

*Selected information  
about the Transportation  
& Logistics Sector  
in Mexico*

*September 2014*

# *Insights of Transportation & Logistics Sector in Mexico*



**pwc**

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# *Executive Summary*

The challenges from the economic globalization and trade openness make competitiveness more pressing for Mexico. One of the keys to position the country as a global trade leader over the coming decade is the development of an international logistics capability that joins production, cost, quality and customer service to provide an integrated supply chain, indispensable to new business and trade practices.

Mexico has positioned itself as an attractive location for productive investment, something that has favored the recent increase in advanced manufacturing industries based in the country, such as aerospace, automotive, electronics, medical and food processing, among others. That has further encouraged investment in multi-modal transport corridors comprising inland ports, industrial parks and free trade zones in order to develop Mexico as a logistics platform and link it to world markets.

In most recent years, Mexico prepared a very ambitious infrastructure program in history, building and modernizing a 133,000 kilometer network of highways, 76 airports (64 with international flights), and 27,000 kilometers of railroad and 117 maritime ports – of which 68 are containers ports. Together, these means of transport connect states on the Pacific coast with those on the Atlantic, and the communities in the north of Mexico with those in the south. To date, in terms of volume and value, highways have been Mexico's most successful infrastructure developments. Ports, airports, public transportation, water networks, and rural access were among the areas where the previous Mexican government focused its efforts, while interest in the rail sector is expected to increase in the coming years.

Mexico's goal for 2030 is to rank in the top 20 percent of the World Economic Forum's Infrastructure Competitiveness Index.

An ever-improving supply chain infrastructure, a low-cost but increasingly skilled labor force and successful economic reform effort combine to make Mexico an attractive target for cross-border industrial opportunities.

Recognizing the importance of transportation and logistics for Mexico, President Enrique Peña Nieto launched the Transport and Communications Investment Program 2013-2018, which aims to secure and finance his ambitious master plan to transform Mexico into a hub for value-added logistics and transportation. The program involves more than 200 projects around 1.28 billion de pesos, where 582 million pesos are for transport infrastructure and 700 million are for communications.

# Mexico in the Global Context

The Global Competitiveness Report 2013-2014 assesses the competitiveness landscape of 148 economies, providing insight into the drivers of their productivity and prosperity.

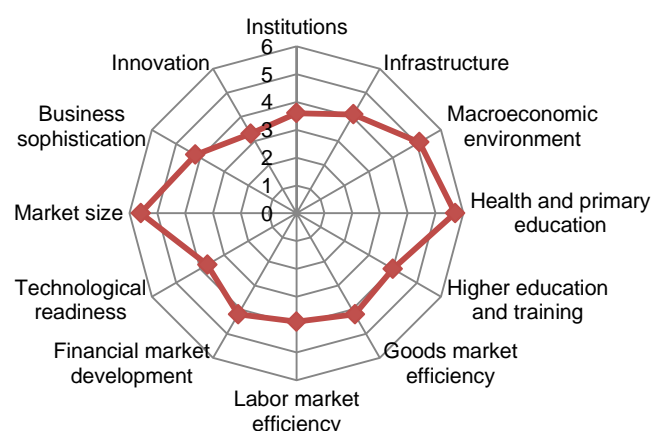
Mexico depicts a stable competitiveness profile during 2013-2014, and is ranked 55th overall. The country continues to benefit from a relatively stable macroeconomic environment (49th), a sound banking system (30th), a large and deep internal market allowing for important economies of scale (11th), reasonably good transport infrastructure (39th), and a number of sophisticated businesses (55th), particularly for a country at its stage of development. At the same time, under the political consensus achieved through the Pacto for Mexico agreements, the country has started to undertake some important and long-overdue reforms in the labor market and education. Moreover, further reforms in the goods and service market intended to increase levels of competition in key strategic sectors, notably in the energy sector, are foreseen before the end of the year.

A full and efficient implementation of these reforms after a period of political transition is expected to improve some of the most pressing challenges the country currently faces in terms of domestic competition (100th), a skills gap due to the educational system (119th), and labor market rigidities (99th). In addition, the competitiveness agenda for Mexico must include actions oriented toward strengthening the functioning of its institutions, notably in the fight against corruption (99th), and increasing the level of security (135th). To support its transition toward higher-value-added economic activities, it will be critical to foster the use of ICTs (83rd) and boost its innovation capacity (75th), which remain low.

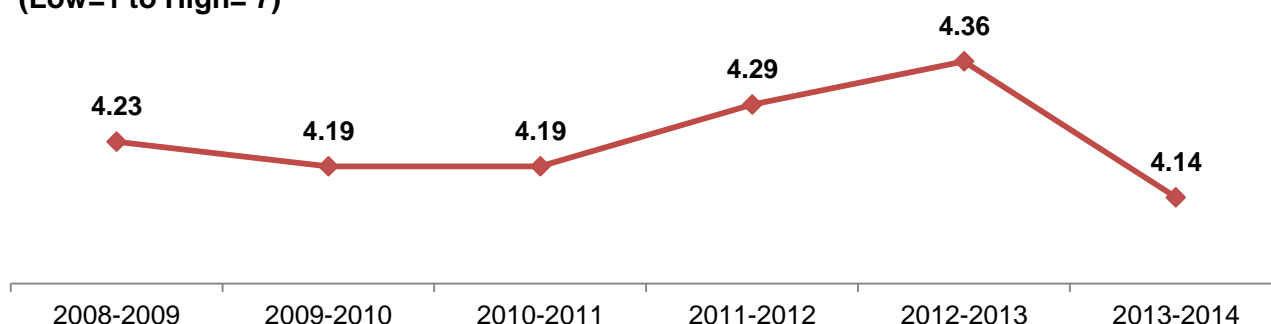
**The Global Competitiveness Index 2013-2014**

Rank (Out of 148)	Country	Score (1-7)
1	Switzerland	5.67
2	Singapore	5.61
3	Finland	5.54
4	Germany	5.51
5	United States	5.48
14	Canada	5.20
34	Chile	4.61
40	Panama	4.50
47	Barbados	4.42
54	Costa Rica	4.35
<b>55</b>	<b>Mexico</b>	<b>4.34</b>
56	Brazil	4.33

**Score of categories that contributed for Mexico Competitiveness Index 2013-2014**



**Mexico's Infrastructure Competitiveness, Global score (Low=1 to High= 7)**



Source: The Global Competitiveness Report 2013-2014

# Transportation in Mexico

During the last six-year administration of Mexico, public and private-sector investment in the country's transportation infrastructure grew significantly. For example, more than 12,000 miles of the national road system, including freeways, toll ways and rural roads, were upgraded, expanded and overhauled, taking the percentage of those that meet international standards to 90 percent.

Numerous large-scale projects, however, still need to be developed to carry people and products across the country, filling in gaps in Mexico's transportation networks and making new connections to overseas markets. States such as Jalisco, Michoacán, Oaxaca, Puebla, Querétaro, Tlaxcala, Veracruz and the Estado de México are well positioned to receive a sizable share of the capital expenditure slated to take place during the coming years, under Enrique Peña Nieto's management.

## Road Transportation

In Mexico, as in many other countries, the road network is the most widely used transport infrastructure, given the flexibility it gives the movers load and its large size, allowing services door-to-door delivery. The 370,000 kilometers of toll roads that Mexico has integrated freeways, highways, roads and trails that allow connectivity between almost all locations in the country, regardless of the number of inhabitants at their disposal and their economic relevance. The national network consists nearest 50,000 kilometers of roads of federal jurisdiction which nearly 9,000 are toll roads, as well as approximately 80,000 km of state highways, 170,000 km of rural roads and little more 70,000 km improved gaps.

### Mexico Highway Network in 2013



Source: GeoMexico

## Railway Transportation

The Mexican railway system consists of 26,727 km of railways, of which 20,722 km are trunk and branches, and 6,005 are secondary, of which 4,450 km are auxiliary routes (yards and sidings) and 1,500 km are owned by private individuals, connected to various trunk roads. They are currently licensed to private consortia for operation 17,799 km in 3 main trunk and 3 short lines and Railway Terminal del Valle de Mexico, a joint venture company where the federal government has a 25% of actions. Meanwhile, the 222 km line of the Isthmus of Tehuantepec are administered by the federal government.

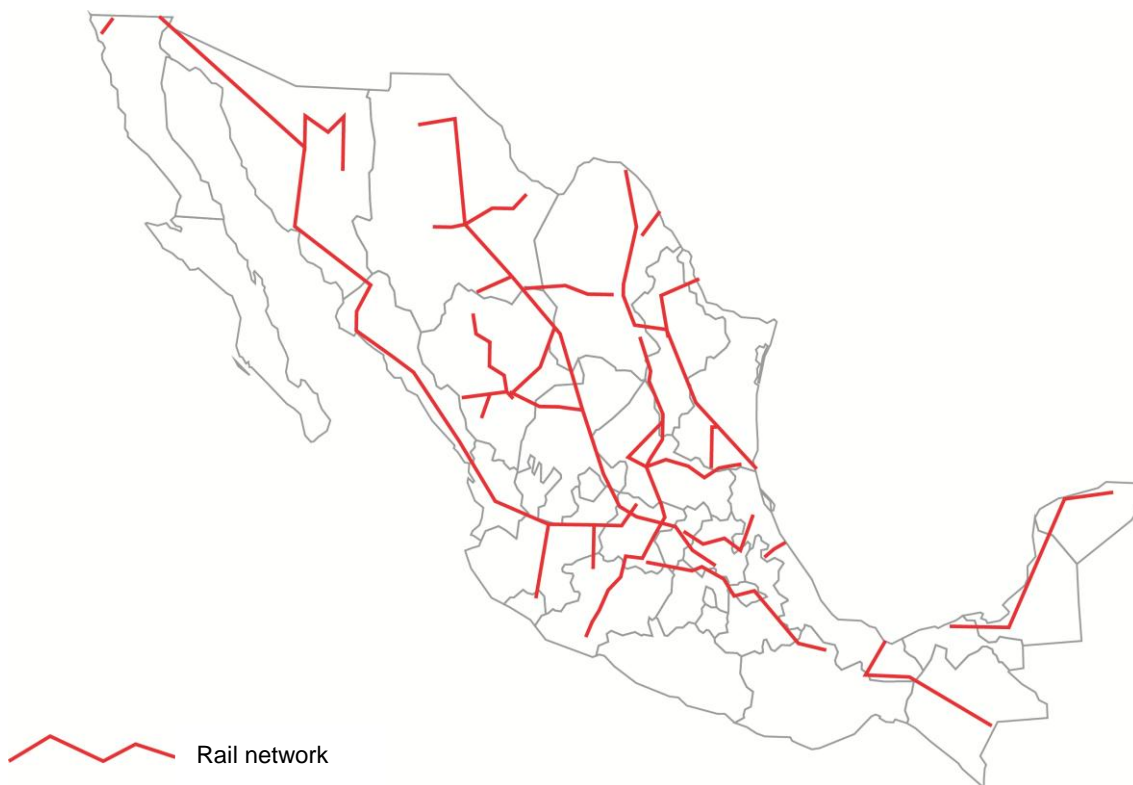
The coverage of the railway network comprises longitudinal routes from Distrito Federal to the borders of Nuevo Laredo, Matamoros and Piedras Negras, in the Northeastern region; from Distrito Federal to Ciudad Juarez, in the North Central region; and from Distrito Federal to Nogales and Mexicali in the Pacific Northwest, including the ports of Mazatlan, Topolobampo and Guaymas. To the southeast of the country runs the route Distrito Federal to Cordoba, Merida and Coatzacoalcas, while to the south, the route includes the Isthmus of Tehuantepec and the corridor of Ixtepec, Oaxaca, to Ciudad Hidalgo, Chiapas, on the border with Guatemala.

For its part, the transverse rail corridors link major seaports that have rail connectivity, among them Veracruz, Tampico and Altamira in the Gulf, and Manzanillo, Lazaro Cardenas and Salina Cruz on the Pacific coast. Other East-West corridors link Queretaro with Celaya, Irapuato and Guadalajara; Torreón with Monterrey and Matamoros; Topolobampo with the border of Ojinaga in Chihuahua; Aguascalientes with San Luis Potosi and Tampico.

Today, with over 15 years of operation of the privatized Mexican railway system, that began in June 1997, the concessions have invested a considerable amount of economic resources that have resulted in the modernization of roads, bridges, tunnels, sidings, yards and other infrastructure components. All of that allows the load current capacity for four-axle truck to be positioned at 130 tons in almost the entire system, except for the corridors of Pacific and Topolobampo-Ojinaga line with 120 tons, and the lines of Mexico in the southeast of the country, which range between 100 and 120 tons per car.

Also, it has incorporated modern systems for bidirectional use of roads, new operating patios, communications with high technology and devices AEI for dynamic train location.

### Mexican Rail Network in 2013



Source: SCT



## Water Transportation

During the last decade, Mexican ports have gone through a modernizing process that has allowed them to significantly increase cargo movement. Although most of these projects were severely affected by the economic crisis, the gradual economic recovery is allowing the continued development of some of the more important transportation infrastructure projects.

Based on information available from the SCT, we know that our country has in its 11,500 km of coastline, around 117 different types of port facilities and vocations, including harbors, commercial, industrial counted, oil, fisheries, tourism and military and national security purposes. Through them, mainly commercial and oil, Mexico makes a growing activity of international exchange of goods and merchandise with virtually every nation on the planet.

The commercial port facilities of greater relevance in the country by the annual volume of goods that operate (except oil), as well as the number of foreign shipping companies that operate them and their frequencies of service are the ports of Manzanillo and Lázaro Cárdenas on the Pacific coast, and Veracruz and Altamira on the Gulf coast. Through them, Mexico maintains international maritime trade relations with countries on 5 continents, while contributing over 95% of the tonnage of containerized cargo moving in Mexican ports.

### Mexican Major Commercial Ports in 2013



Source: AMPIP – The Mexican Association of Industrial Parks

## Air Transportation

Mexican airport system consists of 85 airports and 1,385 airfields.

Until 1998, out of the total aerial installations, 59 were managed and operated by the Airports and Auxiliary Services (ASA) parastatal, while 26 were in charge of the ministries of National Defense and the Navy, as well as state and municipal governments.

From 1998, 34 major concessions of Mexican major airports became private groups, being integrated in a system of 85 facilities, as follows:

- 12 assigned to Pacific Airport Group (GAP)
- 13 at Central-North Airport Group (OMA)
- 9 to Southeast Airport Group (ASUR)
- 24 are managed by ASA and
- 27 by the secretaries of National Defense and the Navy, as well as various state and municipal governments.

### Mexican Airport System in 2013



Source: SCT



## Pipeline Transportation

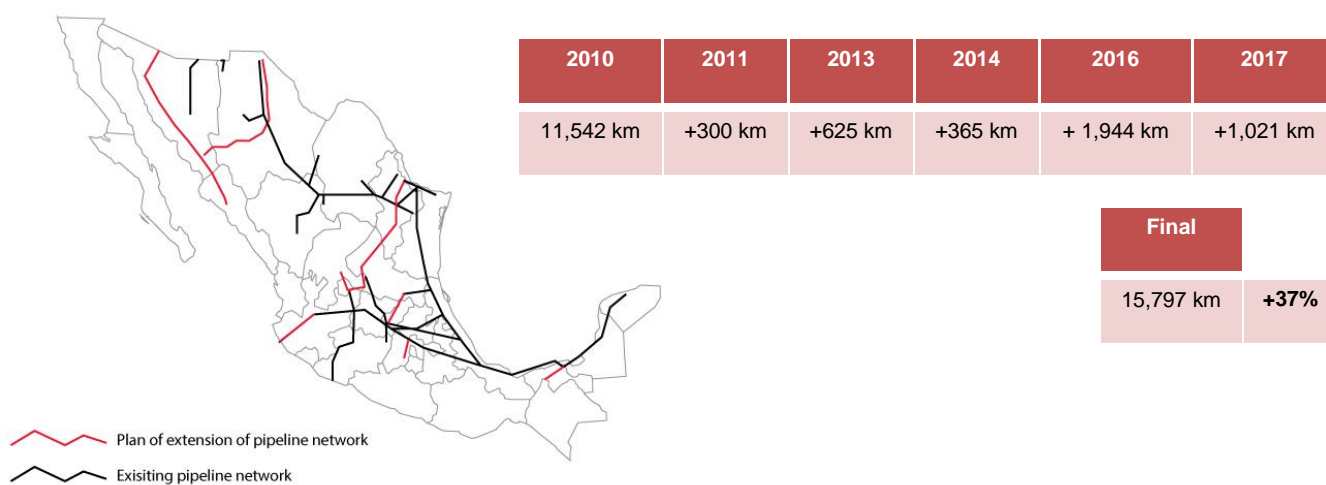
PEMEX operates a pipeline network in Mexico, connecting major production centers with domestic refineries and export terminals.

At the end of 2012, PEMEX pipeline network measured approximately 68,693 kilometers in length. Of these pipelines, 53,772 kilometers are currently operational and 14,921 kilometers are out of operation.

Approximately 8,573 kilometers of the pipelines currently in operation transport crude oil, 8,461 kilometers transport petroleum products and petrochemicals, 13,877 kilometers transport natural gas, 1,538 kilometers transport LPG, 1,350 kilometers transport basic and secondary petrochemicals, 3,205 kilometers are crude oil and natural gas gathering pipelines, 11,892 kilometers are production lines (discharge lines) and 4,876 kilometers correspond to other services, including aqueducts.

Having one of the longest pipeline infrastructure in the world, Mexico is planning to expand its gas network by 37% percent by 2017.

### Construction of new pipelines in Mexico up to 2017



Source: SENER and PEMEX

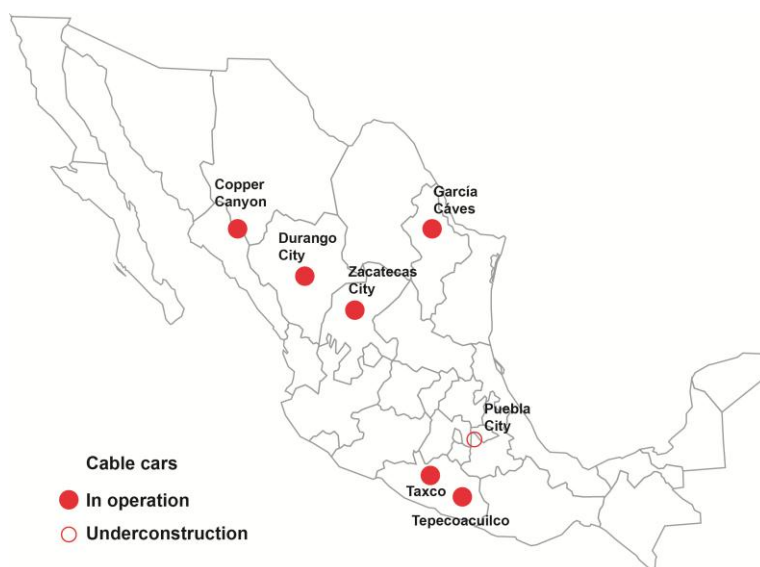
## Cable Transportation

There are at least six cable cars (teleféricos) operating in Mexico, as well as one whose construction was so controversial it was halted earlier this year:

- Durango City, Durango
- Copper Canyon, Chihuahua
- García Caves, Nuevo León
- Zacatecas City, Zacatecas
- Hotel Montetaxco, Taxco, Guerrero
- Hotel Vida en el Lago, Tepecoacuilco, Guerrero
- Puebla City, Puebla (currently halted)

All these cable cars are primarily designed for sightseeing and tourism, rather than as a means of regular transport for local inhabitants.

### Mexican Cable Transportation System in 2013



Source: GeoMexico

# Logistics in Mexico

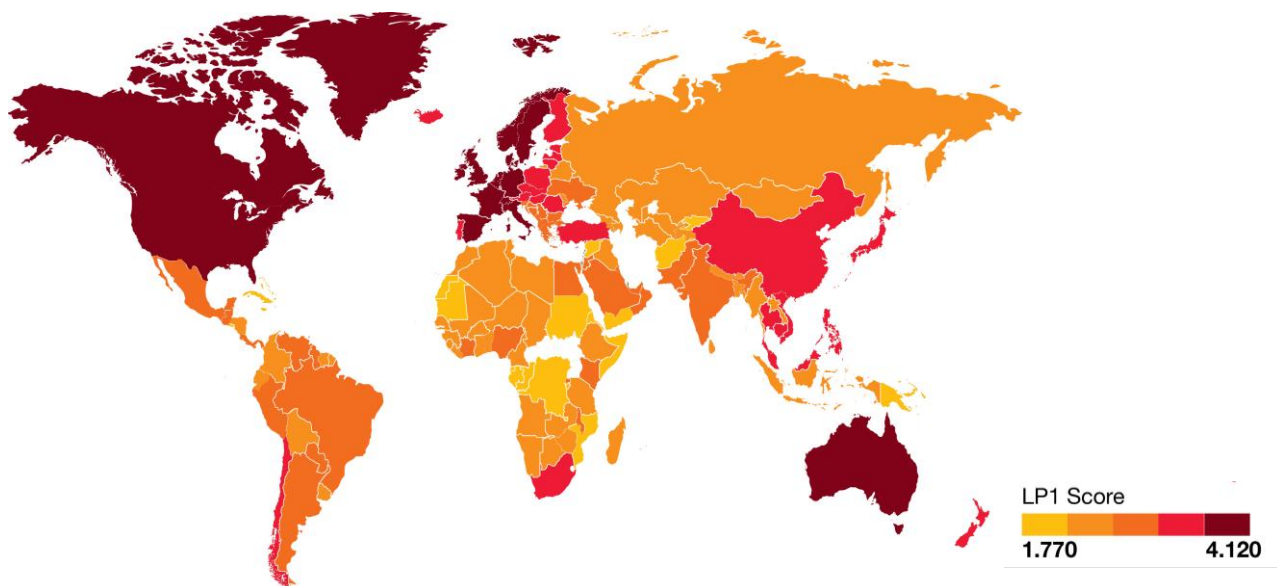
Currently, the logistics industry in Mexico is set to one of the most modern in Latin America. The first logistics concepts were present in the Mexican automotive industry, where consumers demanded quality, functionality and speed of delivery. From this, changes in complementing various areas, specializations and strategic alliances that enable market expansion were generated.

The World Bank's Logistic Performance Index for 2014 has Mexico in 50<sup>th</sup> place out of 160 countries (Germany in 1<sup>st</sup> place) in terms of logistic efficiency, a fall of three place from the previous report. Mexico's logistics sector can be the platform to launch different products to all continents.

Mexico is ranked below countries like Vietnam and Saudi Arabia.

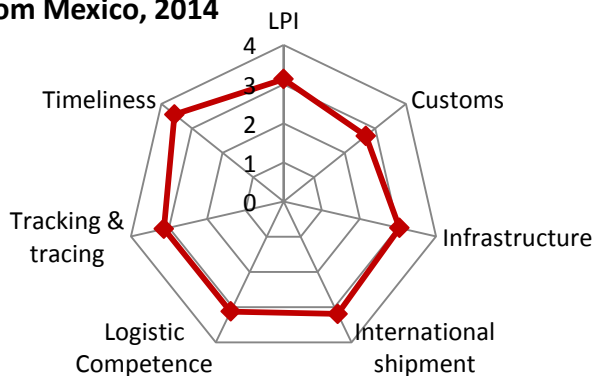
One of the strengths of the country is the free trade agreements. According data from CIA World Factbook, Mexico has free trade agreements with over 50 countries including Guatemala, Honduras, El Salvador, the European Free Trade Area, and Japan - putting more than 90% of trade under free trade agreements. In 2012, Mexico formally joined the Trans-Pacific Partnership negotiations and formed the Pacific Alliance with Peru, Colombia and Chile. Moreover, the logistics in Mexico represents around 15% of national GDP. Out of that, 60% corresponds to transport, meaning that overland transport remains one of the most important sectors in the country, covering more domestic distribution and allowing trade between North, Central and South America.

## Global Logistic Performance Index 2014



Source: The World Bank

## Logistic Performance Index from Mexico, 2014



Source: The World Bank

**The World Bank's Logistic Performance Index for 2014 has Mexico in 50<sup>th</sup> place out of 160 countries (Germany in 1<sup>st</sup> place) in terms of logistic efficiency, a fall of three place from 2012's report.**



## Logistics Parks

According to the *Banco Nacional de Obras y Servicios Públicos* "The Strategic Fiscal Campus" (RFE ) is a regime established in the Customs Act that allows companies operating in its internal system, the introduction (for a limited time) of foreign goods, domestic or nationalized, to be the subject of handling, storage , keeping, exhibition, sale , distribution, production, processing or repair. " ( For more information: <http://www.banobras.gob.mx/> ).

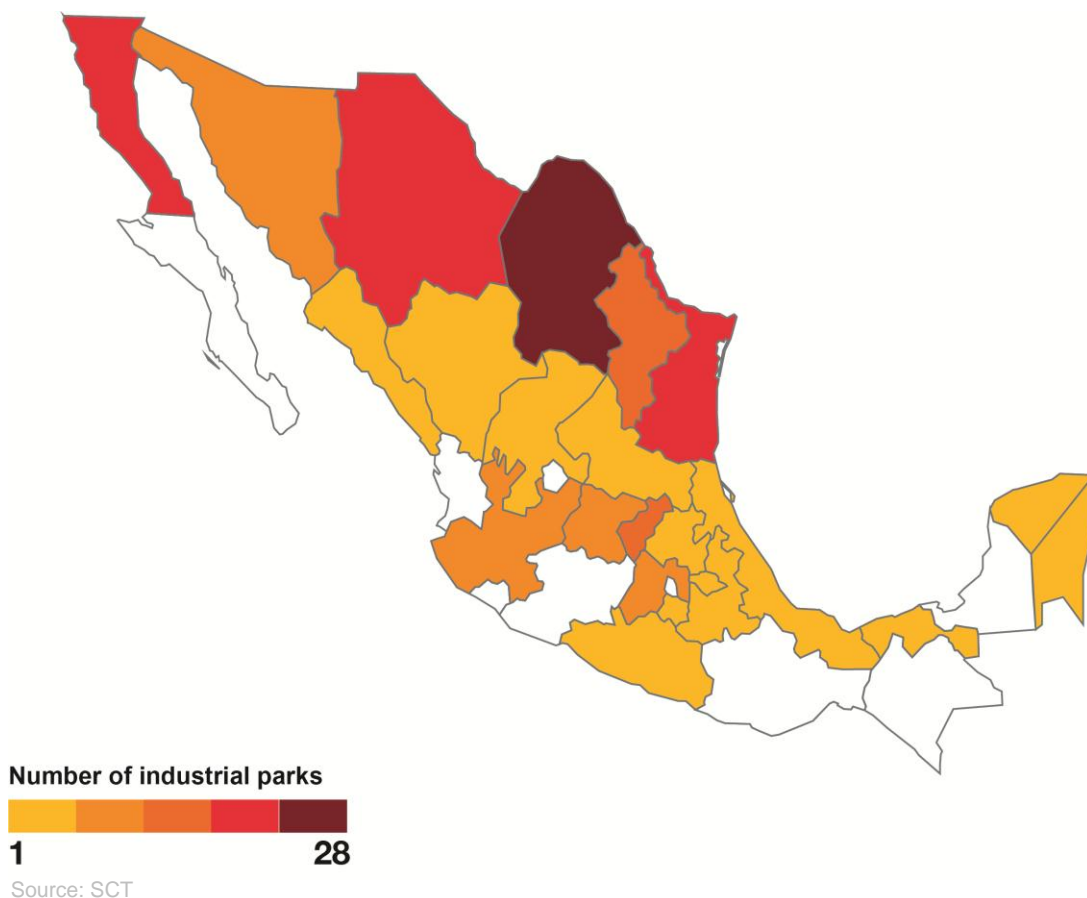
When it was decided to implement this strategy to revive the economy, " it was established that the enclosures must be adjacent to a customs office or tax enclosure ( interior, border , maritime or airport ) be not less 20 hectares , being bordered and protected , and have CCTV " among other measures, in order to prevent leakage of goods to the local market circuit. The length of stay in the national territory can be up to two years.

Currently in Mexico you can find seven "Strategic Fiscal Campus" in San Luis Potosí, Nuevo Leon, Chihuahua (Ciudad Juárez) , Michoacán (Lázaro Cárdenas) , Chiapas (Puerto Chiapas) and soon in Ciudad Obregon , Sonora.

Integrates by supply surface, ships and facilities for productive activities, storage and distribution infrastructure include port, rail and road connectivity, or a combination of these, as well as a menu of complementary logistics services, the characteristics, locations , procedures, technology, convenience and price meet the most demanding requirements of various industrial, commercial and service sectors, with the profile and flexibility, as well as a high degree of sustainability, in line with the standards world-class in the art.

As noted, distributors perform main business activities through distribution centers. They buy products from manufacturers, store them in warehouses and ship them to retailers or directly to their stores. Retailers often maintain their own distribution centers separate from their retail stores. Online retailers perform order fulfillment solely from distribution centers.

### Distribution of Industrial Parks in Mexico



# Mexican's Transport & Communications Investment Program 2013-2018

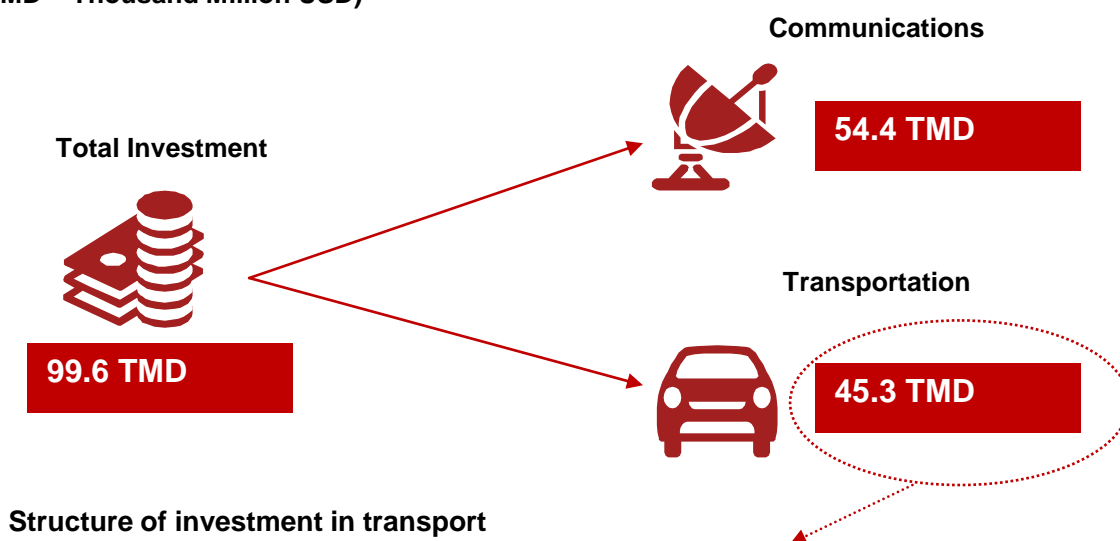
Mexico is opening up investment opportunities in infrastructure to boost its standing as a global economic hub, tourist spot and high tech innovator.

In mid 2013, President Enrique Peña Nieto announced the Communication and Transportation Infrastructure Investment Plan. The National Infrastructure Program, which will guide the nation's development plans for the next six years, is expected to be announced in early 2014.

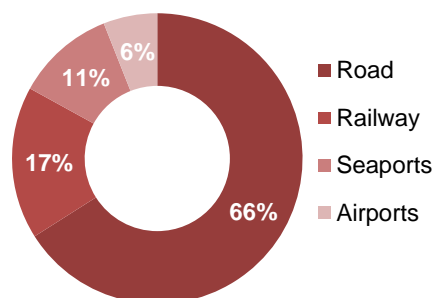
The top infrastructure sectors are:

- **Telecommunications** – Broadband internet, closing digital gap;
- **Energy** – Electrical Power Generation and Transmission, Oil & Gas Production, Refinery, Gas & Petrochemicals, Geothermal and Biomass;
- **Transportation Infrastructure** – Toll Roads, Port Infrastructure, Railways and Public Transportation;
- **Environmental Technology** – Water Supply and Sanitation, Management and Pollution, Disposal Technologies;
- **Aviation** – Airports and Ground Support.

## Mexican Infrastructure Investment Plan for 2013-2018 (TMD – Thousand Million USD)



## Structure of investment in transport infrastructure (% of total)



# Sector Forecast

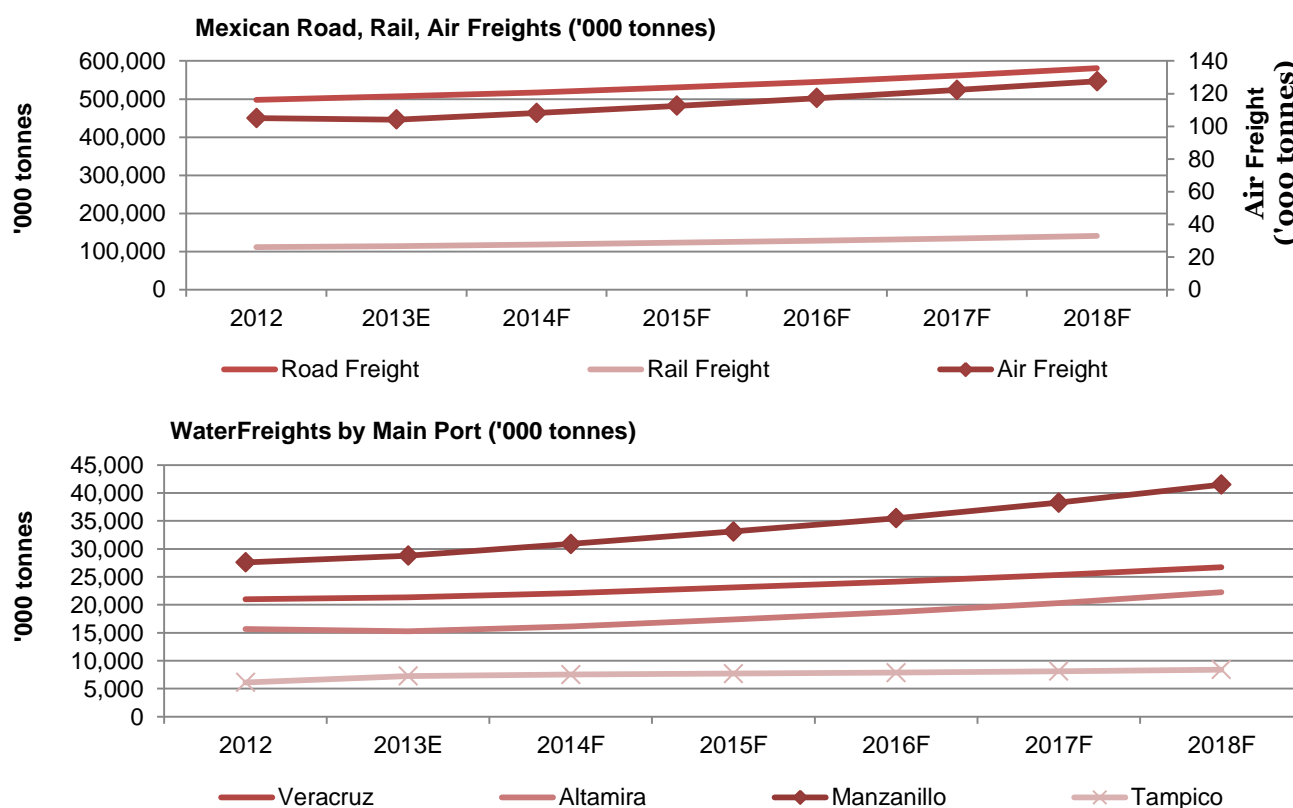
The Mexican freight transport sector is inextricably linked to the US, just as the Mexican economy as a whole is dependent on its giant neighbour to the north. With the US cementing its recovery, so the outlook for Mexico over the medium is brighter than first previsions. In addition to favourable data out of the US, Mexico's key export market, BMI\* noted that autos manufacturers Chrysler and Nissan have indicated plans to expand manufacturing capacity at their plants in Mexico.

BMI prediction remain fairly optimistic with regards to growth in the air freight sector, forecasting growth of 3.8% in 2014, following a decline in previous years. It believes that the growing disposable incomes of Mexico's expanding middle classes will support an increase in volumes, as demand for high-end consumer goods, often transported by air freight, increases. Equally, a number of developing specialist industries in Mexico will also present a need for increased air freight.

Road freight makes up the bulk of landside freight transport in Mexico; in 2009, road haulage volumes, at 451,000 tonnes, made up 79.8% of Mexico's total, followed by rail at 16.0% and inland waterways at 4.2%. Although according to BMI's forecasts road haulage's share of Mexico's landside freight traffic will fall slightly in 2013, to 77.5%, it's still by far the dominant mode.

BMI's forecast growth of 3.6 % in Mexican rail freight volumes in 2014 would take volumes handled to 118,248mn tonnes, up from 2013's estimated figure of 114,112mn tonnes. Over the medium term, projections are that growth will average 4.4% per annum, with risks largely to the upside as rail links with the US and connections of the rail network to Mexican ports improve.

Maitime freight forecast would see 30.871mn tonnes handled by year-end, cementing the port's recovery from the global downturn; Manzanillo saw its tonnage throughput decline by 18.2% in 2009, but pre-downturn 2008 throughput of 22.30mn tonnes has now been recouped and eclipsed. As mentioned above, growth in Mexican ports will be supported by increasing investment by companies in intermodal links between the facilities and major consumer markets in the US. The APMT Lazáro Cárdenas facility in particular has been developed with an eye to this trade.



\*Source: BMI information

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The Knowledge Center delivers knowledge and experience through:



**Provide consulting and training in the use of various knowledge management tools.**



**Research and information searches, based on the information needs of PwC staff & partners.**



**Participating in the strategy design, related to global Knowledge Management & Innovation Management.**



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