



¿Why Bombardier chose Mexico as the site for its
New Global Manufacturing Aircraft Project?

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México



Content

Mexico Aerospace Industry at the Glance

- Industry location and distribution
- Export Growth
- Main components manufactured in Mexico
- Other products manufactured in Mexico
- Industry surplus
- Exports per country
- Mexico's Aerospace Industry moving at a fast pace

Our dream: Mexico the Manufacturing Hub of Aerospace Industry in North America

- Our dreams based on facts
- Astonishing transformation
- The three industry pillars
- Infrastructure
- Human Resources
- Regulatory

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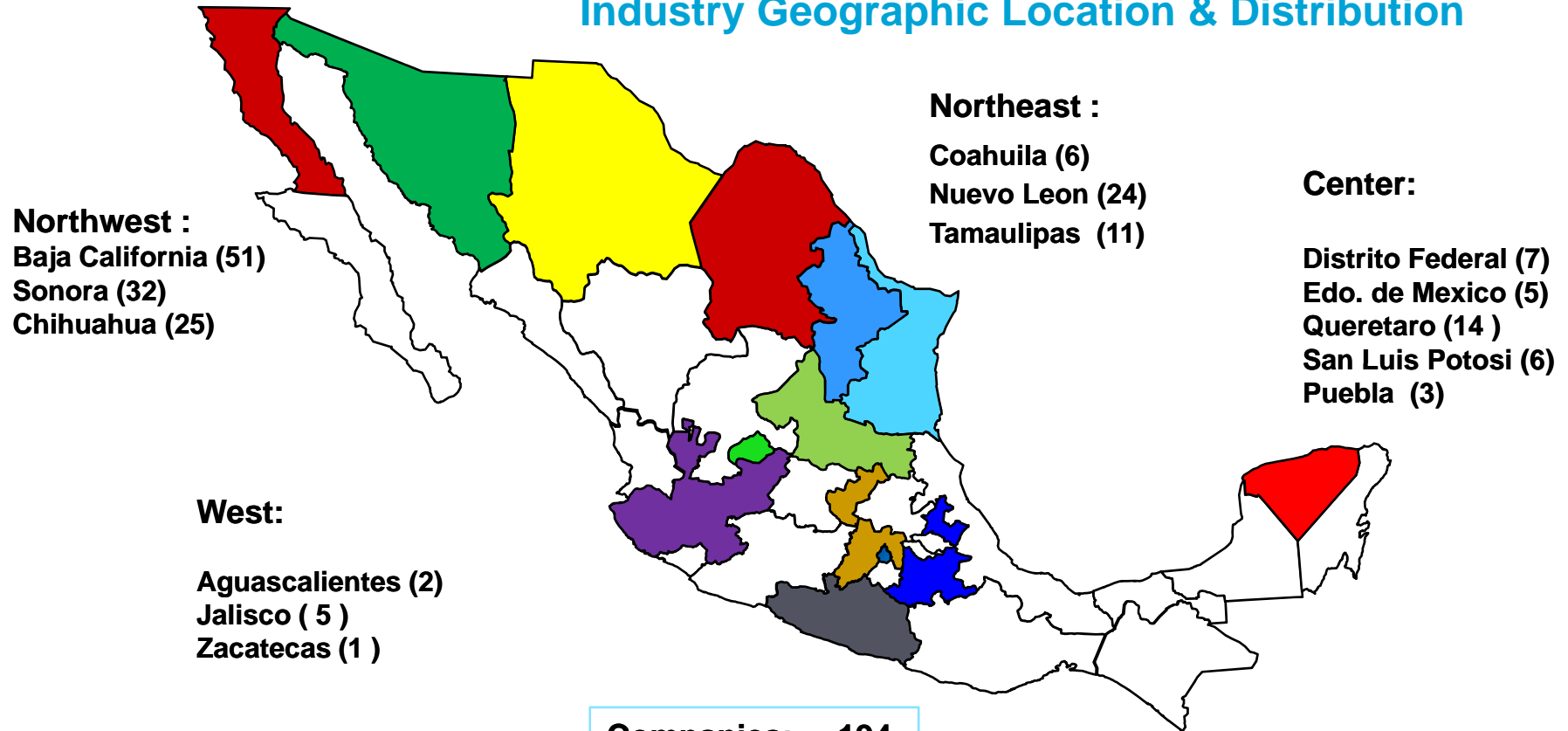
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Mexico's Aerospace Industry at the Glance

Industry Geographic Location & Distribution



Source: Direccion General de Industrias Pesadas y de Alta Tecnologia (SE), SCT, ProMexico and FEMIA

Companies:	194
States:	16
Jobs:	27,000



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Mexico's Aerospace Industry at the Glance





Mexico's Aerospace Industry at the Glance (cont)



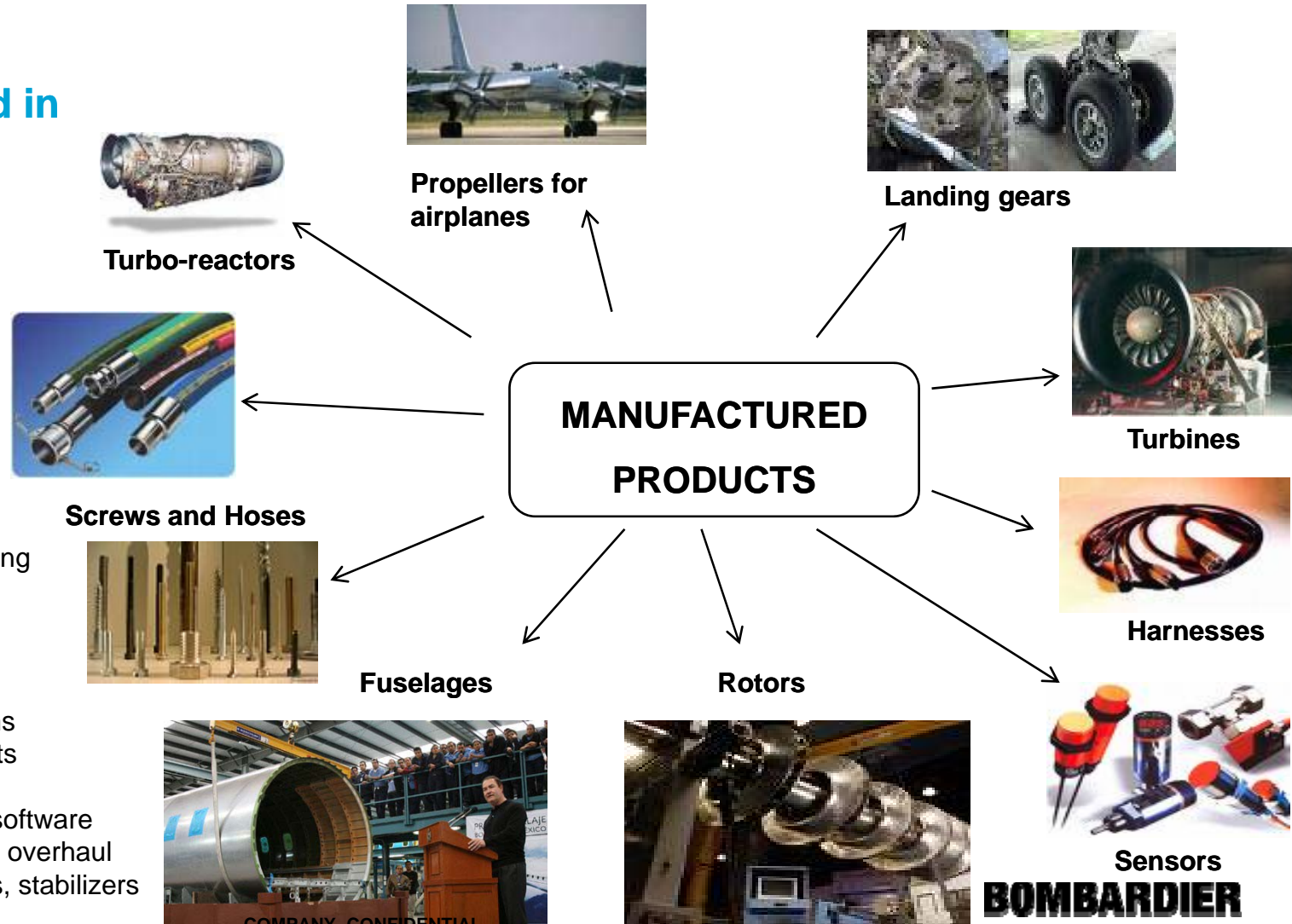
- Recent development in Mexico, but its growth has been accelerated
- Increasing number of companies totaling 194: 79% manufacture, 11% repair & maintenance, and 10% engineering and design
- Revamping employment: 27,000 direct jobs in 16 States
- Growing exports: \$ 2,728 USM in 2007 and
- \$ 3,315 USM in 2008
- Plans to reach higher export numbers: \$ 4,050 USM in 2009 (14% growth over 08)

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Mexico's Aerospace Industry at the Glance (cont)

Main & Other Products Manufactured in Mexico



- Motor parts
- Engineering systems
- Components for landing systems
- Plastic Injection
- Heat exchangers
- Precision Machinery
- Audio & video systems
- Electronic components
- Fuselage insulation
- Manufacture control software
- Maintenance repair & overhaul
- Harnesses, fuselages, stabilizers



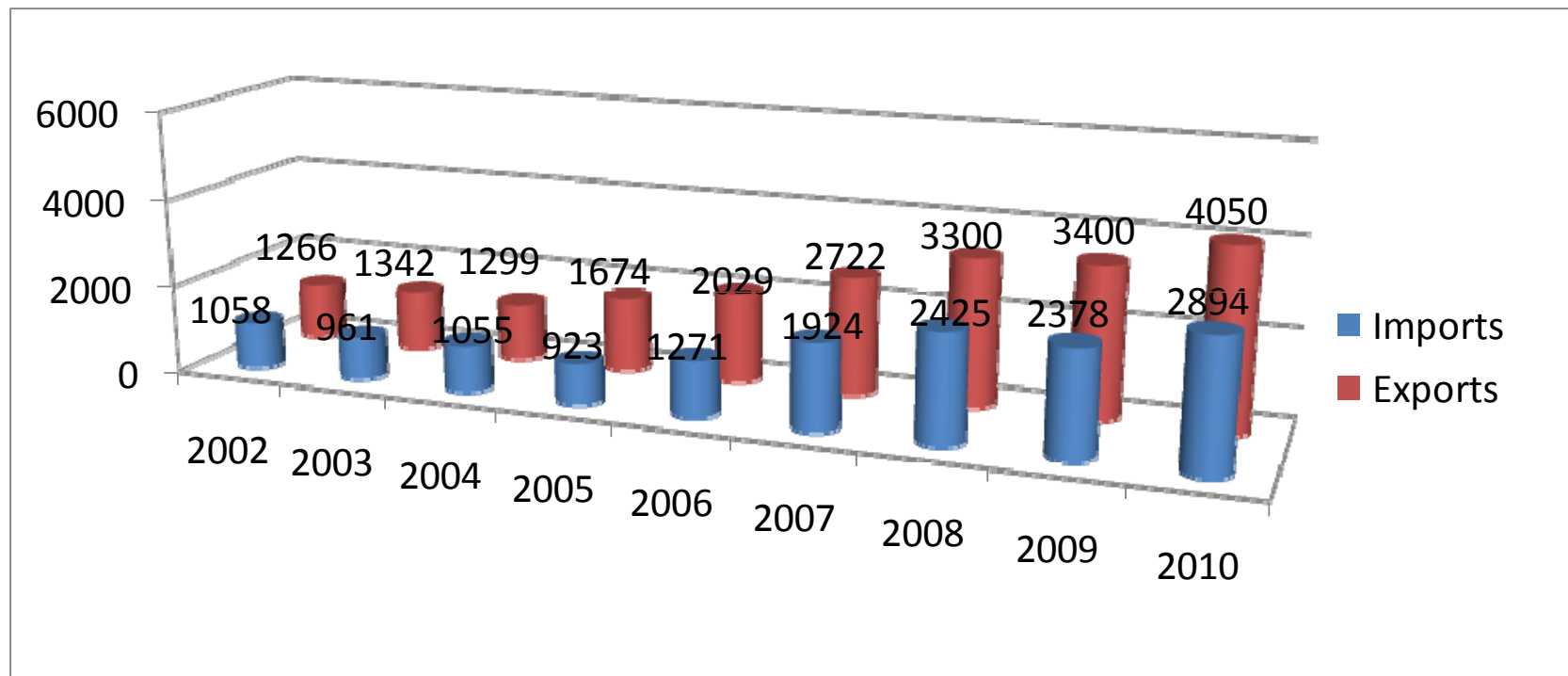
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Mexico's Aerospace Industry at the Glance (cont)



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Mexico's Aerospace Industry at the Glance (cont)

Aerospace Industry in Mexico moving at a fast pace

1st Stage



Simple assemblies
Aero-parts manufacture
Consolidation of the industrial capability

2nd Stage



Manufacture of fuselages
and more complex goods

3rd Stage



Airplanes assembly
Design
Innovation

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Our dream: Mexico the Manufacturing Hub of Aerospace Industry in North America

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Mexico the Manufacturing Hub of Aerospace Industry in North America



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Mexico the Manufacturing Hub of Aerospace Industry in North America


Our Dreams are based on facts:

- **Mexico, the cross roads of the world (geographically!). In addition the largest FTAs network with duty free access to more than 45 countries including the richest trading blocks**





Mexico the Manufacturing Hub of Aerospace Industry in North America

- 
- **Mexico, the cross roads of the world (geographically!). In addition the largest FTAs network with duty free access to more than 45 countries including the richest trading blocks**
 - **Mexico undergoing major structural reforms with manufacturing niches based on its own competitive and comparative advantages (i.e. automotive)**



Mexico the Manufacturing Hub of Aerospace Industry in North America

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- **Mexico, the cross roads of the world (geographically!). In addition the largest FTAs network with duty free access to more than 45 countries including the richest trading blocks**
 - **Mexico undergoing major structural reforms with manufacturing niches based on its own competitive and comparative advantages (i.e. automotive)**
 - **Mexico's clear vision with the aerospace industry through the enactment several programs that have boosted investment and competitiveness in the sector (Mexico now ranks 10th as supplier of components for the American market)**



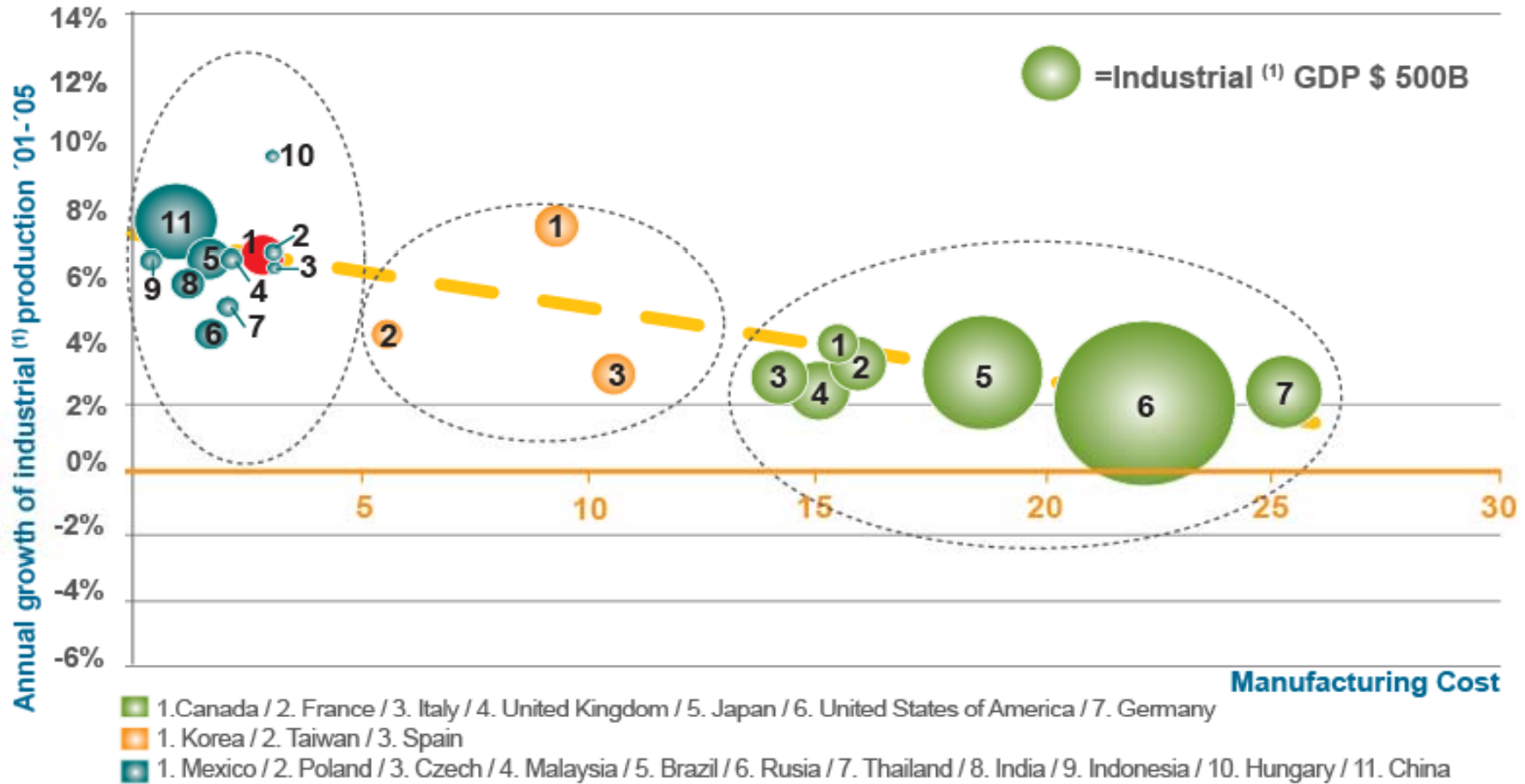
Mexico the Manufacturing Hub of Aerospace Industry in North America

- **Mexico is positioning itself as a key supplying market for the worldwide Aerospace Industry (...following a strong and dynamic manufacturing automotive sector)**





Mexico the Manufacturing Hub of Aerospace Industry in North America



MEXICO offered low-cost, and geographic proximity

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

- Under President Calderon the **Development National Plan (2007 – 2012)** designated the Aeronautic/Aerospace industry along with Iron, Steel and Nano-Technology as a high value added **strategic** sectors for the Nation
- Ministry of Finance released exclusive **customs tariffs** to facilitate imports of parts and components for manufacturers or assemblers of aircraft
- On fall of 2007 Mexico and US signed the **Bilateral Aviation on Safety Agreement (BASA)** where Mexican Civil Aviation Authorities would eventually gain the capacity to provide airworthiness certificates to suppliers that manufacture in Mexico

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

- We are in a country that has done an astonishing transformation since the inception of NAFTA, the questions on the house are:
 - **Is Mexico where it should be in the Aerospace Industry?**
 - **To answer we must know where we want Mexico to be!**
- In a global world, are we taking enough right decisions to bring Mexico forward competitively?
 - **In light of what the BRIC**
- I will now refer to what I think will trigger Mexico's growth in the Aerospace business: the three pillars of any Aerospace industry and how good Mexico is doing it!

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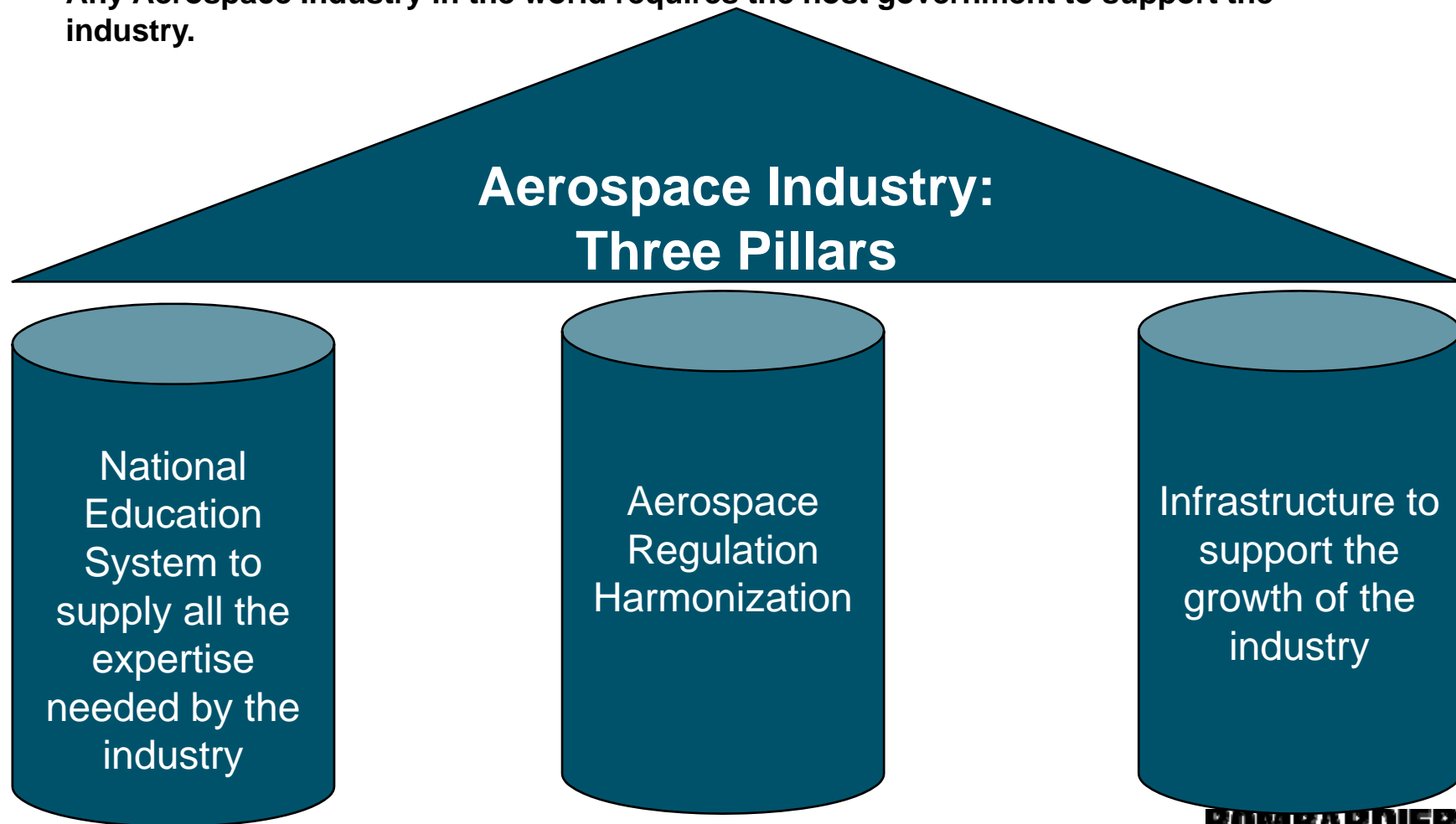
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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

- Any Aerospace Industry in the world requires the host government to support the industry.



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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Infrastructure:

- **Mexico is the cross roads of the world, but still needs State-of-the-Art infrastructure, because the success ratio of the industry is demanding it**
 - President Calderon launched the National Fund for Infrastructure, but
 - We need to “*land*” the FONADIN benefits and translate them into “real” tangible benefits
- **Queretaro has an extraordinary airport facilities, but**
 - Needs a State-of –the-Art customs office to facilitate trade and operations
- **Cluster is a total success, but**
 - Now is running short of land
- **We can use the NAFTA Road other neighboring states on target to ship products up North, but**
 - We may need additional road and rail road facilities to enable seamless exports/imports
- **NAFTA has yielded good results, but**
 - We are not a fully integrated Region
 - We are not maximizing the potentiality of the Region
 - We are not competing with at our maximum potential

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Human Resources:

- **I am happy to say that (UNAQ) National Aerospace University at Queretaro has been formed early this year, and that all required educational curricula is on its way; however,**
 - We wish UNAQ could accelerate the construction of its campus and could develop laboratories to test carbon composite technology
 - We want UNAQ to become an university of reference in the handling of carbon composite technology
- **We also know that other educational institutions are undertaking major changes on their curricula to adapt to Aerospace carriers**
 - IPN (Instituto Politecnico Nacional), UNL (Universidad de Nuevo León), ITESM (Tecnologico de Monterrey), CONALEP
 - We want to see that engineers and technicians are graduated in enough numbers so industry growth can be full backed up by skilled professionals in the field

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Human Resources (cont)

- **Mexico has shown a tremendous power to adapt to new manufacturing techniques**
- **Queretaro a Site of reference in Bombardier Manufacturing World**
- **Bombardier decided to invest \$343 USM for its all new Learjet 85 carbon composite aircraft based on the success of its Queretaro Plant**
- **Vast majority of Bombardier's work labor in Queretaro has been graduated in UNAQ and the Universidad Tecnologica de Queretaro (UTEQ)**
 - However the Industry will demand more engineers and technicians
 - With the right decision and government support, Mexico should become a country of reference in the handling of carbon composite technology

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Regulatory Pillar:

- **Mexico has done an extraordinary effort and work to catch up with International regulatory standards :**
 - Mexico has entered into FTA with more than 45 countries including the richest trading blocks (NAFTA, EUFTA, Mexico-Japan FTA, etc.)
 - Has passed legislation on Antitrust Practices, Copy Rights, Industrial Property, Human Rights and even Judicial Reform where public oral hearings will be allowed
 - Has recently approved a partial Energy Reform where all different political parties – jointly – agreed to implement changes regarding the National Oil Industry of Mexico (...; however, shore floor to DFI is expected to come)
- **However, the Aerospace Industry requires specific regulations in order to develop fully its manufacturing potential**

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Bilateral Aviation on Safety Agreement (BASA)

- **BASA needs to be implemented to make Aerospace Industry grow, its industrial foot print in Mexico**

- **In addition, it is also necessary for Mexico to start negotiations with Canada Transport (CT) and European Aerospace Authorities (EASA) to obtain equivalent of BASA.**

- **BASA has yet 5 different implementation programs to define:**
 - **IPA (Implementation Program for Aircraft)**
 - Negotiations completed on Sept 08. Final announcement will be made by Mexican Government on November 2009
 - **MIP (Maintenance Repair & Overhaul)**
 - TBD
 - **SIP (Simulator Implementation Program)**
 - TBD
 - **EIP (Environmental Implementation Program)**
 - TBD
 - **TIP (Training Implementation Program)**
 - TBD

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WHY QUERETARO?



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WHY QUERETARO?

- **Strong engagement of the State Government in the Aerospace industry.**
- **City with well-developed infrastructure for manufacturing industries.**
- **Strong presence of manufacturing multi-nationals.**
- **Good transportation Infrastructure, especially towards the North.**

- **Low turnover of workforce.**
- **Low crime rate.**

- **Proximity of Mexico City (~200 km, 26M population) without actually being in Mexico City.**

- **Querétaro has a good educational system (Schools & Universities)**
- **Good quality of life for Ex-pats.**
- **Clean, beautiful city with nice neighborhoods.**

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BOMBARDIER AIRPORT FACILITY



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MMC – KEY PROJECT PROJECT MILESTONE

2005

October

Bombardier announces its decision to establish in Queretaro.

\$200 USD millions investment for the 1st. phase

2006

May: Start of Structural and Electrical activities in Industrial Park “El Marques”.

August : BAM announces the decision to manufacture:

Challenger 850: medium fuse

Q400: structural controlling

components for the turbo propeller aircraft Q400 (rudder, horizontal stabilizer and hoist). **transferred from Japan

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ELECTRICAL COMPONENTS

- Main Harnesses
(CRJ700/900, CL300, Global Express)
- Electrical sub-assemblies



Produced in MMC

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MMC – KEY PROJECT PROJECT MILESTONE (cont)

2007

- **June** : Airport Site Construction Started
- **August** : Identified new work packages to be transferred to Querétaro.
- *1200 employees by end of FY2007/08*
- **October** : Production (Structure Global Express) started in the new Airport Facility.

2008

February: 1st Facility built in the Aerospace Park. Ceremony presided by President Felipe Calderón Hinojosa.

April: Currently 1016 employees (admin. & production) of which 877 are permanent employees.

May: 2nd. building (Electrical Production Units).

December: Approx. **1250** employees by the end of the year.

2009

1st. Quarter 2009 : Begins the construction of the Learjet 85 building. **\$343 USD million investment** / 2nd. phase in Mexico's Investment

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ESTRUCTURAL COMPONENTS

- CL850 Fuselage
- Q400 Rudders and Elevators
- Q400 Horizontal Stabilizer
- GEX Rear fuselage



Produced in MMC

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Closing

- I have spoken about our vision, the vision of having Mexico becoming the Manufacturing Hub of the Aerospace Industry in North America
- A vision where an Aerospace Industry will be home of a large base of employment with high value added in Mexico
- A vision that implies a development in strategies for growth of the country where Mexico will actively participate in a select group of countries disputing manufacturing positions
- A vision that will require engineering capacities in all its activities, from production to design
- A vision that will help and accelerate this country's development and foster its integration to high tech markets globally

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Mexico the Manufacturing Hub of Aerospace Industry in North America (cont)

Closing (cont)

- **A vision that, based upon the foregoing, transitions:**
 - Materializes plans into realities
 - Translates projects into production facts
 - And based upon the above yields operations in Mexico into profits

Thanks!!!

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