the other actors.

The practice of sustainable tourism in the local context is a way of promoting development in this space, it can represent an upward and continuous change with that of transforming the environment with the purpose of development which, necessarily, is accompanied by continuous economic growth equitable, Stable and participatory as the basis and result of the changes that enhance social solidarity, justice, quality of life and rational use of local resources scarce local.

Local development does not depend only on economic or external factors, but also implies strengthening the values of identity and territorial belonging, fostering the spirit of citizenship and cooperation, since only in this way is the identity of the locality or of the territory of Therefore, it will be difficult to promote a process of local development if we start from a citizen's indifference towards local resources and potentialities.

It is worth mentioning that despite the strengths, there are weaknesses in the destination, which is the insufficient diversity of tourist products to offer the visitor, even though there are different tourist attractions, in some cases, it has not been possible to develop Sites or activities that promote the increase in the stay and average spending of visitors and convert them from visitors to tourists.

However, among the various elements that have already been analyzed in the vocation component, gastronomy is of great importance and very rich in the magical town, as well as its particular food, which in this case is the virote, which contributes to give it Potential to the destination.

According to the model of tourism performance, indicates that the attractions have really low ratings and are in an area that becomes an opportunity for improvement to impact satisfaction in the magic town. Regarding lodging, food and excursions, these are highly evaluated in terms of performance, i.e. visitors are satisfied with the service, however do not generate the appropriate impact on satisfaction and this can be explained because perhaps the experiences or experiences that lived in the destination. This is in agreement with the deficiencies in some services of support for the tourist development, between the services mentioned are bureaux de change, automatic tellers, cellular telephones and parking lots; All relevant aspects to ensure that the stay at the destination by the visitor is as satisfactory as possible.

The experience in the magic town is the fundamental element to impact the tourist performance. Visitors consider that Tequila is efficient as a magical town, which is explained in the experience that was lived.

On the other hand, in the magic town is not clear the direct instance that should be in charge of the administration of the CCRR. There is a lack of competition on the part of the directors of tourism, to know and to exercise the resources, and even the registration mechanisms still are not realized in computer systems.

Information on the effects of tourism and the use of the resources of the CCRR, it is noticed that the information is not systematized and sometimes causes the municipal presidents to ignore it and even the instances or personnel that they designate for the management of the tourism.

The choice and project decisions are directly led by the magical towns' committee, in addition the people of the community are closer in decision making.

However, in this case the committee does not work efficiently, since it is important to take care of the involvement of society and service providers in the decision and planning of projects carried out with the resources of the CCRR, since in this case decisions are made by the private sector and rarely consider municipal authorities.

The perception of insecurity is considered safe in the magic town. The main area of opportunity of the magic town, turns out to be the urbanization of its urban centers, since there is no use of the resources in the tourist activity.

According to the implementation of the municipal regulatory framework, it is necessary to allow the establishment of an objective image for the destination, to ensure a moderately acceptable performance, and a comprehensive management of resources.

The municipal urban development plan or program (PMDU), the municipal tourism development plan and the social development sector program, which will contain the growth of the urban spot, guide tourism development and the use of land. It will ensure that the consumption and distribution of goods and services will be within the limits of residence of the destination and its environment.

The integration of sustainable tourism committees is needed to promote and ensure the integration of a system of indicators, comprehensible for the whole community, to assist in the monitoring of changes, the implementation of tourism activities, the maintenance of Environmental services and not only in the capacity to provide services or installed infrastructure, in addition to actions to achieve environmental certifications (Municipality Clean, Certificate of environmental compliance, clean freshwater natural spa programs, others).

The development of tourist products taking advantage of the cultural and natural attractions of the magic town but also of the tourist sites nearby. They must be regulated by the municipality, magical town's committee and service providers, who must work in coordination to detect and correct deficiencies in tourist support services.

More promotion and publicity is needed at national and international level, consolidating the magic Towns program as one of the most important, using traditional media and the great penetration and influence of the Internet and social networks today. In which the design a plan of promotion and commercialization that includes actions destined to improve the image of the destiny and that promotes that it is destiny safe. The localities with the appointment of magic town, require the necessary attributes to generate tourist flows as they represent new and different alternatives for visitors and that the use of their tourism resources and uniqueness can be detonators of development in the localities.

### **Loreto case, BCS**

In order to know the degree of competitiveness of the destination when compared to the rest of the Magical Towns, certain indicators were selected that were considered primordial for the good development of the tourist activity according to the methodology of the World Economic Forum, "The Travel & Tourism Competitiveness Report 2015 "in the destination, these are: Infrastructure of tourist services, Land and port infrastructure, Aerial connectivity, Environmental sustainability, Information and Communication Technology (ICT) preparation, Human Resources Training, Tourism Vocation .

Loreto, BCS is a destination with high potential for the development of the tourist industry due to its natural, cultural and of course gastronomic wealth. However there are still things to improve. As in all the destinies of the world, the lack of synergy and holism between the key actors related to the sector lead to the stagnation and retraction of these.

As already mentioned, the lack of efficiency of the tourist products and services that the destination offers directly affects the money income of the Magic Town in general. According to an evaluation carried out in previous years by the Universidad Autónoma de Baja California Sur to the companies providing tourism products and services in the destination, overall they obtained an evaluation of 8.7 in efficiency, a good number, but not the one that they are waiting.

As far as ICTs are concerned, they are a good tool for the dissemination and promotion of the destination, although if it is used in the best possible way it does not generate any benefit to the tourist activity, that is why fate must implement better strategies for dissemination and marketing, with the aim of having an increase in the flow of tourists throughout the year and not only in high season, and is possible due to the climate that the destination has.

The tourist vocation is an important part for the development of tourist activity since in this index is where it is reflected the synergy that should be present to generate an optimum tourist use of the territory denude the activity is developed; Loreto has a weak tourist vocation since it is not sought the development of this one.

Sustainability, this index is properly applicable since all involved seek to have an appropriate participation to avoid the loss of resources that the destination has with regulatory standards for the use of them. Innovation and technology are indicators that favor the competitiveness of the destination, as these tourism companies offer quality services and not only satisfy a need, a clear example is the spring Villa del Palmar and used to perform aquatic activities , This as part of the strategies for the increase of tourist demand.

When talking about the port and air infrastructure the destination has a certain limitation since they are not efficient because they are very few flights and only one cruise arrives to the year, one must look for to have a greater offer of services through strategic alliances that contribute to the elimination of the Limiting. A company cannot handle itself, it needs a specialized human resource, Loreto has very few people trained for the development of tourism, in this index is not competitive, it should be a general training for a certain period regardless of hierarchy.

In theory Loreto to be named as Magic Town should have benefits, but the reality is another; to generate competitive advantages fate must be engaged in the constant improvement of the competitiveness indexes to be a competitive destination, all is a process and every process has its time. The lack of support from the government towards the destination is the main generator of retreat, since the destination is very poor and there are no means to generate those missing resources for the development of tourism activity properly.

If the government followed up on what was agreed during the process of naming Loreto as Magic Town, the situation of destiny would be much better; Outside the circuit where tourists congregate to appreciate the tourist attractions, there is hunger and poverty that surrounds the local community since the little or much benefit that Loreto has had since its appointment as a magical town does not reach them; The benefit has only been for the people who have power through the authority that was given to them.

The general problem of all Magic Towns is that the trust assigned by FONATUR is not used properly and is sometimes not even used. In trying to obtain information on this subject, only one of the key actors was aware of the amount that Loreto had to cover with the characteristics that a Magic Town should have, that is, if interested people do not get much less involved it will get progress.

As is evident at the end of the analysis of the three cases presented, it is necessary to observe the particularities of each destination (in this case, destinations with the appointment of the Magic Towns Program), avoiding falling into generalization by applying any of the suggested methodologies if Want to measure their competitiveness. It is necessary to be extremely careful when applying methodologies to measure competitiveness in tourist destinations, as, as can be seen in the case studies presented; It should not be forgotten that if we want to measure, compare and evaluate competitiveness in different destinations, we must consider the necessary adjustments to the models to minimize errors in measurement and comparison as well as discrepancies in data that are not obtainable, obsolete or irrelevant.



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**Elements and indicators for swot analysis**

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## Abstract

The anteroom of this chapter begins with an analysis, which is carried out in three stages. As a result of this analysis, 2610 indicators were obtained from 30 institutions or bodies and 496 from different sources, including the 44 Competitiveness Agendas (CAs) of the priority tourist destinations (PTD) and the 83 Competitive Agendas of the Magical Towns (MV) . The representation of these indicators is structured in a matrix where each one of the indicators is grouped in the new components denominated like this, by the Secretary of Tourism (Sectur). The matrix presents a classification with a hierarchical depth of component, subcomponent, factor, subfactor and indicator. This classification is due to the nature of the indicator and the sources that feed it. In principle, it is composed of eight components and the project team 242853 proposes the ninth called Environment.

In this chapter the matrix of the 2610 indicators is taken up to make a reduction, through an affinity analysis or correspondence of SWOT of the AC of tourist destinations and magical towns and 2610 indicators. This allows us to construct the elements for the SWOT analysis, which are related to the matrix of indicators. The result of this analysis reveals a reduction of 65% of indicators, that is 906 indicators, which allow observing the level of development, competitiveness and sustainability of priority tourist destinations and magical towns. It is important to mention that these indicators are available in priority tourist destinations, only in Magical Towns or both.

## Introduction

SWOT analysis is an analytical tool for defining positive internal factors through strengths, negative internal factors in weaknesses, positive external factors with opportunities, and negative external factors with the threats of DTP and PM (Ciarmiello Andrea, 2016). In this paper, the proposed elements are presented, so that a SWOT analysis can be carried out in the future, allowing for the adoption of measures and decisions in Priority Tourist Destinations (DTP). These elements are obtained from the classification of 2610 indicators and the identification of important factors that are found in the Competitiveness Agendas (CAs) and PMs. In addition to identifying those factors that could make the destination competitive and sustainable. This analysis tool, allows more debugging the large number of indicators to 906 indicators.

## Methodology

It is necessary to obtain a set of indicators from the universe of 2610 indicators classified in a hierarchy of component, subcomponent, factor, subfactor and indicator, which are intended to come in the work called Compendium of tourist indicators of priority tourist destinations And magical Towns. In order to make the decrease, without affecting the components of the tourism system, a study on the SWOT analysis of the CAs of the DTP and PM is carried out taking into account the competitiveness and tourist sustainability and the classification of 2610 indicators.

This is achieved with the J-K affinity diagram, a technique developed by the anthropologist (Kawakita Jiro) and considered one of the seven management and planning tools (Vilar Barrio José Francisco, 1997), (Guillermina, 2012). The use of this tool in the present work has the purpose of reducing and selecting indicators, a considerable number of information relevant to the DGGD, which is useful in decision making (FME, 2013).

The stages that are used to elaborate the affinity diagram are the following, taken from (Vilar Barrio José Francisco, 1997):

1. Gather the team (people) who should carry out this work
2. Brainstorm the problem

3. Record ideas
4. Group ideas and create headers
5. Transcribing the affinity diagram

### Gather the team

For the purpose of this paper, a group with knowledge in Business Management and Tourism is assembled, who carry out the brainstorming with regard to the analysis of the CAF's SWOT. Table 1 presents the strengths, weaknesses, opportunities and threats of the Morelia CA, which are used to show an example of the construction of the affinity diagram for Project 242853.

**Table 3** SWOT Indicators Tourist Offer. Competitive Agendas of Tourist Destinations, December 2013 Morelia, Michoacán, p. 75

<b>Strengths</b>
<ol style="list-style-type: none"> <li>1. Morelia counts with the declaration of City Patrimony of the Humanity since the year 1991.</li> <li>2. It has 1,670 monuments and historical sites and cultural activities.</li> <li>3. It offers diversified lodging and sufficient to attend the visit of tourists.</li> <li>4. It has boutique hotels with high standards of quality, architecture and service.</li> <li>5. Important cultural agenda of events that they contemplate fairs, festivals, and festivities International, state and local.</li> <li>6. Destination of greater influx of tourists and pours of the state.</li> </ol>
<b>Opportunities</b>
<ol style="list-style-type: none"> <li>1. Improve and / or create infrastructure for tourism businesses, congresses and conventions countries.</li> <li>2. Attraction of events, congresses and conventions thematic (medical, social, artistic, academics).</li> <li>3. Reversing Morelia's position in the media national and international: negative image versus single product.</li> <li>4. Morelia has natural and cultural resources in their holdings that can be incorporated into the offer tourism. E.g. crafts of Capula and ecotourism in Umécuaro).</li> </ol>
<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. The number of food establishments and Registered beverages has been decreasing in the last decade.</li> <li>2. Museums have important exhibition but its presentation is not attractive and is accessible in accordance with the needs of the tourist.</li> <li>3. The museographic offer is limited.</li> <li>4. Operate alleged tour guides of non-certified tourists That encourage unfair competition to the detriment of the quality and satisfaction of the tourist.</li> <li>5. Number of limited cultural festivals and events Regarding the capacity of the destination and Scheduled in the second half of the year, Primarily.</li> <li>6. Limited thematization of the tourist routes in which Participates: Rout de Morelos, Hidalgo Centro, Don Basque and Health.</li> </ol>
<b>Threats</b>
<ol style="list-style-type: none"> <li>1. High diversification of supply and activities tourist destinations such as Querétaro, San Miguel de Allende, Guanajuato, Puebla and others cities that are direct competition of Morelia.</li> <li>2. Extortion to tourist establishments.</li> <li>3. Informal trade.</li> <li>4. Insufficient resources for investment and development of the tourist offer.</li> <li>5. Unattractive destination for attracting foreign investments.</li> <li>6. Proliferation of non-certified tourist guides.</li> </ol>

### Brainstorm the problem

Figure 3 shows the strengths of the CA of Morelia, where the important aspects of each fort are emphasized. These aspects are associated with a name, through a brainstorm. This process is also carried out with the weaknesses, opportunities and threats that are present in the SWOT.

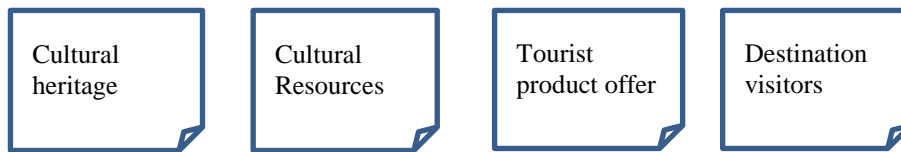
**Figure 3** Brainstorm of the strengths present in the CA's

Rain of ideas	
Strengths	
Morelia It has been declared a <u>World Heritage City</u> since 1991. ←	Cultural heritage
It has 1,670 <u>monuments and historical and cultural sites</u> . ←	Natural resources
It has a diversified and sufficient <u>lodging to attend</u> the visit of tourists. ←	Tourist product offer
It has <u>boutique hotels</u> with high standards of quality, architecture and service. ←	
Important cultural agenda of events that contemplate fairs, <u>festivals and festivals</u> of international, state and local level. ←	Natural resources
Destination of greater <u>tourist influx</u> and economic pumping of the state. ←	Destination visitors

**Record ideas**

In Figure 3.1, six fortresses are presented, for each one of them, the information that is identified as fortress of destiny is emphasized, and it is given a name through the brainstorming; Which are recorded on ballot papers. In figure 2, some ideas are presented, which for the object of study are called SWOT elements, because they are a fundamental resource for a SWOT analysis later with the indicators that result from the universe of the 2610. That is, in relation to The classification of the 2610 indicators and the natural grouping of the identifiers, four elements are obtained: 1) Tourism products offer, 2) Cultural heritage, 3) Infrastructure of events and 4) Infrastructure of services. As a result, 80 elements are obtained.

**Figure 3.1** Ballots with ideas



**Group the cards and create the header cards**

The next step is to collect the ballots and group the ideas into cards. For this, the following parts are used:

- The ballots shown in figure 3.2
- Classification of the matrix of the 2610 indicators. Figure 3.2 shows an example of the depth of stratification in the indicator matrix and the tourist demand component.

**Figure 3.2** Stratification of the matrix of indicators

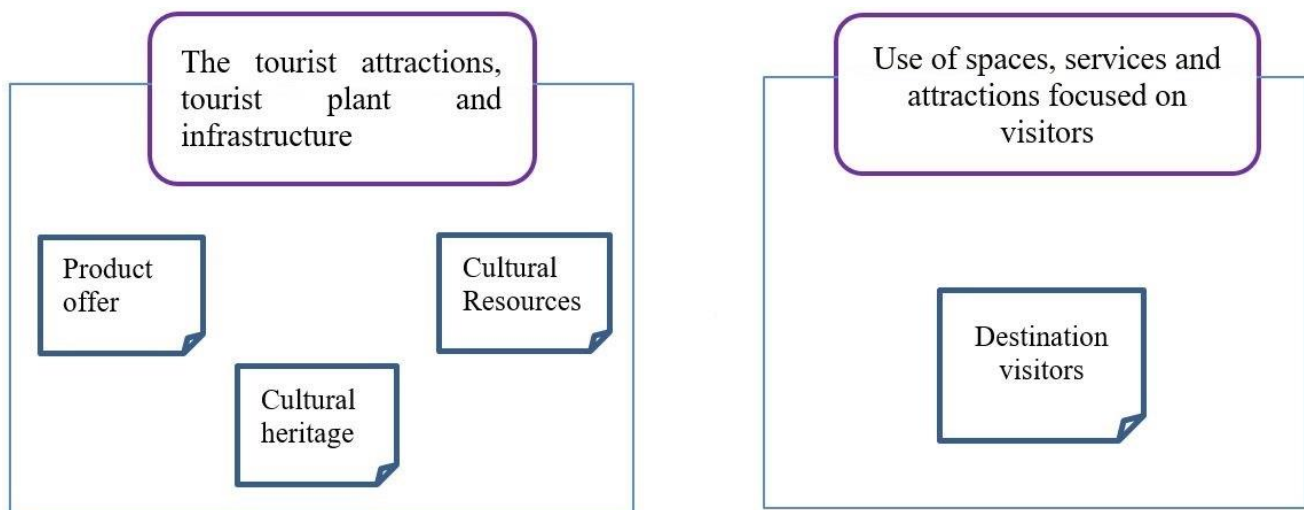
**Tourist demand (component)**

- Tourist flow (subcomponent)
  - Tourist influx (factor)
    - Tourist competition (subfactor)
      - Indicators
- Indicators related to stratification. In figure 3.3, some indicators of tourist demand are present

**Figure 3.3** Indicators related to Tourism Concurrence

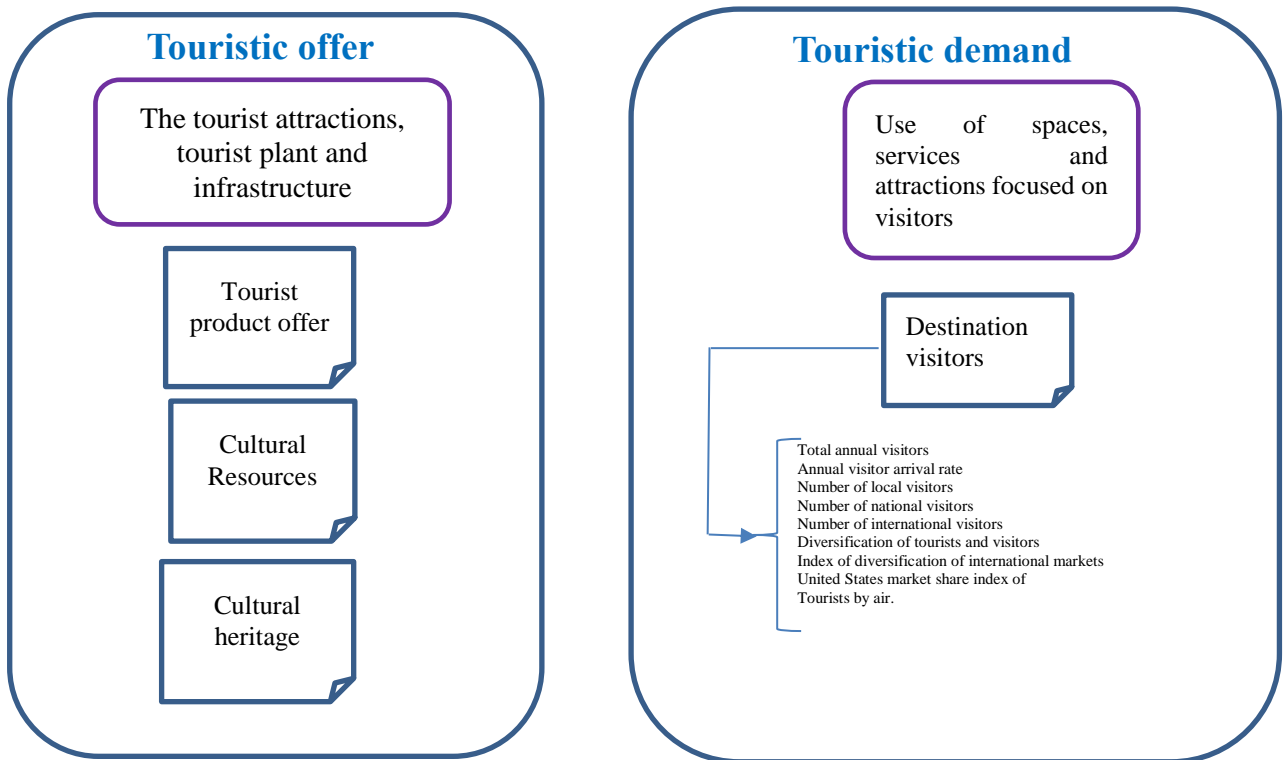
Total annual visitors
Annual visitor arrival rate
Number of local visitors
Number of national visitors
Number of international visitors
Diversification of tourists and visitors
Index of diversification of international markets
United States market share index of Tourists by air.

In figure 3.4, the cards are presented, where the ideas are grouped according to the object of study. The ideas related to what the DTP and PM offer, are grouped in the figure on the left side; the idea that refers to visitors is related to the figure on the right side.

**Figure 3.4** Grouping of ideas

Then, the headers are obtained by relating the stratification of the matrix of indicators and the cards. In the figure, it is observed that the card on the left side is associated with the *tourist offer* component, because the ideas are grouped in factors that the destination has and are attractive for the visitor. On the right side of the figure, visitors are associated with the *tourism demand* component; in addition to presenting a natural relationship with the indicators that refer to visitor.

Figure 3.5 Header card



**Transcribing the affinity diagram**

An affinity diagram is presented, showing how visitors are associated with the tourist demand component and the classification of the matrix until it is linked to the indicators.

Figure 3.6 Affinity diagram



Observaciones	Factor	Subfactor	Indicador	Indicador de referencia	Observaciones
	Tasa de asistencia anual		TASA DE ASISTENCIA ANUAL	INDICADOR	
	Tasa de llegada a destino anual		TASA DE LLEGADA A DESTINO ANUAL	INDICADOR	
	Indice de asistencia nacional		INDICE DE ASISTENCIA NACIONAL	INDICADOR	
	Indice de asistencia internacional		INDICE DE ASISTENCIA INTERNACIONAL	INDICADOR	
	Indice de diversificación de turistas y visitantes		INDICE DE DIVERSIFICACIÓN DE TURISTAS Y VISITANTES	INDICADOR	
	Indice de diversificación de mercados internacionales		INDICE DE DIVERSIFICACIÓN DE MERCADOS INTERNACIONALES	INDICADOR	
	Indice de participación en el mercado de Estados Unidos de turistas por avión		INDICE DE PARTICIPACIÓN EN EL MERCADO DE ESTADOS UNIDOS DE TURISTAS POR AVIÓN	INDICADOR	

With this affinity analysis, we arrive at a new stratification that includes the tourist component, subcomponent, factor and the indicators related to its element for the SWOT analysis. In table 3.1, the anterior stratification is presented on the left side, and the new classification is shown on the right side.

**Table 3.1** Stratification of indicators

Previous Classification	New Classification
<ul style="list-style-type: none"> <li>• <b>Component</b> <ul style="list-style-type: none"> <li>• <b>Subcomponent</b> (eg Tourism Vocation)</li> <li>• <b>Factor</b> (eg Tourist Resources)</li> <li>• <b>Subfactor</b> (eg Tourist Inventory)</li> <li>• <b>Indicator</b> (eg Existence of Tourist Inventory)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Component</b> <ul style="list-style-type: none"> <li>• <b>Subcomponent</b> (eg Tourism Vocation) <b>Factor</b> (eg Tourist Resources)</li> <li>• <b>Indicator</b> (Eg Existence of Tourist Inventory)</li> </ul> </li> </ul>

## Development

80 important elements for the SWOT analysis are constructed distributed in the nine tourist components and fed by their corresponding indicators. These elements aligned with the tourist indicators, allow to observe important characteristics of the destinations. Below are some elements with their justification of the components Tourist Offer and Tourist Demand.

- **Component tourist offer**

**Offer of tourist products.** Serving the alignment in axis 2 related to Innovation and Competitiveness and Sector 1.1.2, 1.1.3, 1.2.3 and PND-O.E.4.11.2.LA2.

**Protected natural areas.** "Are an instrument of public policy, created with the purpose of ensuring the protection of a natural space whose environmental characteristics have not been significantly altered by human activity" (Monroy Ojeda).

**Natural heritage.** The National Commission of Natural Protected Areas (CONANP) considers that "it is constituted by natural monuments (biological physical formations or groups of these), with an exceptional universal value from the aesthetic or scientific point of view. In addition to the geological and physiographic formations, natural sites and delimited areas, which are the habitat of endangered species of flora and fauna, which have an outstanding universal value from the point of view of science, conservation, or Natural beauty "(CONANP).

**Mixed heritage.** It covers partially or totally the concepts of Cultural and Natural Heritage. (CONANP).

**Cultural heritage.** According to Rafael Tovar and Teresa are "material goods with a particular meaning or value of archaeological, historical or artistic type. It also covers languages, music, customs, expressions of popular cultures, traditions, artisan practices, intellectual, film and photographic collections among other cultural manifestations "(Teresa, December 1994 to January 1995), (Ávila Ortiz, 2000 ).

**Cultural resources.** The 2015 Travel and Tourism Competitiveness Report via WEF positions Mexico 30th out of 141 countries, highlighting the country's natural and cultural resources (Staff, 2015).

**Natural resources.** Idem.



**Tourist perception.** In this element, are grouped the indicators that measure the idea or appreciation of the tourist in the destination.

**Service infrastructure.** It refers to the infrastructure that the destination has in the services of lodging and accommodation, food and drink, recreation, types of transport, services of sun and beach and gastronomy.

- **Tourist demand component**

**Visitors of the destination.** "It is related to the number of people traveling to a main destination other than where it resides, for a duration of less than one year, whether for leisure, business or other personal reasons. UNWTO placed Mexico in 10th place in terms of international tourist arrivals "(ONWTO, 2017).

**The reason of the visit.** The WTO defines it as "the motive without which the journey would not have taken place" (WTO, 2005-2007).

**Transportation used to reach the destination.** It refers to the type of transport that the tourist used to reach the place (CAPUFE, 2000-2014).

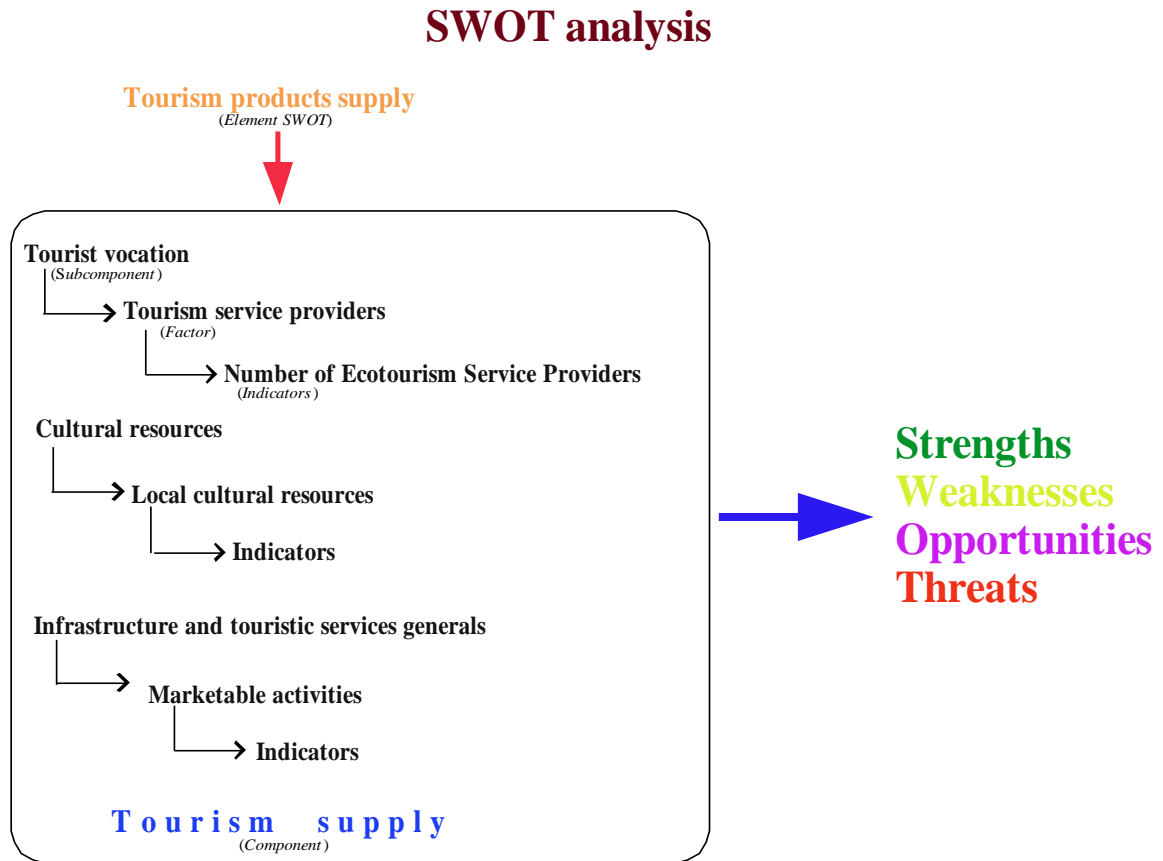
**Average expenditure.** "Tourist spending refers to the amount paid for the acquisition of goods and services of consumption, and of valuable objects, for own use or to give away, during the tourist trips and for the same ones" (OMT, 2005-2007).

**Satisfaction of visitors.** Knowing the profile of the tourist is useful for the tourism sector because it provides elements for the best planning and development of products and specialized services to meet the needs of the visiting population. National Institute of Statistics and Geography (INEGI) Integral Analysis of Tourism (DATATUR). [Http://www.concanaco.com.mx/wp-content/uploads/2016/boletines/Turismo-Enero-2016.pdf](http://www.concanaco.com.mx/wp-content/uploads/2016/boletines/Turismo-Enero-2016.pdf)

The relationship of the elements that allow the observation of the strengths, weaknesses or opportunities of the DTP and PM with the tourist indicators, allow to observe the general study of tourism in these places, in order to support in the decision making according to the functions Of the Ministry of Tourism, to provide follow-up and attention to destinations with major deficiencies. Figure 1 shows graphically one of the elements, as a result of the SWOT analysis, Tourism product offer, which is identified in the Tourism Offering component, where the relationship with several subcomponents, factors and indicators is observed.

According to the values by indicator and historical data, the evaluation is intended to be carried out as follows: A strength is evaluated with 3 points, a weakness with 1 point, an opportunity with 3 and a threat will have a value of 0.

Figure 3.6 SWOT analysis on tourism components. Own elaboration



Below are the SWOT elements related to the Professionalization and Certification component and the indicators to be used in the evaluation (see table 3.2, table 3.3, table 3.4 and table 3.5). On the left side of the table are the indicators related to the element that corresponds to the SWOT analysis, which are presented on the right side of the table. According to the values that the indicators show, they will be classified in strengths, weaknesses, opportunities and threats.

Table 3.2 Professionalization and certification SWOT elements. Own elaboration

FODA Profesionalización y Certificación				
Indicator name	Strength	Weakness	Opportunity	Threat
Number of public upper secondary educational institutions	Educational offer in the destination of careers in tourism from technical, undergraduate, master's and doctoral levels (SWOT Element)			
Number of privately-owned upper secondary tourism educational institutions				
Number of public upper-level tourism educational institutions				
Number of private higher educational tourism institutions				
Total number of basic education enrollment	Behavior of the education sector (SWOT Element)			
Total number of upper secondary education				
Total number of higher education enrollment				
Total number of graduate students				
Average schooling				
Illiterate population number				

**Table 3.3** Cont ... SWOT Elements of Professionalization and certification. *Own elaboration*

Indicator name	Strength	Weakness	Opportunity	Threat
Total workers in the tourism sector with basic level studies	Staff with a higher education level than the national average(SWOT Element)			
Total number of workers in the tourism sector with higher education				
Total number of workers in the tourism sector with higher education				
Total number of workers in the tourism sector with postgraduate studies				
Percentage of destination staff with tourism education				
Number of tourism culture programs	Tourist culture of inhabitants and tourists (SWOT Element)			
Number of training programs and professionalization for the creation of new companies and MIPyMES				
Number of tourism training programs	Tourism Training Plans (SWOT Element)			
Perception of quality in tourism training plans through a general review of their content				
Number of tourist education institutions				
Training programs to encourage the development of new businesses				
Qualified human resources to serve the tourism sector				
Degree of schooling (Degree of schooling of management positions)	Certified human resources (managerial positions) (SWOT Element)			
Number of workers certification in the tourism sector	Qualified human resources (SWOT Element)			

**Table 3.4** Environmental certifications (SWOT Element)

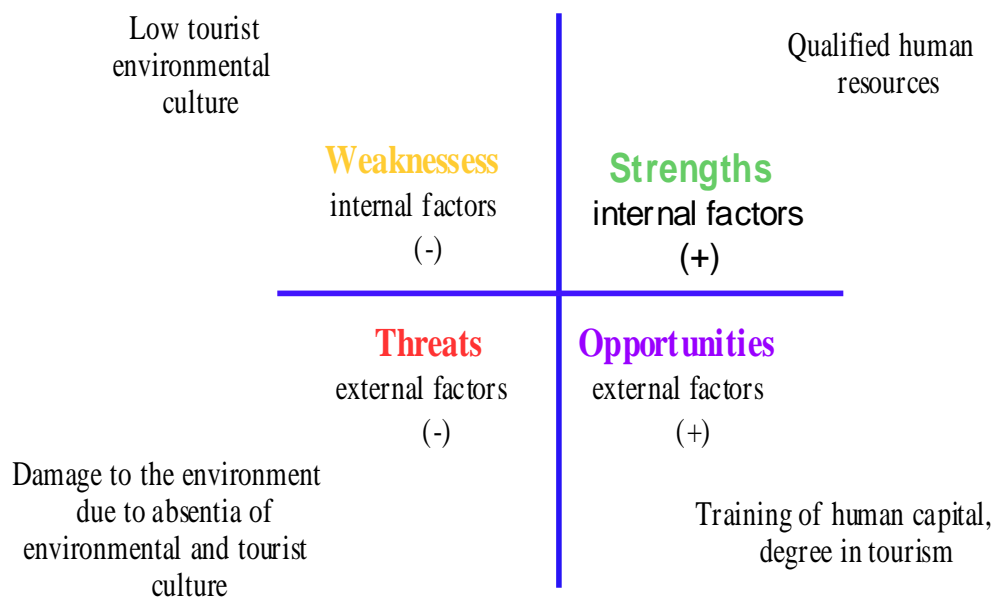
Indicators	Strength	Weakness	Opportunity	Threat
Number of workers with experience from 1 to 12 months	Comprehensive diagnosis that identifies the human resources needs in the tourism sector (SWOT Element)			
Number of workers with experience from 1 to 3 years				
Number of workers with experience of more than 3 years				
Number of workers without tourism studies				
Number of workers with tourism studies				
Number of companies participating in institutional competitiveness programs	Institutions offer the diploma of formation of general guides (SWOT Element)			
Number of certified tour guides	Certified tourist guides (SWOT Element)			
Number of establishments with the mark (H)	Establishments certified with the "H" (SWOT Element)			
Number of establishments in the process of obtaining the badge (H)				
Number of establishments with the mark (M)	Companies certified with the "M" (SWOT Element)			
Number of establishments in process of obtaining the badge (M)				

**Table 3.5** Cont ... SWOT Elements of Professionalization and Certification. Own elaboration

Indicators	Strength	Weakness	Opportunity	Threat
Number of companies that have the Clean Point certification	Environmental certifications (SWOT Element)			
Number of companies in the process of obtaining the Clean Point certification				
Certification programs Beaches in Regla				
Blue Flag Certification				
Earthcheck Certification				
Number of establishments with Green Globe Certificate				
Number of establishments with certificates of environmental quality tourism (PROFEPA) for companies, facilities and equipment				
Certificate of Municipality clean and / or environmental compliance (PROFEPA)				
Sustainable Distinctive "Distinctive S" (SECTUR)				
Total certifications in force				

Threats can be turned into opportunities and red dots are served, which can be political, economic, social or environmental factors that directly affect destiny. For example, some of the external factors arise when the British Foreign Office and the World Health Organization (WHO) issued the Zika virus alert (WHO, 2015) in the states of Nuevo Leon and Chiapas, where In the latter, in San Cristóbal de las Casas there were cases of the virus.

The US government warned its citizens not to travel to Coahuila, Durango, Zacatecas, Aguascalientes, San Luis Potosí, Nuevo León, Tamaulipas, Jalisco, Colima and Nayarit due to insecurity (State); Contaminated beaches according to Cofepri; Hurricanes Alteration or damage to cultural heritage, whether due to vandalism or negligence of an official, among other factors. Figure 3.7 shows an example of strength, weakness, opportunity and threat that can be observed in Professionalization and Certification.

**Figure 3.7** Representation of SWOT in Professionalization and Certification, an example. *Own elaboration*

## Results

A new analysis is carried out and the indicators from 2610 to 906 are reduced. In addition, 80 elements are obtained to find the strengths, weaknesses, opportunities and threats in DTP and PM. A new classification is made with a depth of three levels (subcomponent, factor and indicator) for each of the nine components. Figure 3.8 shows the nine components and the number of indicators associated in numeral and percentage.

**Figure 3.8** Number and percentage of indicators by tourism component. *Own elaboration*

Component	Indicators (#)	Indicators (%)
Tourism supply	425	46.91
Tourism demand	48	5.30
Accesibility	70	7.73
Receiving community	95	10.49
Marketing	64	7.06
Regulatory framework	63	6.95
Professionalization and certification	45	4.97
Security	57	6.29
Environment	39	4.30

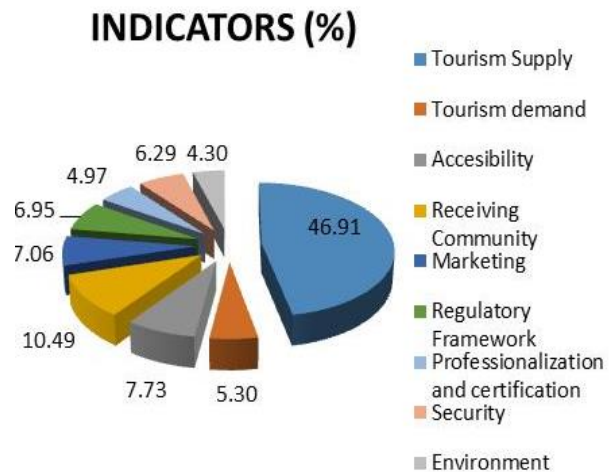


Figure 3.9 represents the 80 SWOT elements that were obtained distributed in each component

**Figure 3.9** Numbers and percentages of SWOT elements. *Own elaboration*

Component	# foda element	% foda element
Tourism supply	9	11.25
Tourism demand	5	6.25
Accesibility	15	18.75
Receiving community	7	8.75
Marketing	7	8.75
Regulatory framework	4	5.00
Professionalization and certification	13	16.25
Security	13	16.25
Environment	7	8.75

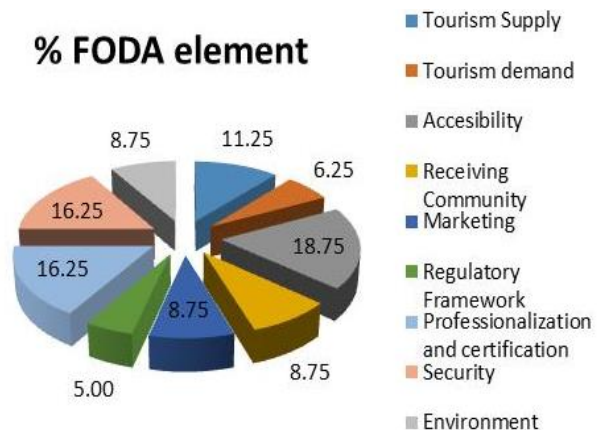
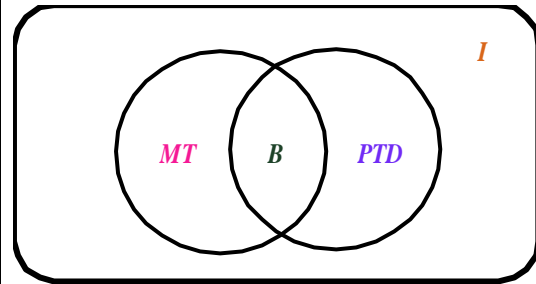


Figure 3.10 shows the 906 indicators (I) where 51 belong to Magic Towns (MT), 26 to priority tourist destinations (PTD) and 829 are in both (B). These sets are denoted as:

$$I = \{MT, PTD, B\}, \quad n(I) = 906 \text{ (Quantity of indicators that has I)}, \quad n(MT) = 51, \quad n(PTD) = 26, \quad n(B) = 829$$

**Figure 3.10** Distribution of indicators by component, MT, PTD and B. Own elaboration

Component	Indicators of Magic Town (MT)	Indicators of Priority Tourist Destinations (PTD)	Indicators of both (B)	Total indicators (I)
Tourism Supply	2	0	423	425
Tourism demand	12	1	35	48
Accessibility	0	1	69	70
Receiving Community	20	2	73	95
Marketing	1	2	61	64
Regulatory Framework	6	1	56	63
Professionalization and certification	1	0	44	45
Security	0	19	38	57
Environment	9	0	30	39
<b>Total indicators (I)</b>	<b>51</b>	<b>26</b>	<b>829</b>	<b>906</b>



## Conclusions

A first approach is presented to carry out a SWOT analysis in the priority tourist destinations and magical towns; Through the SWOT elements obtained from the classification of the 2610 indicators and the SWOT of the Competitiveness Agendas of the tourist destinations and magical towns.

These elements with the associated indicators allow an assessment to be carried out to observe the DTP and PM in terms of the competitiveness, sustainability and degree of development that the destination presents. Thus, as certain delays seen, through the tourist components; Which allows Sector or the competent body to propose solutions and / or provide economic support if they consider it.

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## Process optimization model with PERT diagrams and Petri nets

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## Abstract

The Dirección General de Gestión de Destino de la Secretaría de Turismo (Sectur), carries out the evaluation and monitoring of the Magical Towns in Mexico, through the Magical Towns Program; with the purpose of improving various aspects that are within said program; which evaluates different quantitative and qualitative parameters. There is currently no precedent for a system to assist in the evaluation of the Magical Towns Program. Therefore, a line and sequential model is presented, adopting the planning characteristics of the PERT and simulation diagrams typical of a Petri Net. Objective is to present an improvement in the current process of management of the Magical Towns Program.

## Introduction

The evaluation of the magical Towns can be observed as a system that has a certain number of activities, with a process over time. There is a transition that undergoes several changes, this process can be modeled through a Petri net. However, first, you must obtain the critical activities that Sectur performs for this evaluation. Subsequently, it is presented in a first modeling, which constitutes the subject of research, since it starts from a model of a sequential and linear character to a model of Petri nets.

The Petri net can be a tool for studying systems. The Petri net theory allows to model a system through a Petri net and a mathematical representation of the system. Therefore, the analysis of the Petri net can give important information, about the structure and the dynamic behavior of the system. This information can be used to evaluate the modeling system and suggest improvements or changes. In this way, the Petri net theory is based on the application of Petri nets to the modeling and design of systems.

Petri suggests a more structured and planning-oriented work logic for continuous evaluation of Sectur's processes in the stages of registration, incorporation and permanence in the magical Towns Program. Thus, these processes can be analyzed in a more optimized way, by identifying the logical and temporal sequence in the activities that make up these processes, which are carried out with the purpose of identifying the activities that are critical for the correct completion in time and form thereof. Details are identified to improve, in the current way these activities are carried out, to reduce the current time required for the management of the magical Towns Program.

As a result of this, a more agile process is sought, so that Candidate Localities can have a response to their request in a shorter time and obtain the benefits that the Program can provide them, earlier, through the economic benefit that the Program provides them for the improvement of the Locality; whether for road signs, quality of transport and services, maintenance of drinking water, garbage collection, education, security, among others.

## Methodology

In order to construct the model required by Sectur, the PERT diagrams model is used as a basis, which allows in the first instance to define the activities necessary for each of the processes that the Sectur performs for the management of the magical Towns Program, in such a way, that the logical sequence is reflected. As well as the duration in time that must be assigned to each activity, to comply with the schedule assigned by the General Directorate of Tourist Destinations

Once you have the PERT diagram of each of the processes, where each activity and its elements are identified, a new model based on the characteristics of a Petri net is transformed. This, with the aim of improving the proposed model, adding the advantages offered by the Petri net model for process evaluation.

In this way, it is possible to observe the evolution in each of the stages in which there is a

Candidate Place in the process of Registration and Incorporation, or, a Magical Town in the processes of permanence. In addition to identifying possible outcome events, by failing to comply with an activity (transition in a Petri net), you have the possibility to enter a return event as long as you still have enough time, or end in a completion event .

That is, the candidate city is not approved or that the magical Town has no possibility of revalidating its title. Next, we describe the Pert diagram and the Petri net (Martino, 1982), (Montaño, 1972).

## **PERT Diagram**

The elements and characteristics of a Pert diagram are stated below:

- **Activities Network**, Is the graphic representation of activities with their events, sequences, interrelations and the critical path. Not only is it called a critical path to the method, but also to the series of activities counted from the initiation of the project to its completion; which, do not have flexibility in its execution time, so any delay that suffered any of the activities of the series would cause a delay in the whole project. You can also target the critical path, such as the series of activities that indicates the total duration of the project. Each activity is represented by an arrow that starts in one event and ends in another.
- **Event**, is the moment of initiation or termination of an activity. It is determined in a variable time between the earliest and the latest possible, initiation or termination. Events are also known as nodes. The initial event is denoted by  $i$  and the final event with  $j$ . The final event of an activity is the initial event of the next activity.
- **Arrows**, are drawn according to the needs and convenience of presentation of the network. They can be horizontal, vertical, ascending, descending curves, straight, broken, among others.
- **Link**, is used in cases where there is a need to indicate that an activity has an interrelationship or continuation with another, with a dotted line, which has a duration of zero. Several activities can end in an event or start from the same event.

Pert network has bans, which should be avoided, such as: Two activities, which use the same start and end event; Activities that do not start in one event and end in another event; And that there are loose events.

**Matrix of Elasticity**. Refers to the probabilities of delay or advancement of work activities.

First, the slacks are calculated, which provide the possibility of delaying an activity without consequences for other jobs.

**Slack** is the freedom that has an activity to lengthen its execution time without affecting other activities. There are three kinds of slack:

- Total slack, where it is time delay, does not affect the completion of the project.
- Free play, where the delay time does not change the completion of the process.
- Independent play, where time does not affect the termination of previous activities, nor the initiation of subsequent activities.

Actors in the project are related to the gaps, as follows: The project manager, is related to total slack; the head of execution of a process with free play; And the coordinator of the project work with the independent play.

## PETRI Net

Petri net is a modeling tool, which can be applied in systems to describe system information, which presents asynchronous, distributed, parallel, non-deterministic and / or stochastic concurrences. Petri nets can be applied in software development.

Definition 1. A Petri net is a particular type of directed graph with two types of nodes (places and transitions). It is denoted by an algebraic structure  $PN = (P, T, I, O)$  where:

$P = p_1, p_2, \dots, p_m$ , represents the set of places,

$T = t_1, t_2, \dots, t_n$  the set of transitions.

$I: P \times T \rightarrow N$ , The entry function, in which the transition entry points are specified, with  $N = 1, 2 \dots n$  and

$O: P \times T \rightarrow N$  The output function of the transition with  $N = 1, 2 \dots n$

Besides  $P \cap T = \emptyset$ .

Places are represented as circles and transitions with bars or boxes. An arc directed from a place  $p$  to a transition  $t$  defines an input of said transition. A directed arc of a transition  $t$  to a location  $p$  defines the output of the transition. Sometimes it is necessary to place weight values at the arcs and is denoted as  $w(p, t)$ , where  $w$  is the function:

$$w: (P \times T) \cup (T \times P) \rightarrow N.$$

When an arc has not indicated its weight value, by default, it is taken to value 1. Definition 2. A mark of a Petri net is a function  $m: P \rightarrow N$ , which assigns to each place  $p \in P$  a number of tokens. The presence or absence of tokens indicates the state of a place, and the place mark represents the availability of a resource, or the occurrence of operations. The mark assigns to each site a non-negative integer. Graphically put  $k$  points in a place  $p$ , if it has associated  $k$  tokens. A mark is denoted by  $M$ , which is an  $m$  vector where  $m$  is the total number of places. The  $p$ -th component of  $M$ , denoted by  $M(p)$ , is the number of tokens in the  $p$ -position. When modeling systems, two fundamental concepts are taken into account: conditions and events (which are generated from the conditions). Petri nets represent conditions as places and events as transitions. A transition (event) has a number of input and output locations, which represent the preconditions and the subsequent conditions of the event, respectively.

The behavior of many systems can be described in terms of the states of the system and their changes. In Petri networks, to simulate the dynamic behavior of a system, a state or brand of the network changes according to the following transition rules:

1. It is said that a transition  $t$  is enabled, if each place  $p$  of entry of  $t$  has at least  $w(p, t)$  tokens, where  $w(p, t)$  is the weight of the arc from  $p$  to  $t$ .
2. An enabled transition may or may not fire (depending on which event takes place or not).
3. A trip of an enabled transition  $t$  removes  $w(p, t)$  tokens from each input location  $p$  of  $t$ , and adds a  $w(t, p)$  tokens for each output location  $p$  of  $t$ , where  $w(t, p)$  is the weight of the arc from  $t$  to  $p$ .

Source transitions have no entry points and are always enabled. A transition without exit sites consumes tokens. There is an auto cycle, when a pair of nodes, a place  $p$  and a transition  $t$ , meet:  $p$  entry and  $t$  exit. A simple network lacks auto-cycles. A graph denoted as  $G$  is a tuple  $G = (V, E)$ , where  $V$  is the finite set of vertices or nodes and  $E$  represents the set of edges (Johnsonbaug, 1999). It is said that any edge  $e \in E$  is incident on a member of  $P$  and a member of  $T$ . A Petri net contains two types of nodes; the circles that represent places and the bars that are the transitions. Directed arcs connect places and transitions. Pert and Petri allow in this work, to propose an algorithm of creation of the model. By having the construction of the PERT diagram, you can start with the construction of the model following the transformation algorithm, which provides the steps to convert the model based on PERT diagram to a new model that incorporates the benefits of analysis of a Petri net.

For the purpose of this study, the construction of an algorithm in the analysis of the processes of Incorporation and Permanence of the Magical Towns of Mexico is presented. Next, the proposed algorithm is described.

## Development

This section presents a proposed model, which arises from applying the Pert and Petri benefits to analyze the flow of information in the Registration, Incorporation and Permanence process of the magical Towns Program.

### Algorithm of transformation of diagram PERT to network of Petri

From a PERT diagram, it can be transformed into a new model based on a Petri net, so as to take advantage of the main advantages of both models; By identifying in a simpler way the events, in which, can be made improvements in the process carried out by the Sector to optimize and improve it, as well as to find flaws in the sequence logic of the scheduled activities.

In order to apply this algorithm, you must remember the characteristics that are defined before and that the PERT diagram must contain. So that the transformation is much clearer, simpler and immediate and fulfills the aforementioned objectives. The necessary elements are then listed in a PERT diagram to be able to apply the transformation algorithm (Joel, 2016):

- An  $A$  set of activities that make up the PERT diagram, denoted by:  
 $A: \{\alpha_1, \alpha_2, \alpha_3 \dots \alpha_n\}$ , where  $\alpha_i \in A$  y  $\alpha_i$  is an activity from PERT diagram.
- Each activity  $\alpha_i$  has the following functions:  
 $\gamma(\alpha_i) = T_1$ : Which defines the earliest start time  $T_1$ . To calculate this indicator, the network must be traversed from left to right and considering the following:
  - $T_1$  from the first node equals 0.  
 $\gamma(\alpha_0) = 0$ .
  - $T_1$  of node  $n$  (node to be calculated) is equal to  $T_1$  from node  $n-1$  (previous node) Plus the duration of the activity (estimated time) ending at node  $n$ . This is:  
 $\gamma(\alpha_i) = \gamma(\alpha_{i-1}) + d$ .
- If a node ends more than one activity, it takes the time of the activity with the highest value.
- $\delta(\alpha_i) = T_2$ : This function defines the later time of completion ( $T_2$ ). To calculate this indicator, the network must be traversed from right to left and considering the following:
  - $T_2$  from the last node ( $\alpha_n$ ) equals its own  $T_1$ . So that:

- $\delta(\alpha_n) = \gamma(\alpha_n)$ .
- $T_2$  from node  $n = T_2$  from node  $n-1$  (Previous node, from right to left) minus the duration of the activity that starts (estimated time). This means:
- $\delta(\alpha_i) = \delta(\alpha_{i+1}) - \gamma(\alpha_i)$ .
- If a node ends more than one activity, it takes the time of the activity with less value.
- $\rho(\alpha_i) = H$  : slack time, the difference between  $T_2$  y  $T_1$ . This slack, given in units of time, corresponds to the value at which the occurrence of an event may be delayed. The events in which the slack is equal to 0 correspond to the critical path, that is to say that the occurrence of these events cannot take a single unit of time with respect to the established schedule, since in the case in which it would take delay the completion of the project.
- A B set of arcs connecting each of the nodes of the PERT diagram..
- B:  $\{\beta_1, \beta_2, \beta_3 \dots \beta_n\}$ , where  $\beta_i \in B$  Is one of the arcs belonging to the set, each arc is defined by the ordered pair:  $\beta_i = (\alpha_i, \alpha_j)$ , where  $\alpha_i$  indicates the node from which it leaves and  $\alpha_j$  the node on which it terminates.

As you can see, the following elements are eliminated; **later start time and earlier end time**, this is because for the model under construction these are not required to carry the sequence analysis. Once the elements to be used with the PERT diagram are defined, the resources required to assemble the proposed new model must be indicated, then these elements are listed to be related (correspondence):

- A  $\rho$  set of places that make up the Petri net denoted by:  
 $\rho: \{p_1, p_2, p_3 \dots p_n\}$  where  $p_i \in \rho$  Is one of the places that belongs to the whole.  
 Each place  $p_i$  has this characteristics:

Each place may or may not have a  $m$  mark, this is a function defined by:  $m: p \rightarrow N$ , which assigns to each place  $p \in \rho$  a number of *tokens*. The presence or absence of tokens indicates the state of a place, and the place mark represents the availability of a resource, or the occurrence of operations.

- The mark assigns to each site a non-negative integer. Graphically,  $k$  points are placed in a  $p_i$  place, if it has  $k$  tokens associated. A mark is denoted by  $M$ , which is an  $m$  vector where  $m$  is the total number of places. The  $p$ -th component of  $M$ , denoted by  $M(p_i)$ , is the number of tokens in the  $p_i$  place.
- One set  $\tau$  of transitions that make up the Petri net, in other words:
- $\tau: \{t_1, t_2, t_3 \dots t_n\}$  where  $t_i \in \tau$  Is one of the transitions that belongs to the set.
- Every  $t_i$  transition has the following characteristics:
- An input function  $I: \rho \times \tau \rightarrow N$ , that describes  $p_i$  places of entry to the transition.
- An output function:  $\rho \times \tau \rightarrow N$ , that specifies  $p_i$  places of exit to transition.
- It is considered that a transition  $t_i$  is enabled, if each place  $p_i$  of input  $t_i$  has at least  $w(p_i, t_i)$  *tokens*, where  $w(p_i, t_i)$  is the weight of the arc from  $p_i$  to  $t_i$ .
- An enabled transition may or may not fire (depending on which event takes place or not).
- A trip of an enabled transition  $t_i$  removes  $w(p_i, t_i)$  *tokens* From each entry point  $p_i$  from  $t_i$ , and adds  $w(t_i, p_i)$  *tokens* for every exit place  $p_i$  de  $t_i$ , where  $w(t_i, p_i)$  Is the weight of the arc from  $t_i$  to  $p_i$ .
- Transitions that do not have entry points are called source transitions. A source transition is always enabled. On the other hand, a transition without exit sites consumes tokens, but does not produce them.
- It is said that there is a motorcycle, when a pair of nodes, a place  $p$  and a transition  $t$ , meet:  $p$  is the input and output of  $t$ . A network that lacks auto-cycles is called a simple network

- An arc directed from a  $p_i$  place to a transition  $t_i$  defines an input of said transition. A directed arc of a transition  $t_i$  to a  $p_i$  place defines the exit of the transition. Sometimes it is necessary to place weight values at arcs and is denoted by  $w(p_i, t_i)$ , where  $w$  is function:

$w: (\rho \times \tau) \cup (\tau \times \rho)$ .

Taking into account the above definitions, the following is the transformation algorithm (Joel, 2016):

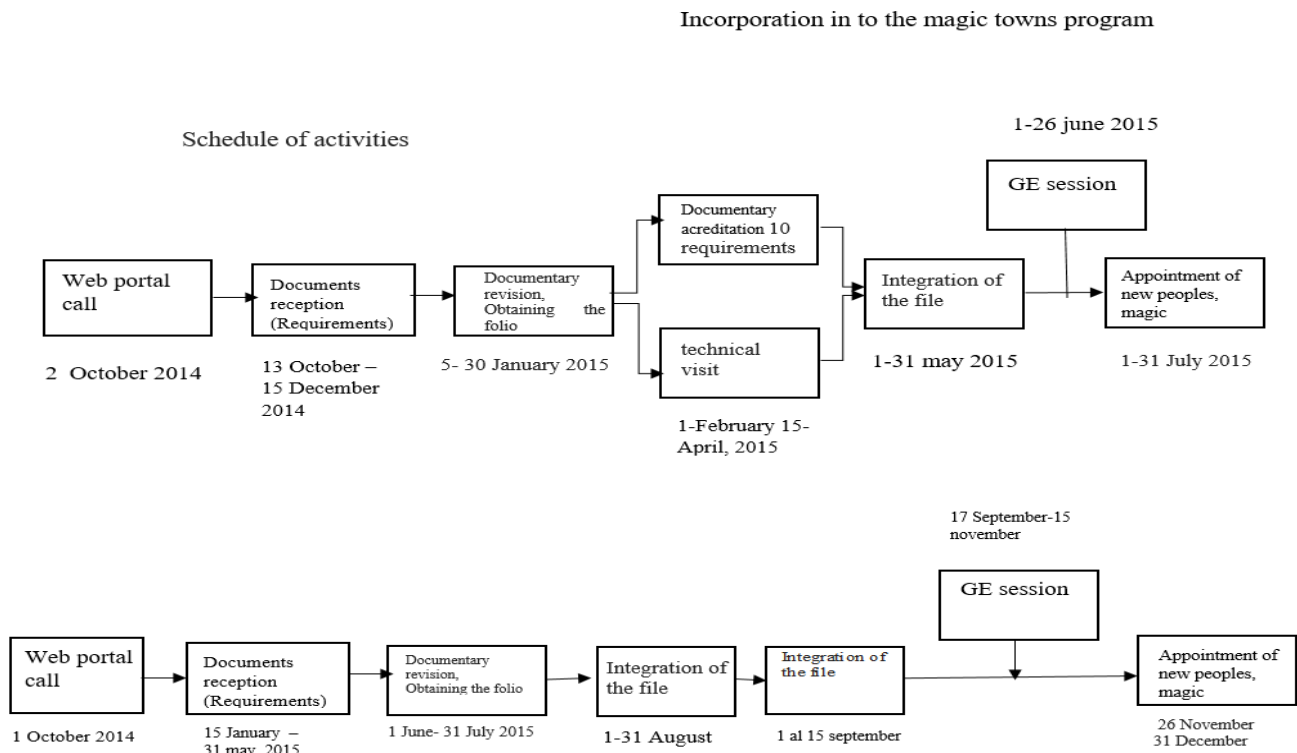
1. Each activity  $\alpha_i$  transforms to a  $p_i$  place acquiring its attributes  $(T_1, T_2, H)$ .
2. Each event (Arc in PERT diagram),  $\beta_i$  transforms in a transition  $t_i$  where input functions I, and output O, will be defined by the ordered pair  $\beta_i = (\alpha_i, \alpha_j)$ , considering that  $\alpha_i$  y  $\alpha_j$  Have already been converted to places  $p_i$  y  $p_j$  respectively, being  $p_i$  assigned to the input function I, y  $p_j$  to the output function O.
- a. Each  $p_i$  place must be connected with its respective transition  $t_i$  p or by means of an arc that is assigned according to the functions of input and output of said transition, the weight assigned to each arc  $w(p_i, t_i)$  or  $w(t_i, p_i, )$  as the case may be, is assigned with a value equal to one.

To each transition is added an extra place of exit, which aims to indicate the failed state of the transition. The latter, depending on the nature of the process, can be assigned another return transition as long as the duration and slack allows.

## Practical Case

In this case study, the processes of Registration and Integration of the magical Towns of Mexico Program of the Directorate General of Destination Management in the Sector are used for the construction of the proposed model. In addition to the transformation algorithm, to obtain the final product of a model based on Petri nets. To know the detailed processes of Registration, Incorporation and Permanence of the magic towns Program of Mexico see Annex A. Initially, we observe the actual process that is used (Sector, 2011), which, is detailed in Figure 4

**Figure 4** Current SECTUR process model. Final Sector Guide 2015



From the previous figure, you can identify the activities that belong to the process of Registration and Incorporation to the magical Towns Program. It also identifies the duration of each of these activities, through the established schedule. Based on figure 1, an activity matrix is created to gather the necessary information and to create the PERT diagram ( Table 4)

**Table 4** Matrix of activities of the process of registration and incorporation to the program "Magical Towns ". *Elaboration (Joel, 2016)*

Task	Duration (days)	Star	End	Prodecessors
1.- Call for web portal	3	09/10/14	12/10/14	
2.- Receipt of documents (5 requirements)	46	13/10/14	15/12/14	1
3.- Documentary revision (obtaining of folio)	20	05/01/15	30/01/15	2
4.- Documentary accreditation (10 requirements)	54	01/02/15	15/04/15	3
5.- Technical visit	54	01/02/15	15/04/15	3
6.- Integration to the file	22	01/05/15	31/05/15	4,5
7.- GE Session	22	01/06/15	30/06/15	6
8.- Appointment of new magical Towns	23	01/07/15	31/07/15	7

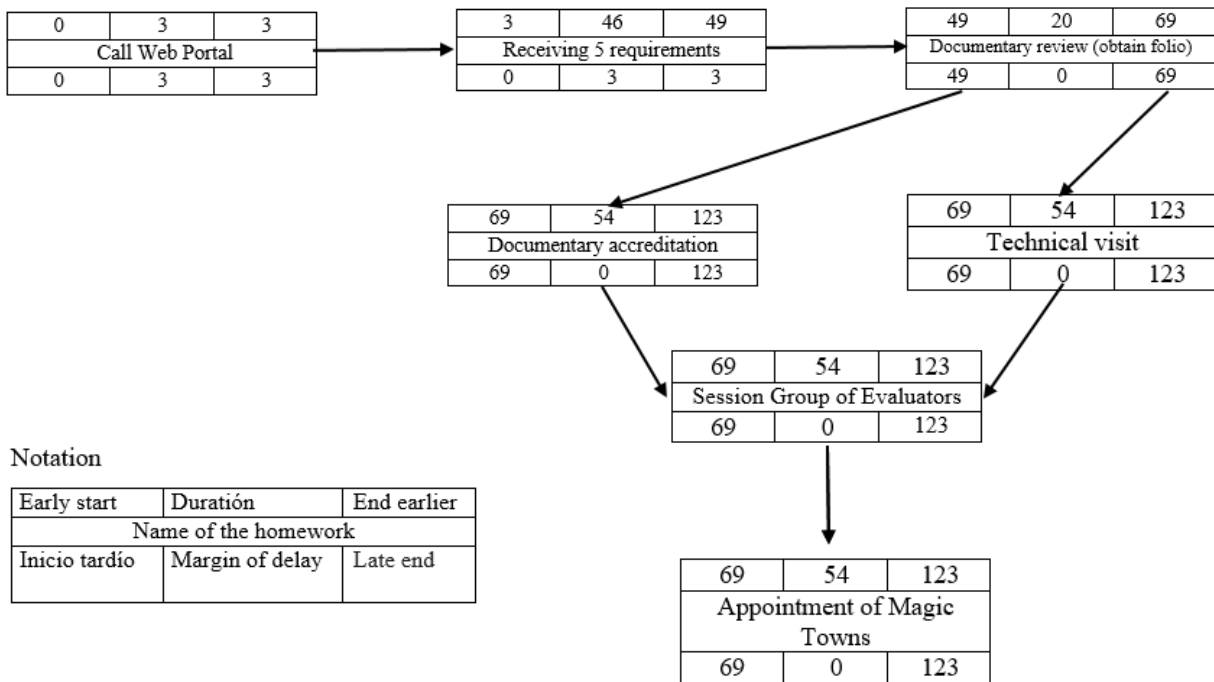
With the activity matrix, the PERT diagram is constructed, in which the times are added, which are: the earliest start, late start, early completion and late completion. As well as, the slack of each of the activities that are identified. To start drawing the diagram, the node of each activity must be initially linked in a sequential and unidirectional way, according to the previous activity matrix; at the end of the layout of the nodes, a tag is added that identifies each activity, and is assigned its duration. With the duration, the route of each one of them is realized, to assign the later time of beginning, in which, the greater amount is obtained that is obtained, summing the time of later completion, the greater one from the coming activity, with the duration of the previous activity.

This time is considered for the initial activity as zero.

The earliest start time is assigned, and then the later end time is set. To assign it to each node, the final activity is identified, to which the later start time will be equalized with its later end time, from the node of the final activity, the predecessor activities will be assigned their time of Late completion; this is taken and the duration of the next activity is subtracted; and is assigned only if it is the lowest value, in case of having more than one consequential activity.

To obtain the slack of each of the activities, the difference between the later end time and the later start time is made, within the proposed diagram, there are activities whose play has the value of 0, the ordered sequence of each of these activities, shows the critical path; that is to say, the series of activities in which, one cannot have a delay in its fulfillment, since it impacts in the finalization in time of the process. In figure 4.1, the constructed diagram of the Registration and Incorporation process is shown:

**Figure 4.1** PERT diagram of the processes of Registration and Incorporation to the program "Magic Towns". *Elaboration (Joel, 2016)*

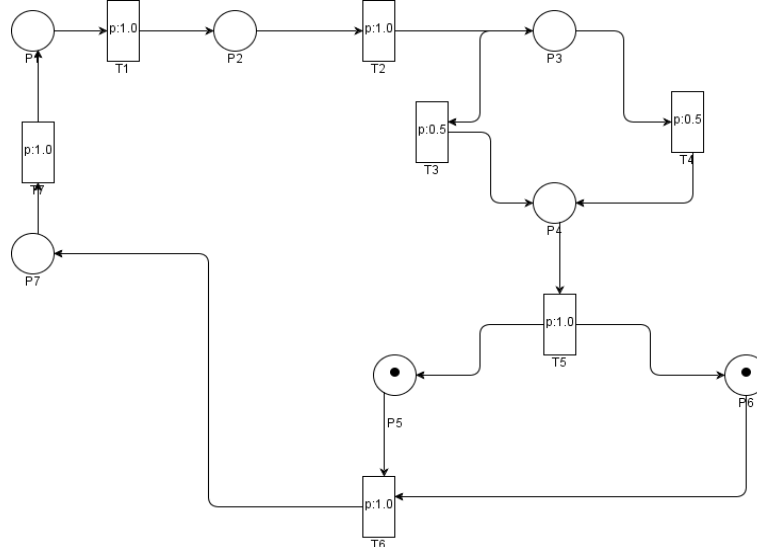


At the end of the drawing up of this diagram, it can be observed that each of the activities is critical, that is, at any time in the current process there are slacks with a duration of 168 days.

**First model based on Petri nets**

After applying the transformation algorithm explained above, a first model is obtained. It is a total of seven places, which denote the different states that are the process of registration and incorporation. In addition to 7 transitions that are responsible for carrying out the change between the different states. For this first model, the deadlock locations, ie the states in which it is considered as the failed process, have been eliminated. For the case study it is considered that these places are reached by not complying with the requirements established by SECTUR in time and form (Figure 4.2).

**Figure 4.2** First model based on Petri nets. *Elaboration (Joel, 2016)*





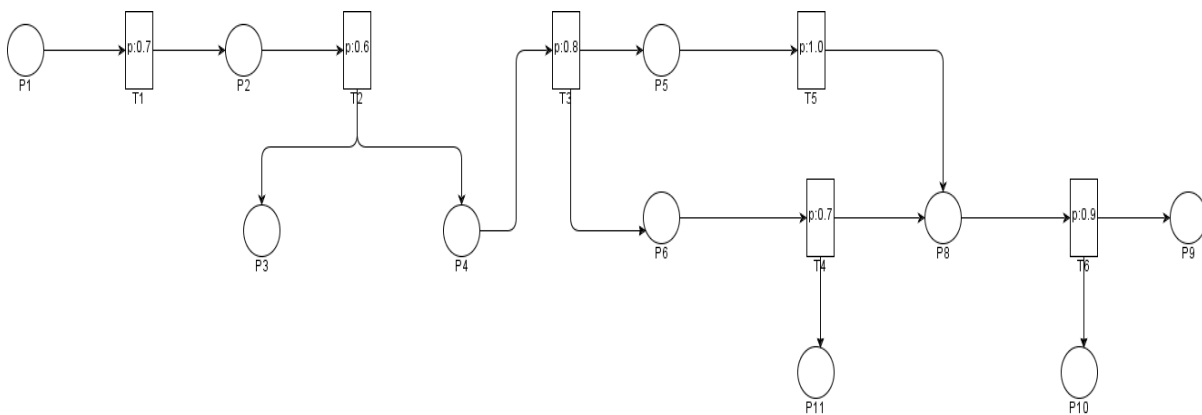
## Results obtained from the first model

For this first model, because we do not consider premature completion sites, we cannot know at what point in the process there are critical transitions for the same, that is, the transitions that are decisive to reach the last state within the process. Unlike the model based on the PERT diagram, this is not so intuitive. However, when performing the simulation we can obtain the possible outcomes of the process.

## Second model based on Petri nets

A second model of the registration and incorporation process is created considering places of premature completion, that is, states in which the process for each of the magic towns is considered as failed, that is, they must wait until the next call for to start the registration process ( Figure 4.3).

**Figure 4.3** Second model based on Petri nets. *Elaboration (Joel, 2016)*

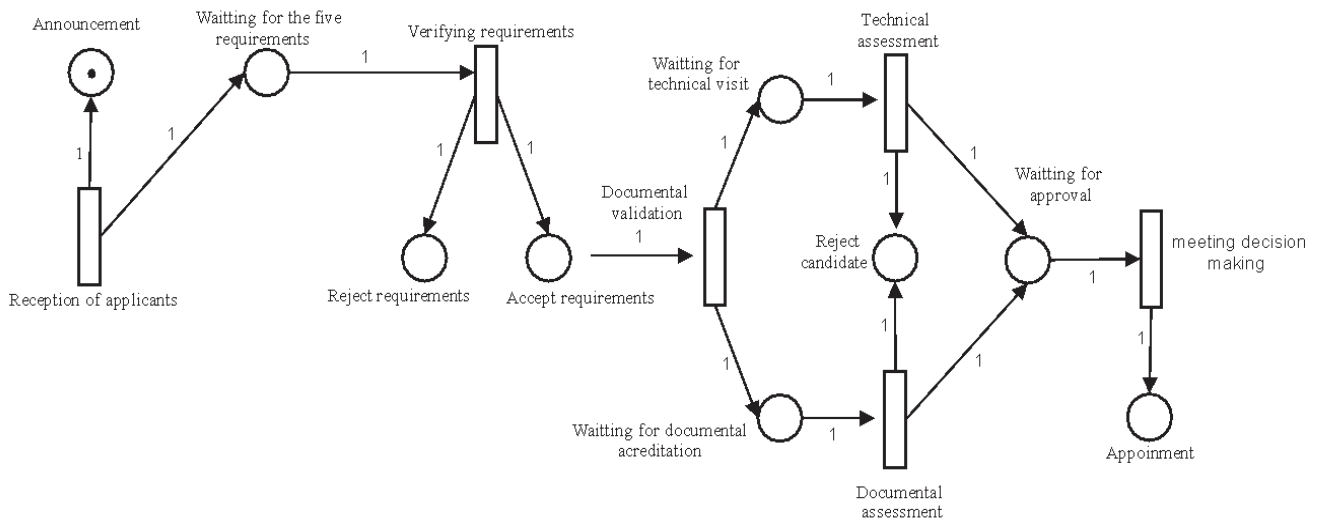


## Results obtained from the second model based on Petri nets

For this second model to include places that do not have recovery, the number of places increases to 11, 3 of which belong to this type of states, the number of transitions remains the same as in the first model. This allows us to observe the places in which, before reaching the transition, its output function has as a possible result a state in which the process is considered to be unsuccessful. This means that special attention must be paid to these transitions; since their values determine the statistics that a community joins the program or has to wait for the next call.

However, this second model already incorporates the appropriate places and transitions that shape this process of registration and incorporation; it is necessary to identify each of them as was done with the PERT diagrams, where a label with a name that is indicative and explanatory within the network is assigned to each place and transition. In order to understand more easily what is happening in the Petri net, a descriptive label is added to each site and transition only to the network diagram, since it would not be part of the definition of the mathematical model mentioned above.

Also, the weight of each bow is indicated with a label that represents its value, the latter label being negligible, since for the specific case of this model all weights correspond to 1. However, they are placed for descriptive purposes only this model. In figure 4.4, this same second model is shown by adding the identification tags for each of the transitions and places.

**Figure 4.4** Second model based on Petri nets (labeling). *Elaboration (Joel, 2016)*

### Simulation of the resulting model

In the simulation of the previous model, a total of 70 repetitions are used in an individual way of this process, since on average a total of 70 applications are received annually to join the program "Magic Towns", obtaining the following points to highlight:

1. Particular attention should be paid to the transitions that have to exit, some of the states in which the process is considered as failed, since each of them experiences a probability of 20% in triggering the same.
2. Documentary review times of the process should be reduced because in these states they consume the majority of the time spent.
3. There are few places that are done in parallel with others, which causes a great temporary dependence on their predecessors.
4. A total of 27 applicants are discarded from the process after passing the 5 requirements revision transition.
5. On average 16 applicants are discarded, after the documentary evaluation, whereas in the technical evaluation they were only 4.

Due to the above points it is proposed to modify the registration and incorporation process, so that more actions can be carried out in parallel and reduce the time in the document review activities.

### Results obtained from the analysis

It is proposed to carry out parallel activities, which will help to optimize document review times. The table below shows the activities, if the process starts on November 30, 2016. When you make the difference between start and end dates, there are 148 days including Saturdays and Sundays, if these days are spread, it's reduced to 105 working days.

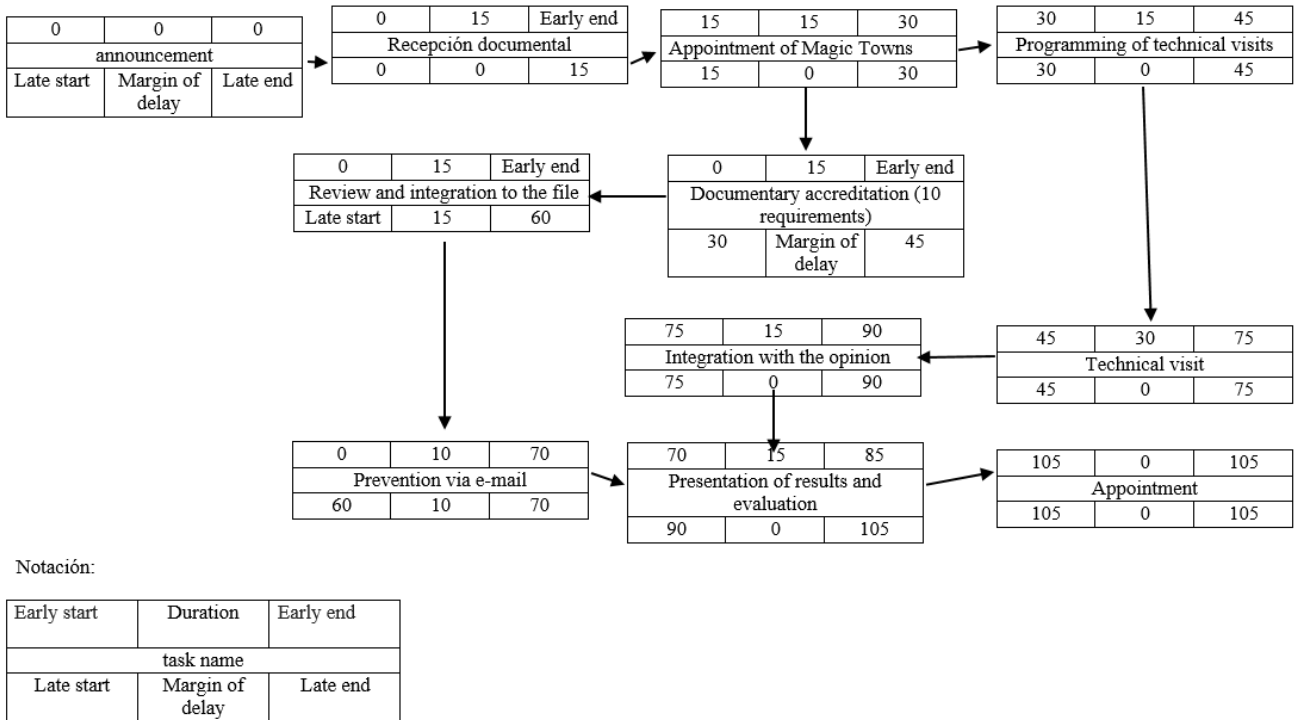
**Table 4.1** Matrix of activities of the proposed new model

Task	Duration	Start	End	Predecessors
Announcement	0 days	30/11/16	30/11/16	
Documentary reception	15 days	30/11/16	20/12/16	1
Documentation validation (5 requirements)	15 days	21/12/16	10/01/17	2
Accrediting documents (10 requirements)	15 days	11/01/17	31/01/17	3
Programming of technical visits	15 days	11/01/17	31/01/17	3

Review and Integration to the file	15 days	01/02/17	21/02/17	4
Technical visits	30 days	01/02/17	14/03/17	5
Email Prevention	10 days	22/02/17	07/03/17	4,6
Integración al dictamen	15 days	15/03/17	04/04/17	7,8
Presentation of results and evaluation	15 days	05/04/17	25/04/17	9
Appointment	0 days	26/04/17	26/04/17	10

In Figure 4.5, the proposed process is modeled.

**Figure 4.5** Model proposed from analysis. *Elaboration (Joel, 2016)*



### Conclutions

It proposes a restructuring based on the processes that SECTUR carries out. Since previously, Sector consumed a lot of time in each process. Identification of the main processes that SECTUR carries out in Incorporation and Permanence. It is possible to model with the diagrams based on the PERT-CPM methodology, and identifies the duration of the activities of the two processes that SECTUR performs for the evaluation of the magical Towns Program. This makes it possible to observe that the total duration of the general procedure that until last year made the Sector consists of 322 days.

A basic mathematical model is obtained, which describes the PERT-CPM dimensioned to be used as a graph, being a support for the development and design of the model enriched with the characteristics of a Petri net (proposed algorithm).

## **Annex A**

The present annex contains the processes of Incorporation of the Localities to be Magical Town and Permanence of the Magical Towns of Mexico; hich is carried out by the General Directorate of Destination Management in the Tourism Secretariat and are taken up verbatim from (Turismo, 2015). Flow diagrams are incorporated, which are performed by (Joel, 2016) and detail the information flow of these processes.

### **Modeling requirements requested to candidate locations based on sequence diagrams**

The following are the requirements of the Sector and the flowcharts that detail these requirements.

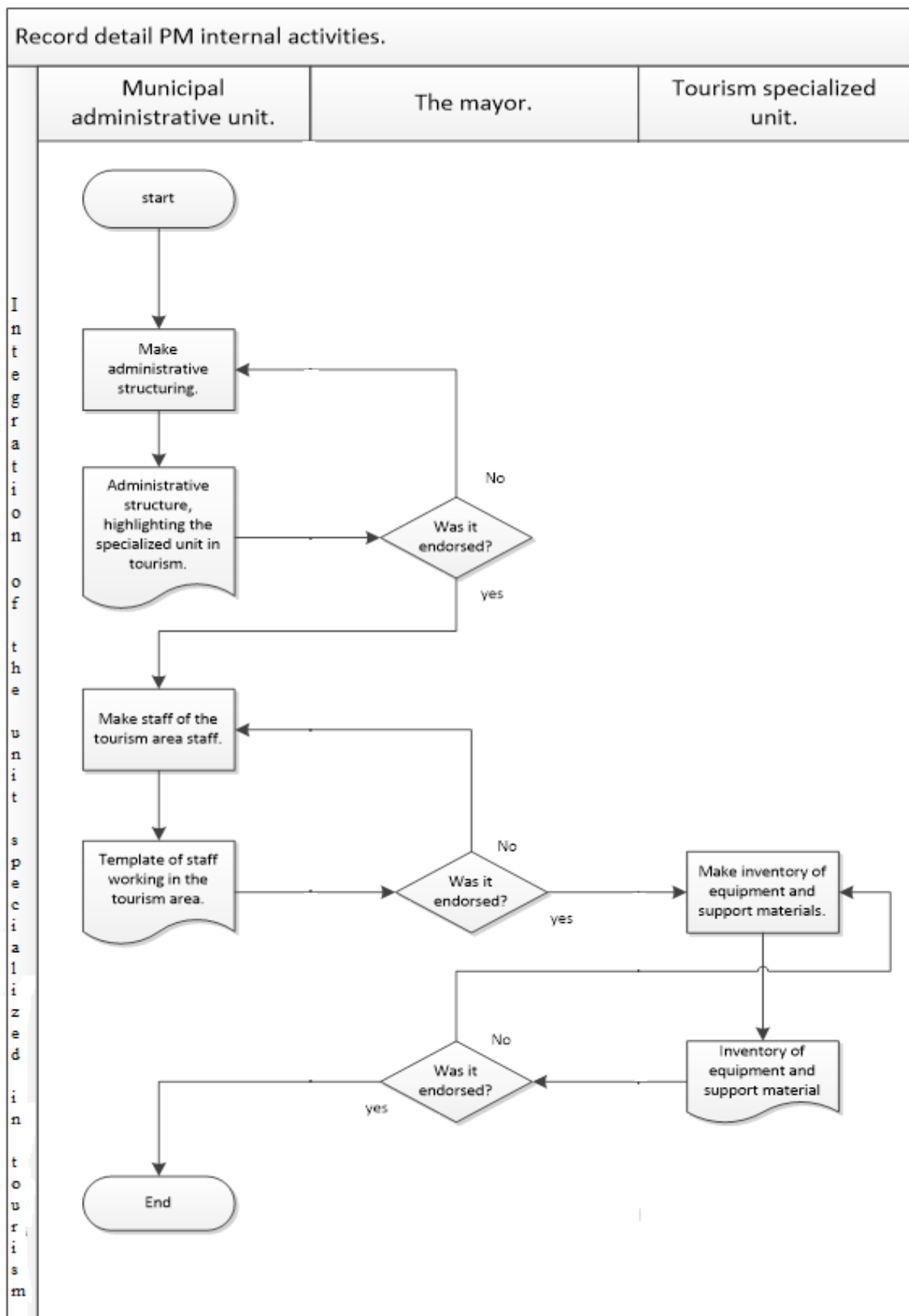
#### **Registration process**

For a community to be a candidate to join the program, it must meet 5 requirements to complete the first stage called registration, currently SECTUR creates a call through its web portal, which indicates these elements necessary to start the registration process. Next, the necessary elements are detailed, as well as the very process that SECTUR carries out.

#### **Registration elements**

- 1. The postulant locality must have an area or administrative unit dedicated to tourism with decision-making power**
  - a. Present the document showing the administrative structure, in which the tourism unit stands out, the document must be endorsed by the Municipal President in function
  - b. Show the template of staff working in the area of tourism of the municipality, endorsed by the Municipal President in function.
  - c. Present the inventory of equipment and support materials (telephone number, email, furniture and equipment), endorsed by the person in charge of administration.

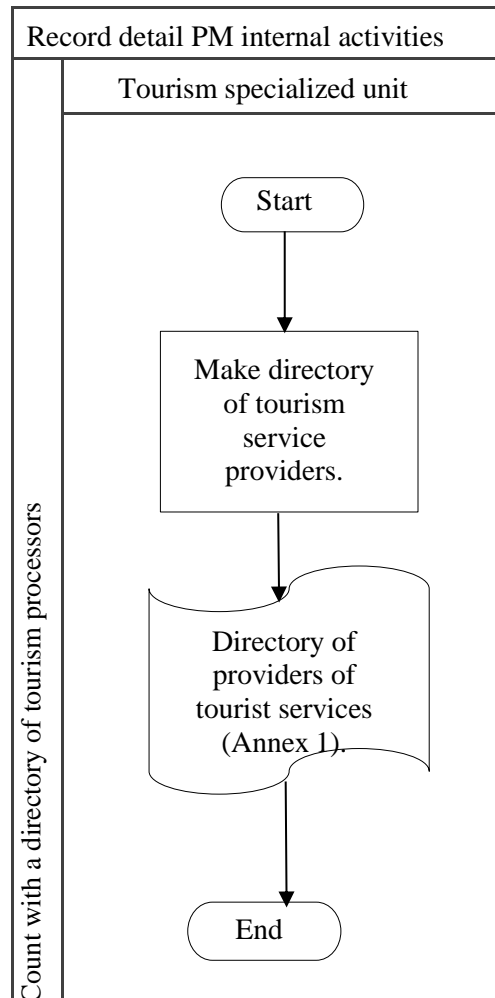
**Figure 4.6** Sequence diagram of the first registration requirement



## 2. Keep directory of tourism service providers

- a. To present the directory of providers of tourist services, called for Sector Annex 1. The second requirement, shown in the diagram in

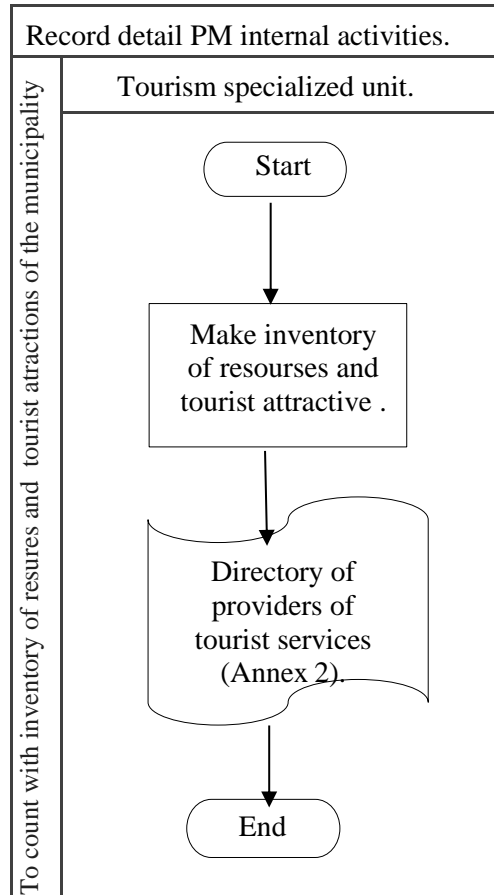
**Figure 4.7** Sequence diagram of the second registration requirement.



## 3. Have an inventory of resources and tourist attractions in the municipality

- d. Present the inventory of resources and tourist attractions which must indicate the physical state of the same and that are susceptible of tourist use (highlighting the declared properties or be appropriate to be classified as a zone of historical monuments, by some institution of state or federal level, Called Annex 2).

This third requirement is developed in the diagram in 4.8:

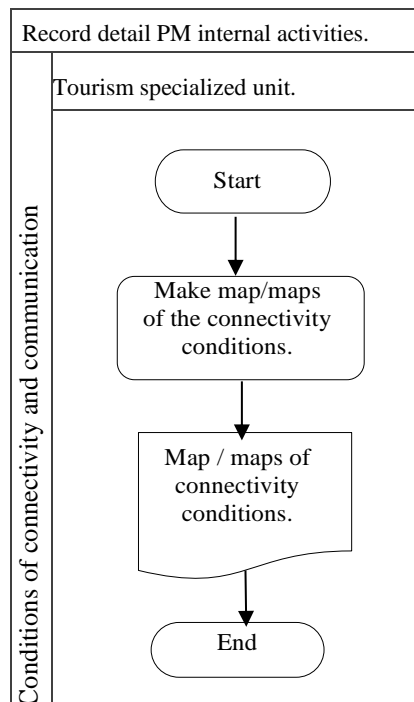


**Figure 4.8** Sequence diagram of the third registration requirement

**4. Connectivity and communication conditions**

- e. Show on the map the conditions of terrestrial connectivity from urban distribution centers (not exceeding two hours of land transport) by adding the following elements: fixed-routes for public transport, land and air category. The fourth requirement, shown in the diagram in Figure 4.9 :

**Figure 4.9** Sequence diagram of the fourth registration requirement

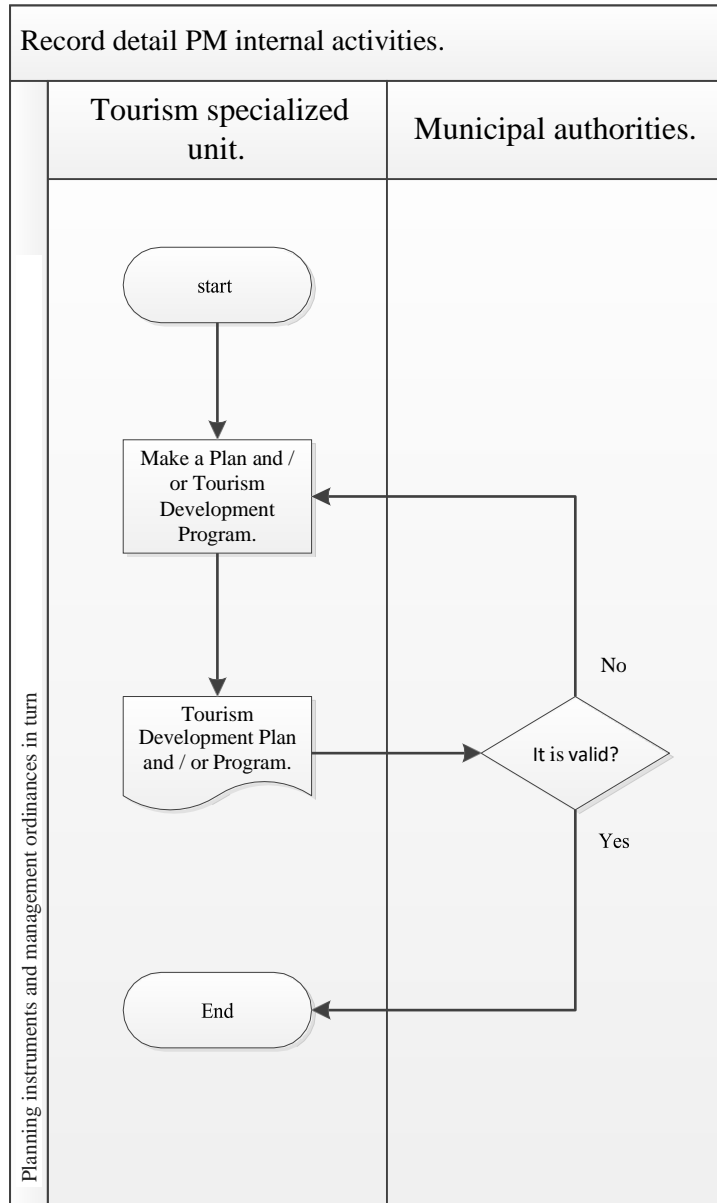


**5. Instruments of Planning and ordinances of the administration in turn (in force)**

f. Submit a copy of the Municipal Tourism Development Plan and / or Program, validated by the municipal authorities in which specific actions are included to promote the development of the Magic Town. This fifth and final requirement is shown in the diagram in Figure :

g.

**Figure 4.10** Sequence diagram of the fifth registration requirement



The aforementioned documents have registration effect, as they are subject to validation by the Ministry of Tourism, through the Directorate General of Destination Management. If the Applicant Locations do not meet these requirements, they are not considered as magical Towns.

The process of incorporation into the Magical Towns Program (MTP) requires that the aspiring locality comply with important elements that demonstrate sustainable development, tourism and that it complies with the necessary regulations. This requires the participation of the different levels of government so that the locality, can be integrated into the MTP. In this process of incorporation into the program, you need the following elements, which are subject to analysis and validation (Ana María Huayna, 2009).



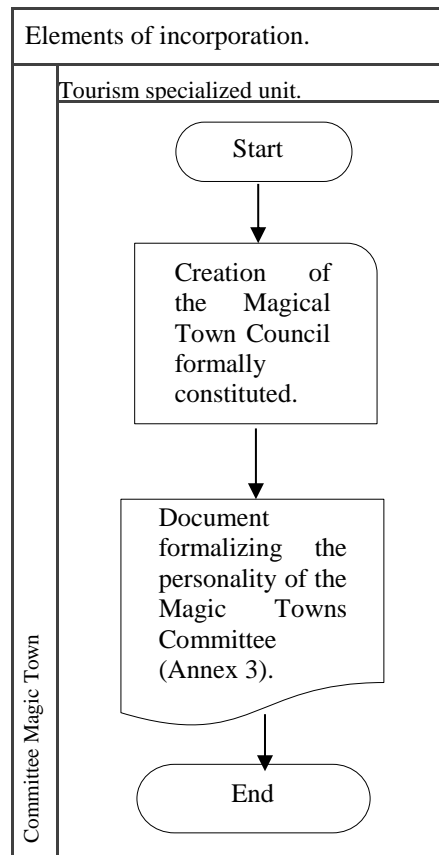
## Incorporation Process

### Formally constituted Pueblo Mágico Committee (Annex 3).

- a. Submit a copy of the document that forms the personality of the Committee of the "Magical Town". (Present original for comparison in all cases) containing Name of the members, Work program to 5 years, Internal Regulation of operation among other things.

For the first incorporation requirement, the process is exemplified in the diagram in 4.11:

**Figure 4.11** Sequence diagram of the first incorporation requirement

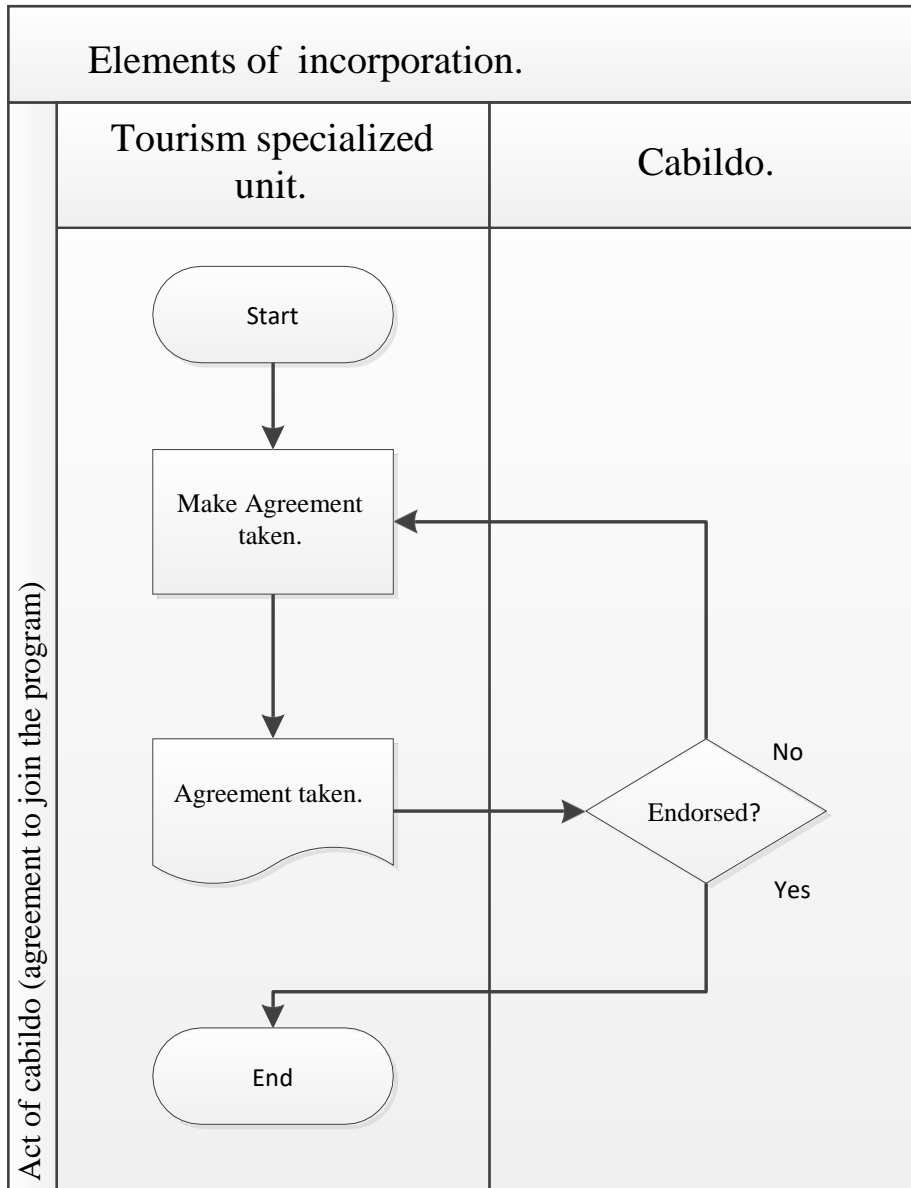


## 2. Minutes of the meeting (agreement to apply for membership of the Program).

- a. Submit a copy of the agreement taken and endorsed by the lobby

The second requirement of incorporation, shown in

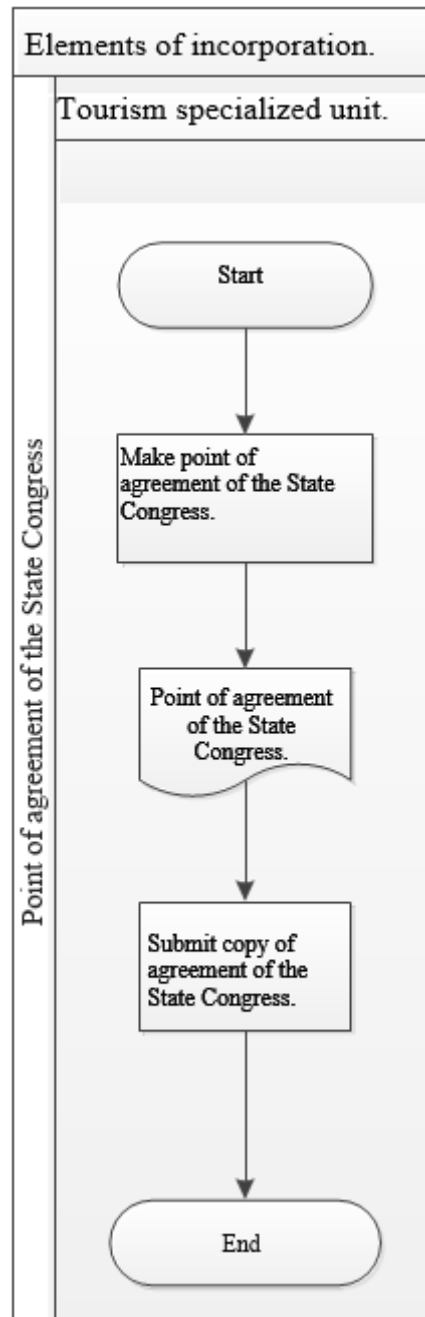
**Figure 4.12** Sequence diagram of the second incorporation requirement



3. **Point of agreement from the State Congress.**
  - a. Submit a copy of the document in which, in addition to expressing the agreement of the State Congress for the postulant city to join the Magic Towns Program, a commitment to label an annual budget for the tourist development of the locality.

The third requirement is presented in Figure 4.13:

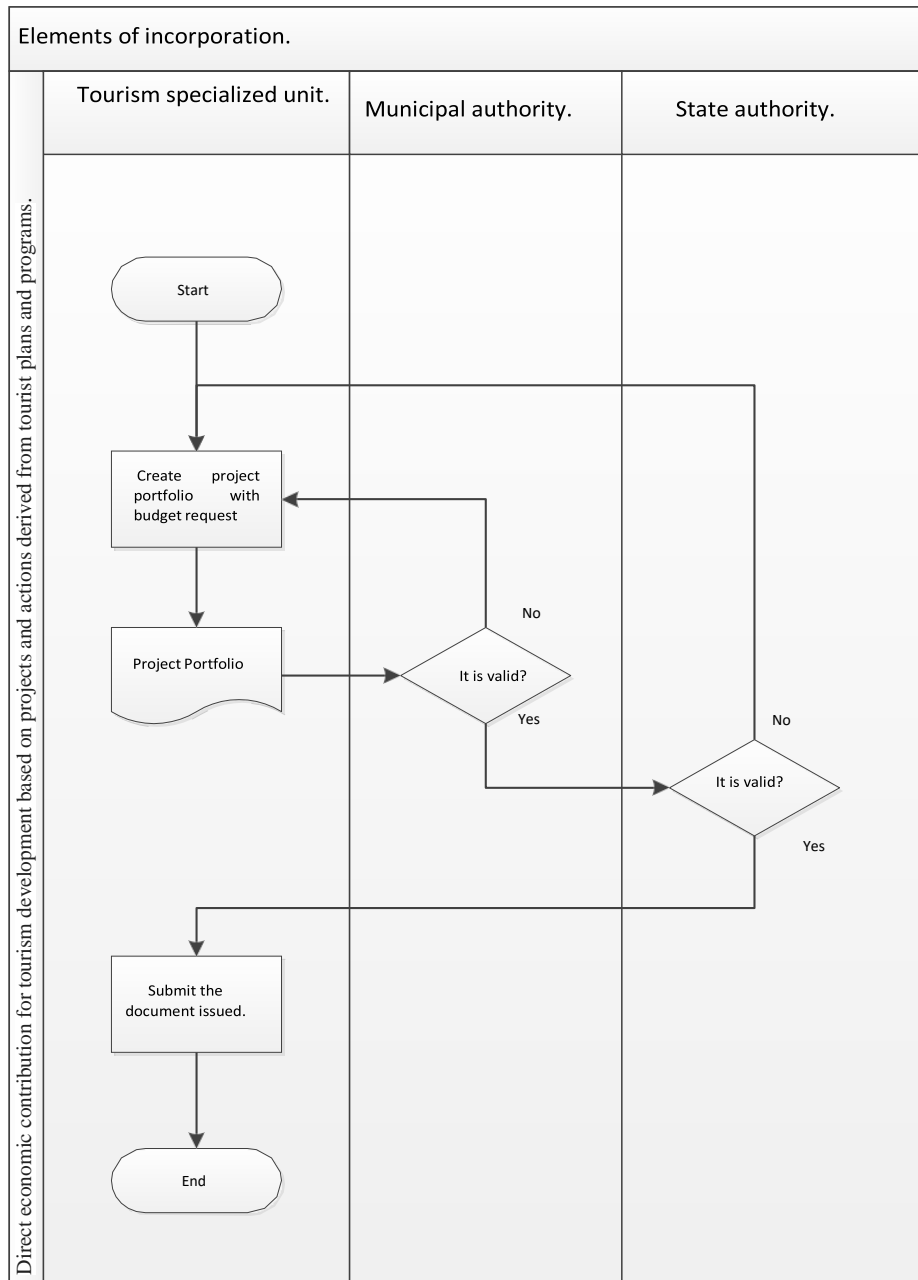
**Figure 4.13** Sequence diagram of the third incorporation requirement



4. **Direct economic contribution for tourism development based on projects and actions derived from tourist plans and programs**
  - a. Submit the document issued by the municipal and state authority in which the commitment and annual amount of the contribution is established with its respective portfolio of projects.

The fourth requirement, shown in the diagram in Figure :

**Figure 4.14** Sequence diagram of the fourth incorporation requirement

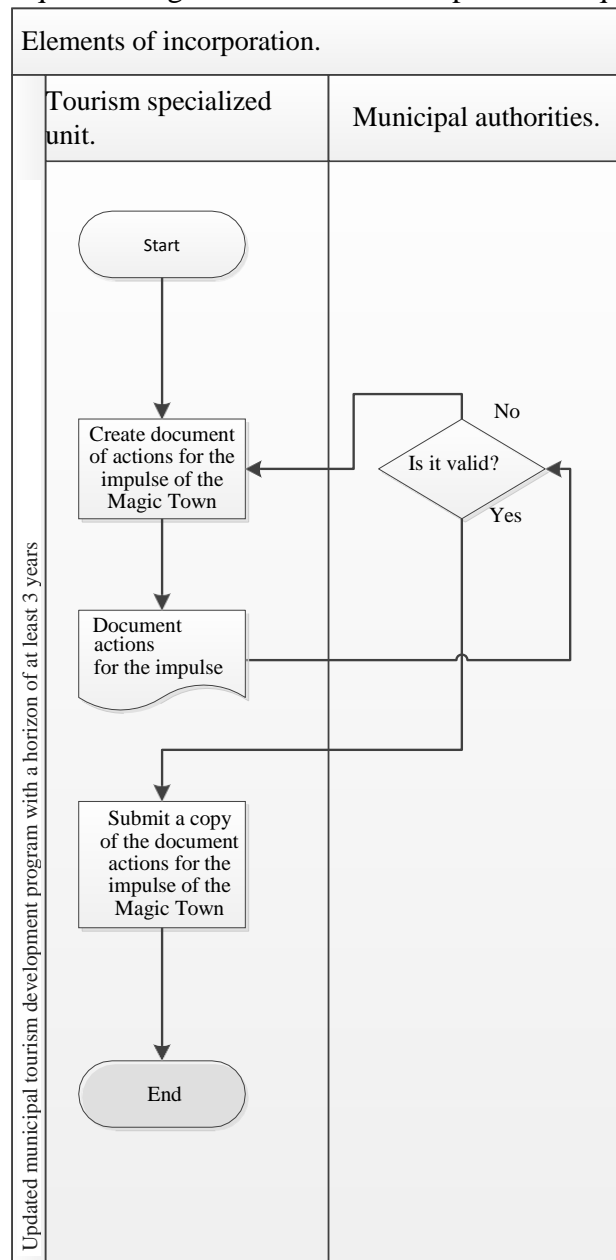


**5. Updated municipal tourism development program with a horizon of at least 3 years**

- a. Submit a copy of the valid document, validated by the municipal authorities in which actions are established for the promotion of the Magic Town.

The fifth requirement of incorporation, is seen in,figure 4.15:

**Figure 4.15** Sequence diagram of the fifth incorporation requirement



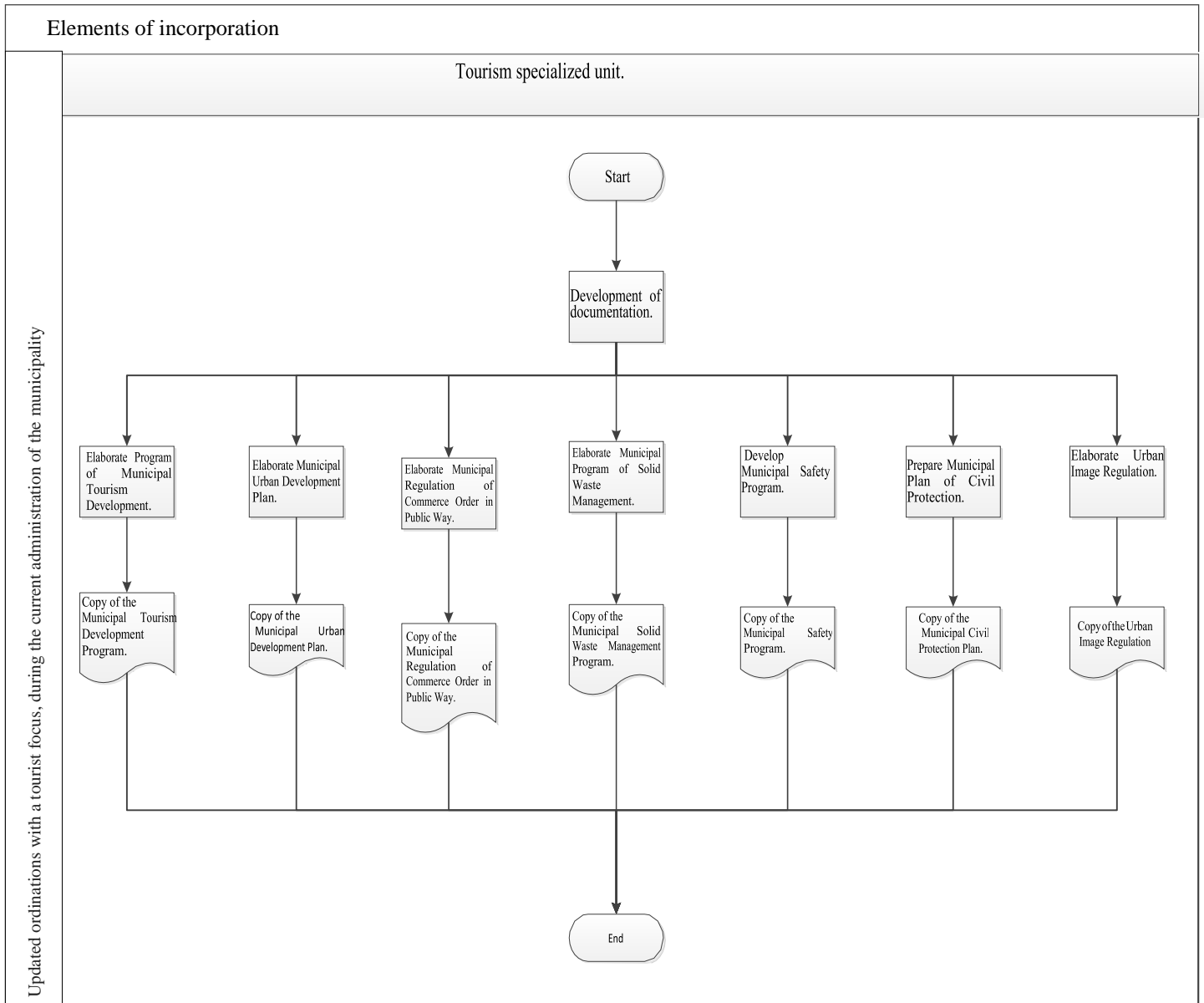
- 6. Updated ordinances with a tourist focus, during the current administration of the Municipality**
- a. Submit a copy Municipal Tourism Development Program validated by the municipal authorities.
  - b. Submit a copy of the Municipal Urban Development Plan, validated by the corresponding authorities.
  - c. Submit a copy of the Municipal Regulation of Commerce in a public area, validated by the municipal authorities.
  - d. Submit a copy Municipal Safety Program, validated by the municipal authorities.
  - e. Submit a copy of the Municipal Civil Protection Plan, validated by the municipal authorities.
  - f. Submit a copy of the Urban Image Regulation, validated by the municipal authorities.
  - g. Submit a copy of the Municipal Solid Waste Management Program, validated by the municipal authorities.

Notes:

- Actions to restrict and mitigate informal trade in areas of high concentration of visitors or in tourist areas and in the area of influence of these should not be confused with the sale of traditional products that give life to the squares And public roads.
- All programs should articulate strategies for the development of public services and tourism.

The sixth requirement is reflected in the diagram on

**Figure 4.16** Sequence diagram of the sixth incorporation require



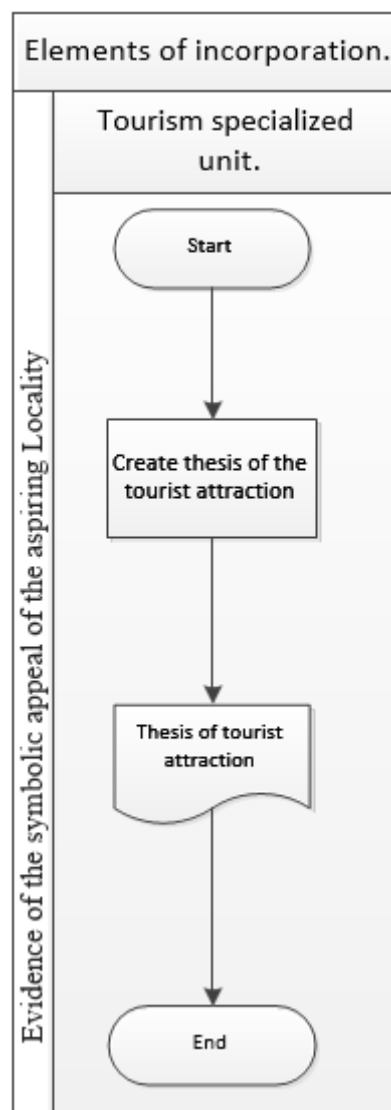
## 7. Evidence of the symbolic appeal of the aspiring Locality

- a. Development of the thesis of the symbolic attraction or set of them, written in a document with a minimum of four pages, in which the sociocultural and / or natural attributes of the symbolic attraction or set of them are clearly expressed. It is convenient to add photographs as an attachment to the requested pages.

Note: Demonstrate in its thesis that they have a symbolic tourist attraction (unique, irreplaceable and authentic) that differentiates it from other localities in the state, region and even the country.

The seventh requirement for incorporation is shown in the diagram in Figure 4. 17 :

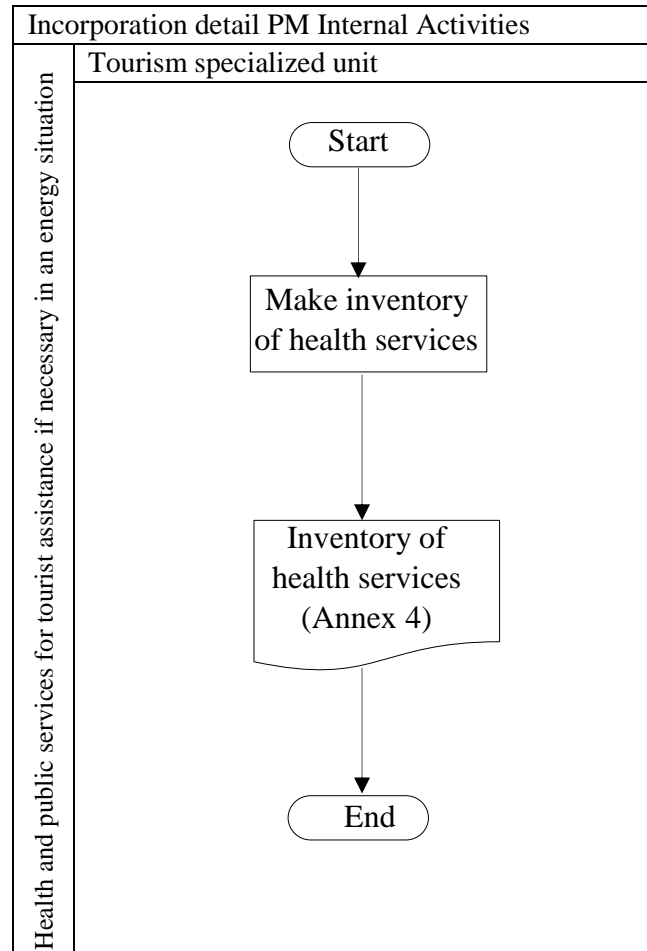
**Figure 4.17** Sequence diagram of the seventh requisite of incorporation



## 8. Public health and safety services for tourist assistance, if necessary in an emergency situation.

- a) Submit an inventory of health services (institutions, hospitals, pharmacies, clinics) with a radius of influence of not more than one hour distance-time (Annex 4).

**Figure 4.18** Sequence diagram of the eighth incorporation requirement



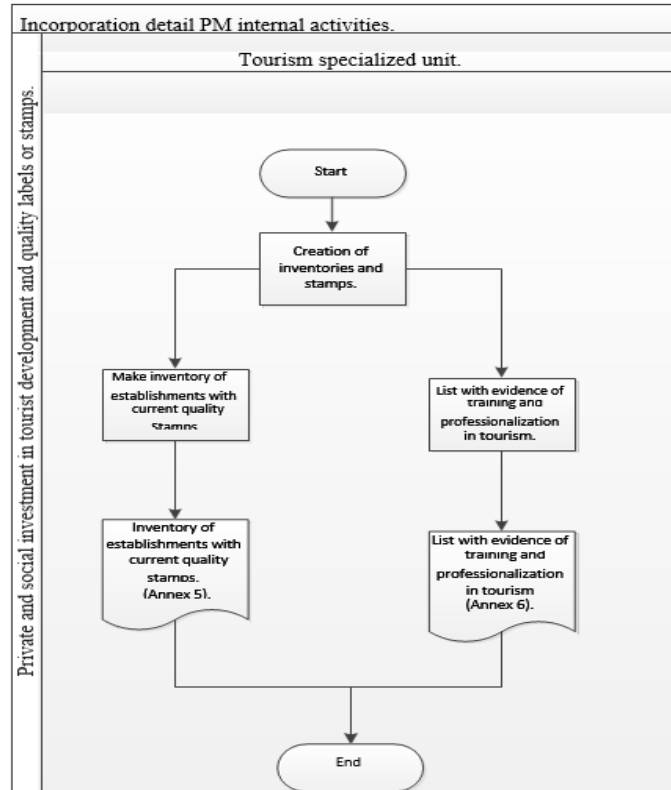
**9. Private and social investment in tourist development and quality labels or stamps.**

- a) Present an inventory of establishments with current quality stamps (H, M and Clean Point), among others (Annex 5).
- b) Submit a list with evidence of training and professionalization in tourism (Annex 6).

Ninth requirement, is exemplified in the Figure 4.19:



**Figure 4.19** Sequence diagram of the 9th incorporation requirement

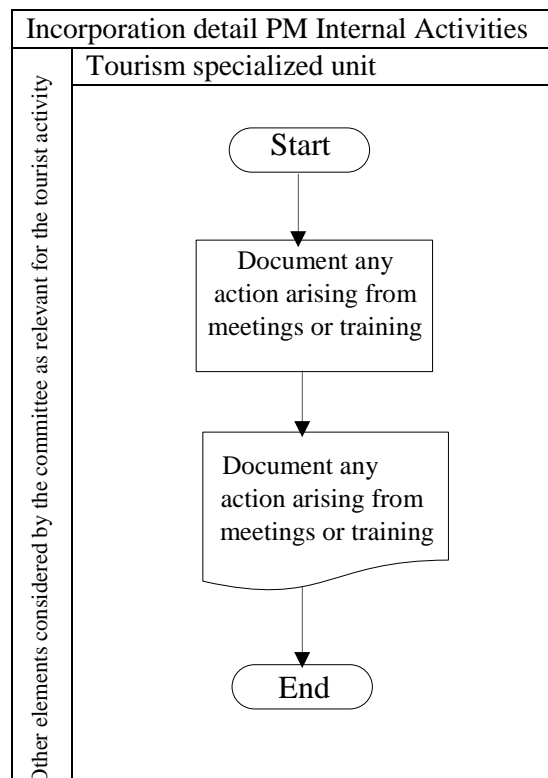


**10. Other elements considered by the Committee as relevant for tourism activity**

a. Any action arising from meetings or training.

Tenth and last requirement of incorporation, is shown in la Figure 4.20 :

**Figure 4.20** Diagram of sequence, tenth incorporation requirement.



## Process of permanence

For the permanence process the same requirements listed in the incorporation phase are obtained, with the inclusion of correcting the aspects that SECTUR creates pertinent when carrying out the corresponding evaluations, that is to say, the following requirements are also requested:

1. Maintain an active committee with follow-up agreements.
2. Approval and point of agreement of the State Congress.
2. Comply with plans, programs and regulations.
3. Strengthening and innovation of the tourist products catalog.
4. Operation and adequacy of health and safety services.
5. Evaluate the impact of tourism development.
6. Maintenance of commercial relations with at least one intermediary of tourist services.
7. Have a Statistical Information System.
8. Integrate a detailed report of activities (annual).
9. Follow up on other elements that the Committee considers relevant to the operation of the program.

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## **Technological innovation in the management of priority touristic destinations and magic towns of Mexico**

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B.Miranda, A.Cuevas, A.Galicia, J.Santiago, J.Reyes, K.Aguilar. (eds.) Technological Development of priority tourist destinations and magic towns . Handbook T-I. -©ECORFAN, Mexico City. March, 2017

## **Abstract**

The project carries out a comprehensive analysis of 2610 tourist indicators, classified into nine tourism components, given the need to try to select the indicators that allow observing the competitiveness and sustainability of the place; As well as the development among other factors, a matrix of affinity between the indicators and the SWOT analysis of the Competitiveness Agendas (CAs) of the priority tourist destinations and magic Towns. Once you have the core of what the database is to store, the design and implementation of an information system for decision-making is carried out, supporting the General Directorate of Destination Management (DGGD) in the Secretariat of Tourism, to automate the processes of the Magic Towns Program; In addition to the indicators of the CAs that feed nine tourist components.

## **Introduction**

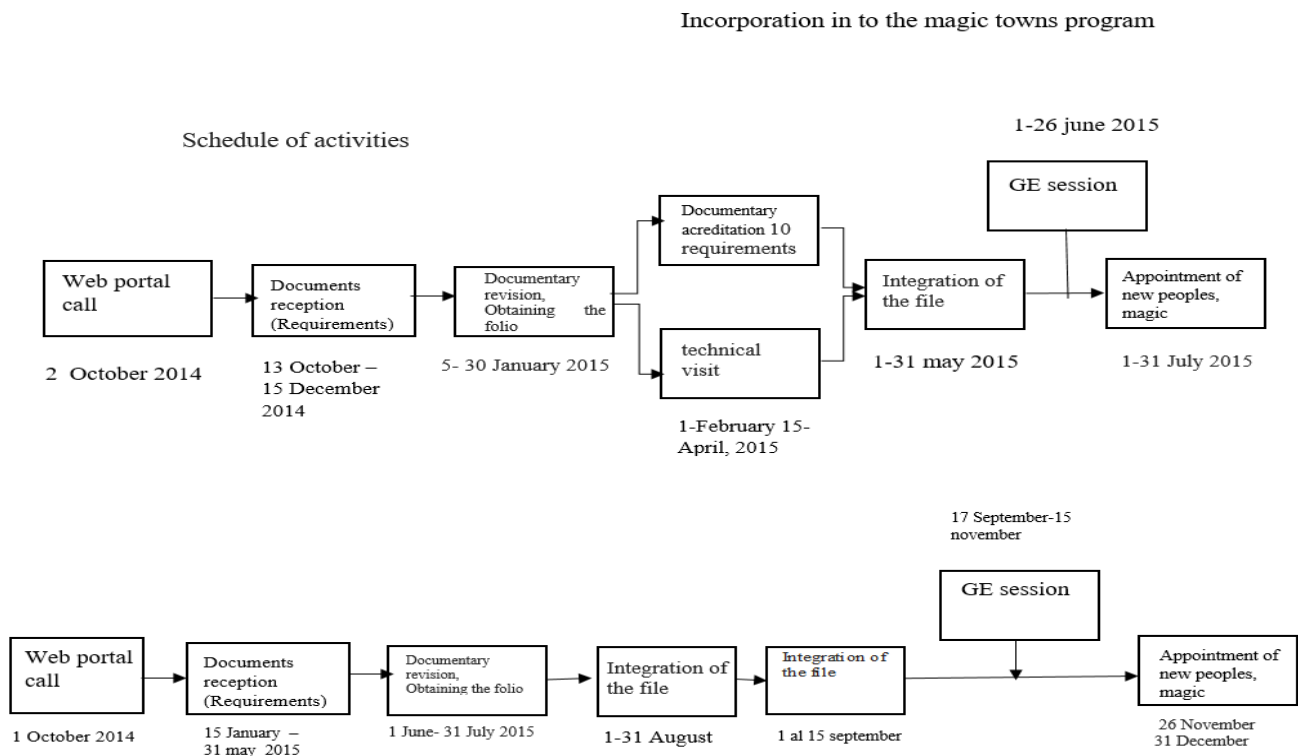
In this chapter, the result of the analysis of tourist indicators is presented; Through technological innovation embodied as an Information System for evaluation of magical towns or localities who wish to enter the program and store important content of priority tourist destinations. The Sector DGGD requires that the information contained in the Competitiveness Agendas of the 44 Priority Tourist Destinations in the 83 Magic Towns be automated in the evaluation of the performance of the tourist destinations, within the framework of the coordination agreements in this area Of reassignment of resources, as well as in the Manual of indicators of the Magic Towns Program. Therefore, an information system is developed with Web technologies that manages the information related to the priority tourist destinations and magical towns and that can provide a behavior of the tourist development of the destinations and localities. In order to contribute to decision making by accessing information stored in a database. With the information registered by the users, indicators related to nine tourist components are captured; Which allows to build ACs. It is intended to observe, the tourist development, the sustainability and competitiveness of the destination; Through environmental, economic and sociocultural indicators oriented to decision making. In addition, elements are included for the SWOT analysis (strengths, opportunities, weaknesses and threats), which later allow for a SWOT evaluation.

## **Methodology**

An Information System for the management of priority tourist destinations and magical towns of Mexico is required for the Directorate General of Destination Management (DGGD) in the Sector developed with Web technologies that manage the following:

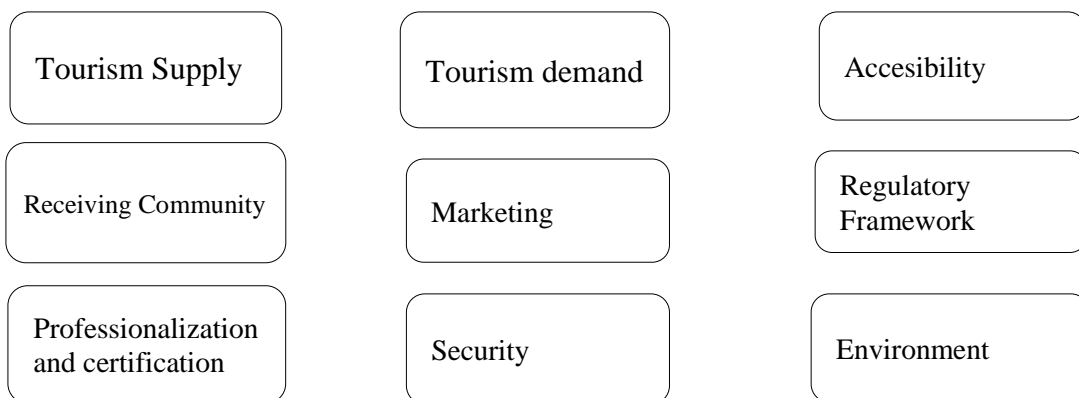
- 1) The entry and permanence to the Magic Towns Program. Figure 5 shows the current process of the Sector

**Figure 5** Sector Processes for the Magic Towns Program. (Sector, 2015)



2) Information related to priority tourism destinations (Competitiveness Agendas 2015) and various sources. It is required that the indicators related to the nine tourism components can be captured in the system (see figure 2); And so-called SWOT elements, due to a previously made analysis of 2610 indicators collected and the SWOT analysis contained in the Competitiveness Agendas of priority tourism destinations and magical towns. This allows to observe the priority tourist destinations and the magical towns.

**Figure 5.1** Tourist components currently used by the DGGD, including Environment proposed by Project 242853. Own elaboration Project 242853



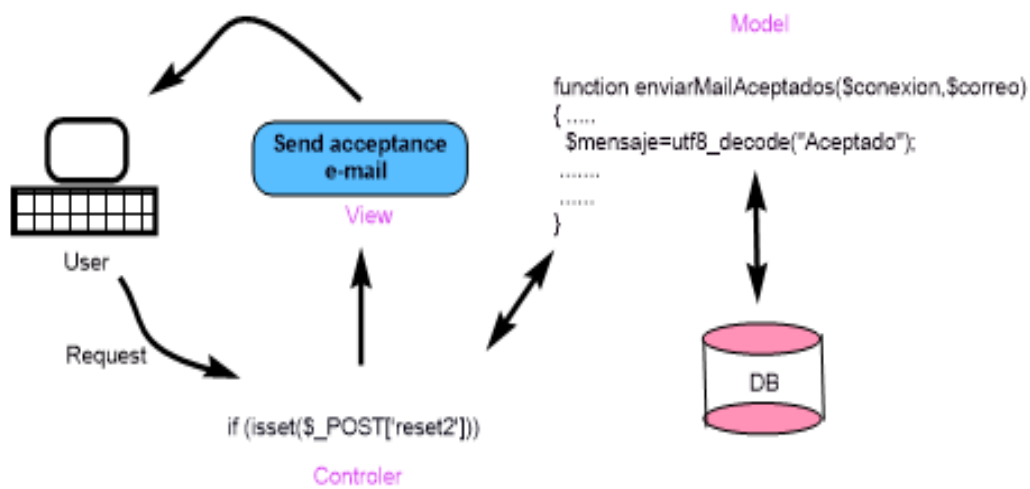
It is intended that the information system be of support for the DGGD and may have information related to the degree of development, competitiveness and sustainability of the tourist destination; Through environmental, economic and sociocultural indicators oriented to decision making. In addition, to include elements for the SWOT analysis.

It is possible to have a deep and general panorama of the tourist indicators related to the tourist components. This analysis is possible using the processes that precede Data Mining (Jiawei Han, 2006); Which involve;

- la extracción y limpieza,
- integración,
- selección y transformación de los datos.

A new analysis is performed on the classification of the information; And in addition, knowledge of the SWOT tool is required to reduce the indicators from 2610 to 906 (see chapter 4). This allows to observe the behavior of the indicators, that is to say, if it is observed in magical town, priority tourist destination or is present in both. It is done a debugging of the sources that are related to the indicators, to obtain a source. The relational model is used to organize and represent the data in a table structure.

**Figure 5.2** Example of sending mail to the locality by the administrator. Own elaboration Project 242853

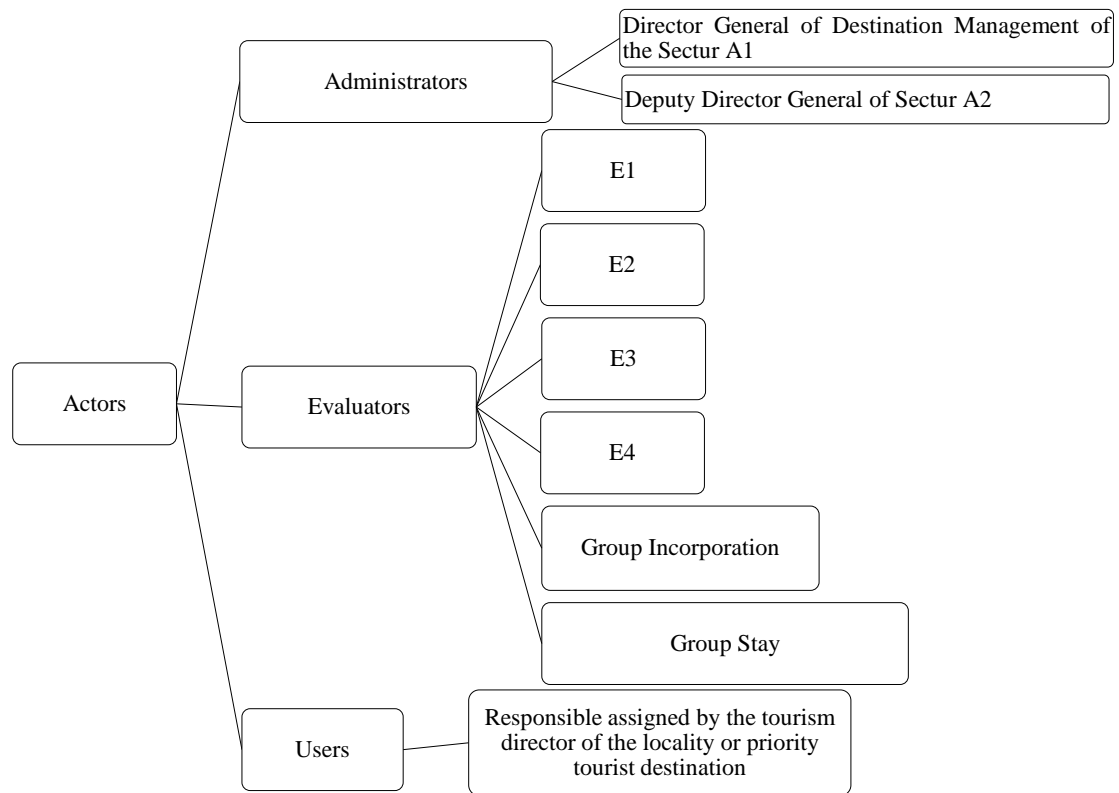


## Development

This part shows a part of the requirements, analysis and design of the Information System for the Management of Priority Tourist Destinations and Magic Towns of Mexico.

## Analysis and design

In this section, some of the requirements and design of the system are presented; As well as the modules that comprise it and some UML diagrams (James Rumbaugh, 2000) that correspond to the analysis and design. Some of the system requirements include the following: The following user profiles are involved in the system (see figure 5.3):

**Figure 5.3** System Users. Own elaboration Project 242853

The evaluation of the localities is distributed by regions, throughout the Mexican Republic, reason why each evaluator has a one region in its charge. The groups of evaluators of the incorporation and permanence processes receive the qualifications of each process by locality or magic town, in order to analyze and make decisions according to the grades received.

1. With regard to the CA in the system, we have the following considerations:
  - The agenda should include the SWOT elements and their relationship to the indicators of the nine tourism components.
  - The agenda can be generated, through a report that contains the information captured by the destination's tourism manager.
2. Regarding the magical towns, it is considered:
  - Performance
  - Inventory of attractions (based on tourism components).
  - Tourist behavior
  - Guidelines

In general, the modules contained in the system are as follows:

Magic Towns, which contains three processes

- a) The Pre-requisites process, where the Locality uploads five documents, which, must be correct to pass to the Incorporation process, in case of having a wrong document, the Locality does not go to the next process.

- b) The Embedding process consists of three subprocesses, which are:
  - Documentary evaluation. The locality carries 27 documents distributed in 10 requirements.
  - Technical visit. It consists of two folders Offer and demand, which allow you to obtain information related to the heritage of the Locality.
  - Tourism plant, where the Locality must load evidentiary documentation, values of indicators and can be self-evaluated. The evaluator then rates the information that the locality loads into the system.

If the City passes this process satisfactorily, it receives appointment of Magic Towns.

- c) The Permanence process is to evaluate the Localities that are already Magic Towns ; This consists of three subprocesses similar to those of Incorporation.
  - Documentary evaluation. The locality carries 27 documents distributed in 10 requirements, these documents are different from those of Incorporation.
  - Technical visit. It consists of two folders Offer and demand, which allow you to obtain information related to the heritage of the Magic Towns.
  - Behavior tourism, contains the indicators of nine tourist components; Tourist demand, accessibility, receiving community, marketing, regulatory framework, professionalization and certification, security and environment; Which must be captured by the Magic Town.

But in documentary evaluation, the documents that are requested to the Magic Town are changed.

Priority tourist destinations. It is made up of the nine tourist components, which according to the previous analysis, have a classification, as follows:

- Component
  - Subcomponent (eg Tourism Vocation)
    - Factor (eg Tourist Resources)
      - Indicator (Eg Existence of Tourist Inventory)

In figure 5.4, a graphical representation of the modules is given.

**Figure 5.4** Information system modules

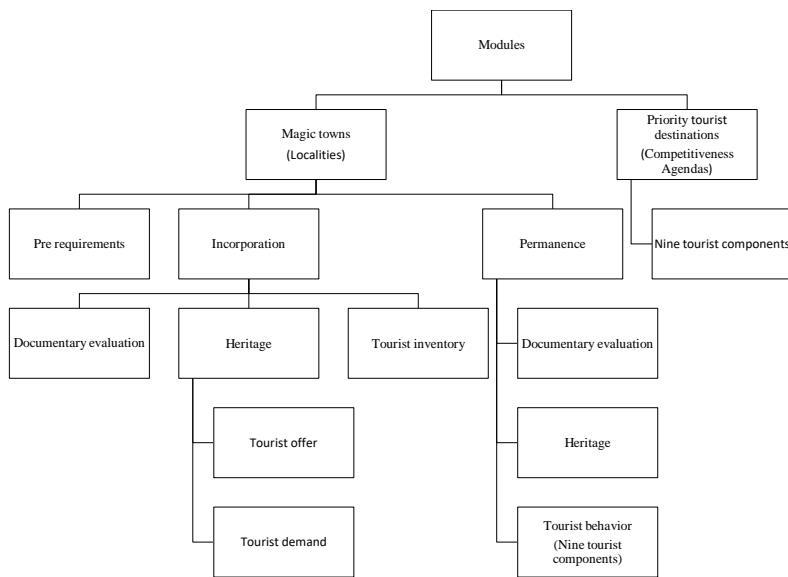




Figure 5.5 presents requirements of the system for registration of applicants, where the person in charge of tourism in the locality must register their data, in order to access the system. Then Adminstor\_1 validates the information and proceeds to authorize the applicant's data.

**Figure 5.5** Use case of Applicant registration. Own elaboration Project 242853

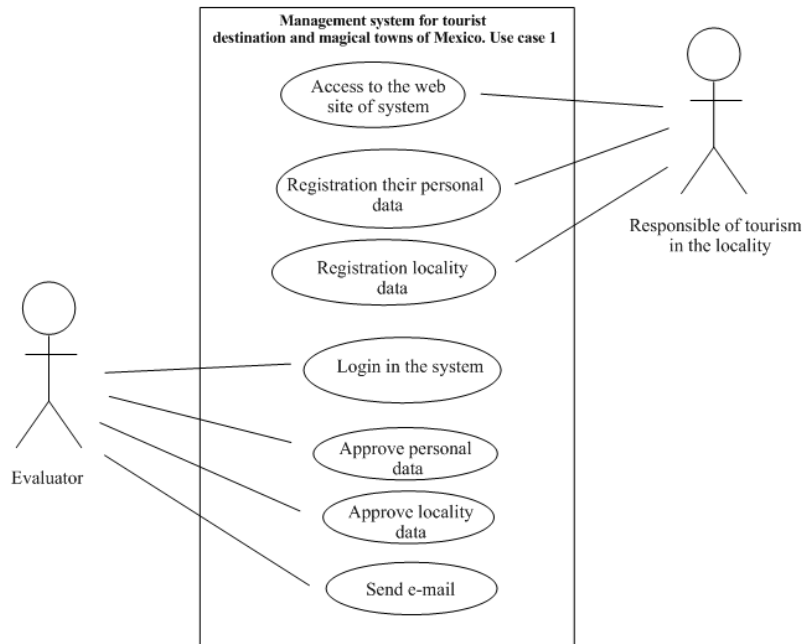


Figure 5.6 shows the activity diagram of the applicants' register, where the behavior of the information flow between the user and the administrator, both users of the system, is observed.

**Figure 5.6** Activity diagram, Applicant record. Elaboration Project 242853

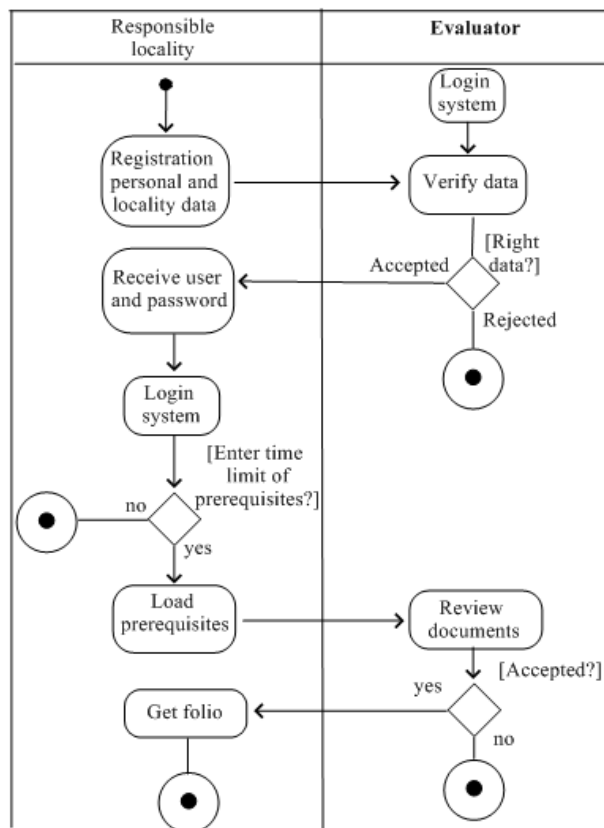


Figure 5.7 presents a table of the system; which represents one of the classifications of the indicators, which for the analysis was called Factor. The script for creating the table is also displayed.

**Figure 5.7** SCIPN table and script. Elaboration Project 242853

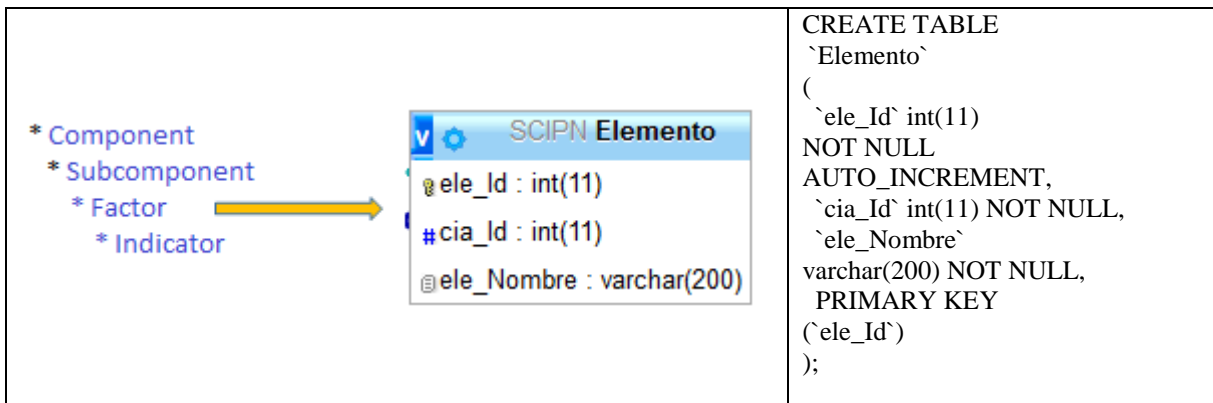
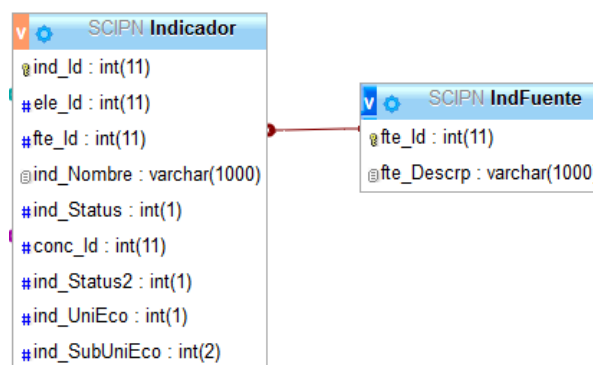


Figure 5.8 shows the ratio of N to 1 between the Indicator and IndFuente table. A source may be related to 1 or more indicators, but an indicator can only have one source.

**Figure 5.8** Relationship N to 1. Elaboration Project 242853



## Results

In this section, the non-functional requirements and some graphic interfaces of the system are presented.

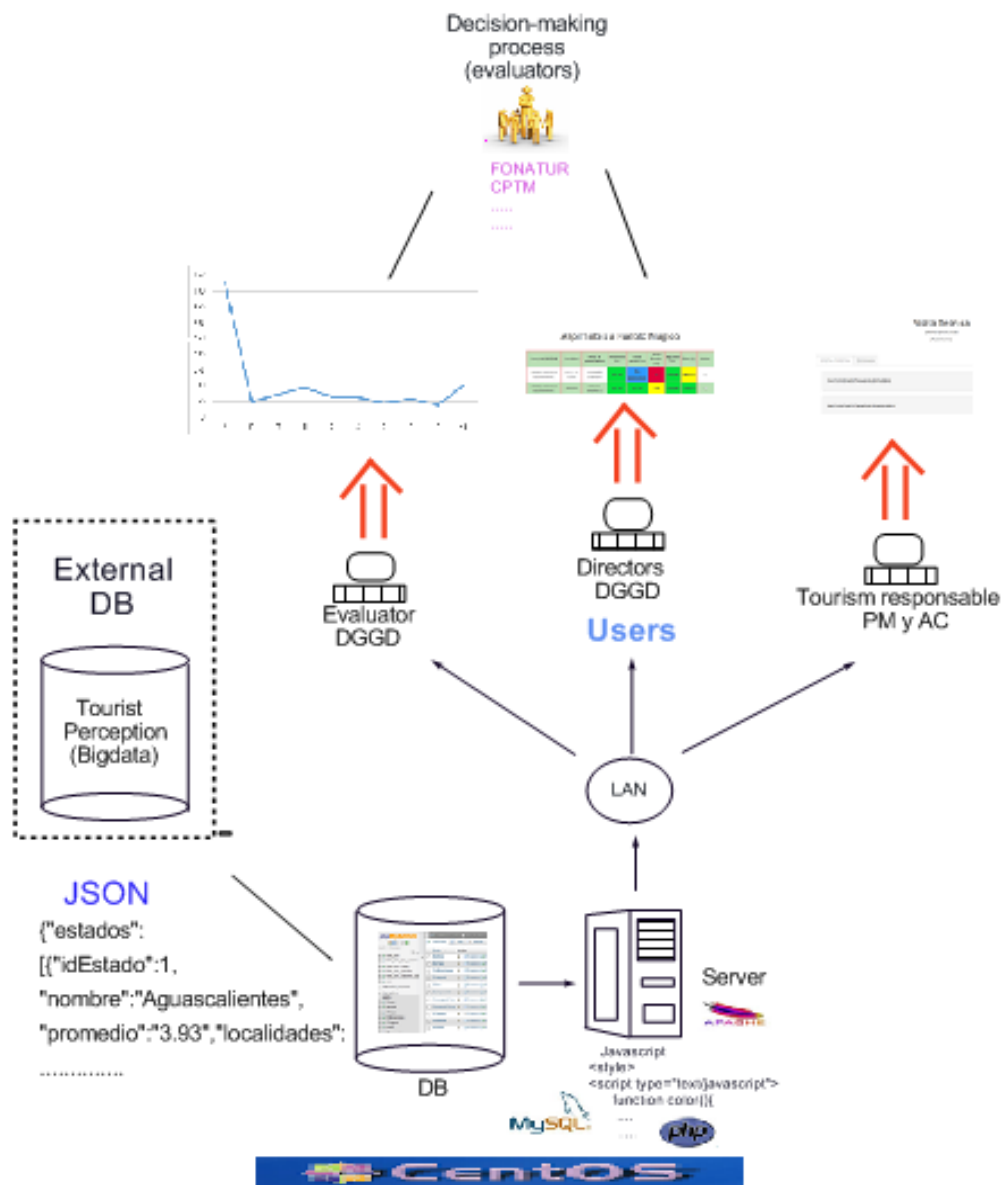
### System architecture

The requirements for the installation and execution of the system are:

- MySQL (open source) as Database Management System (SMBDR).
- Apache2 (open source) as a Web server.
- PHP 7 as language (open source), for Web development
- Linux type OS, CentOS or Ubuntu.
- HTML5
- To use HTML5, you must meet the requirements of the gob.mx Styles Guide, based on the Bootstrap Framework.

Figure 9 shows the architecture of the system, where hardware and software requirements are presented. The system takes an evaluation of an external database that stores the perception of the tourist (Bigdata), value that is required in a part of the evaluation of the magical towns.

Figure 5.9 System architecture. Own elaboration Project 242853



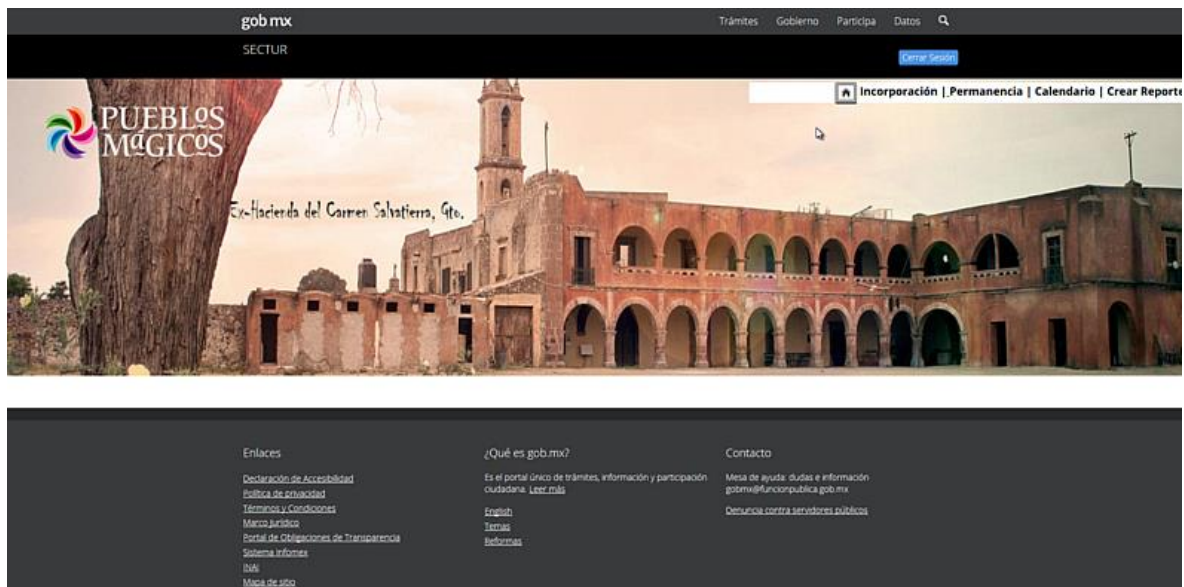
The following interfaces represent the system boot screen and user validation. Figure 5.10 represents the system startup interface, which can be displayed by the general public, but only with valid user and password is access.

**Figure 5.10** Home screen. Elaboration Project 242853



The administrator must enter the system with his user and password and then the screen of figure 5.11 appears.

**Figure 5.11** Administrator Screen. Elaboration Project 242853



The administrator proceeds to capture the start and end dates for the Incorporation and Permanence processes of the participating towns or magical Towns, in addition to the subprocesses that comprise them. As well as the date for priority tourist destinations (CA) to capture information related to the nine tourism components. This screen allows you to save the dates and display them on another screen. (See figure 5.12).

**Figure 5.12** Dates of the convocation Magic Towns and Competitiveness Agendas. Elaboration Project 242853

Proceso	Fecha de Inicio	Descripción	Fecha de Fin
Proceso de Incorporación	16/01/2017	JLKGH	31/01/2017
Proceso de Permanencia	16/01/2017	Captura	31/01/2017
Proceso de Agenda de Competitividad	16/01/2017	Captura	31/01/2017

In the next screen, the call with the bases for the Magic Towns Program is shown on the left side. On the right are reflected the dates of the Incorporation and / or Permanence processes, previously captured by the administrator, (see figure 5.13).

**Figure 5.13** Calling interface for Magic Towns Program and dates of the period. Elaboration Project 242853

PROCESO	SUB-PROCESO	FECHA INICIO	FECHA FIN
Proceso de Incorporación	Pre-registro	16/01/2017	30/01/2017
Proceso de Incorporación	Inscripción	06/01/2017	27/01/2017
Proceso de Incorporación	Acta Técnica	27/01/2017	27/01/2017
Proceso de Incorporación	Plan de Turismo	27/01/2017	27/01/2017
Proceso de Incorporación	Seg. Data	27/01/2017	27/01/2017

The person in charge of tourism of the locality or magic town enters the system to capture personal data and of the locality that represents (see figure 5.14). Also, this screen is used to capture the head of tourism of the state that is going to take charge of capturing the information of the Competitiveness Agenda.

**Figure 5.15** Screen of capture of information by the person in charge of the locality. Elaboration Project 242853

The screenshot shows a web form titled 'Responsable del Pueblo Mágico'. At the top, there is a navigation bar with 'gob.mx' and links for 'Trámites', 'Gobierno', 'Participa', and 'Datos'. The 'PUEBLOS MÁGICOS' logo is on the left, and a 'Convocatoria' link is on the right. Below the title, a red note states: 'Todos los campos Marcados con \* son Obligatorios'. The form is divided into two main sections: 'Pueblo Mágico' and 'Responsable'. In the 'Pueblo Mágico' section, there are four dropdown menus: 'Seleccione el estado:' (Elige tu estado), 'Seleccione el municipio:' (Elige tu municipio), 'Seleccione la localidad aspirante:' (Elige tu localidad), and 'Seleccione su proceso:' (Incorporación). The 'Responsable' section contains three text input fields: 'Nombre(s):' (Nombre), 'Apellido Paterno:' (Apellido Paterno), and 'Apellido Materno:' (Apellido Materno). Below these are three more input fields for 'Teléfono celular:', 'Teléfono oficina:', and 'Ext:'.

In the screen of figure 5.15, the evaluator logs in; who is in charge of validating the information that registers the person in charge of the locality or magic town from its registration to the Incorporation and / or permanence processes.

**Figure 5.16** Access to the system by the evaluator. Elaboration Project 242853

The screenshot shows a website for 'Programa de Incorporación y Permanencia a Pueblos Mágicos'. The top navigation bar includes 'gob.mx', 'Trámites', 'Gobierno', 'Participa', and a search icon. Below the navigation bar, there is a banner image of a hot air balloon over mountains. The text 'Vuelo en Globo Tequisquiapan, Gro.' is visible. The 'PUEBLOS MÁGICOS' logo is on the right. A menu in the top right corner includes 'Registro | Incorporación | Permanencia'. Below the banner, the title 'Programa de Incorporación y Permanencia a Pueblos Mágicos' is displayed. A text box at the bottom contains the following text: 'Un Pueblo Mágico es una localidad que tiene atributos simbólicos, leyendas, historia, hechos trascendentes, cotidianidad, en fin magia que te emanan en cada una de sus manifestaciones socio-culturales, y que significan hoy en día una gran oportunidad para el aprovechamiento turístico.'

In the interface of figure 5.16, the evaluator chooses the Registry option in the upper right menu. Then, the screen of figure 5.17 appears, where it selects the option Responsible Validation MP, to validate data of the person in charge of the Locality; Or choose the option Responsible Responsibility of Agendas, if you must validate the data of the person responsible for the priority tourist destination (Competitiveness Agenda).

**Figure 5.17** Menu to validate users. Elaboration Project 242853



Next, the interface of figure 5.18 is shown, where the evaluator can see registered users with their data to proceed to verify them and give them the go-ahead when activating the check box.

**Figure 5.18** Validate PM (magic towns ) or AC (competitiveness agenda). Elaboration Project 242853



When the evaluator proceeds to validate, the person in charge of the Locality or Competitiveness Agenda, the person in charge of the Locality or Competitiveness Agenda receives an email with user data and password so that he can enter the system (see screen of Figure 5.19).

**Figure 5.19** Receiving e-mail with username and password. Elaboration Project 242853



## Conclusions

The analysis of various sources of information, the Magic Towns Program (PM), the manual of indicators, the competitiveness agendas, alignment with the PND and the PST among other sources, is represented in the technological innovation that results in a system of information. Coya purpose is to support the Secretariat of Tourism (Sectur), in the processes of Incorporation and Permanence of the Magic Towns Program. In addition to incorporating a module where those responsible for the priority tourist destinations can enter destination information, through tourist components tourism supply, tourist demand, regulatory framework, accessibility, marketing, receiving community, security and environment; Which contain indicators to observe sustainability and competitiveness; As well as, progress in tourism development.

Through the results of the MPs, the filters of the SWOT elements with respect to the tour components and various reports, is intended to be useful in decision making for the various actors of the Sectur.

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