IEEE’s Consultants Network of San Diego
Informational Seminar

David Mayagoitia
EDCs and Manufacturing Associations Committee
Today’s Agenda

• An Overview of Tijuana.
• Why Tijuana is what it is today?
• An overview of Tijuana’s Advanced Manufacturing.
• Areas of Upcoming Opportunity.
• How can you participate.
• Q&A
The perfect location to serve North America – the Pacific Region... and the World
Demographics

Baja California State Population

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Baja California</td>
<td>1,670,091</td>
<td>1,650,168</td>
<td>3,320,259</td>
<td>100</td>
</tr>
<tr>
<td>City of Tijuana</td>
<td>779,190</td>
<td>937,086</td>
<td>1,716,276</td>
<td>51.6%</td>
</tr>
<tr>
<td>City of Mexicali</td>
<td>427,461</td>
<td>552,953</td>
<td>980,414</td>
<td>29.5%</td>
</tr>
<tr>
<td>City of Ensenada</td>
<td>219,716</td>
<td>284,218</td>
<td>503,934</td>
<td>15.1%</td>
</tr>
<tr>
<td>City of Tecate</td>
<td>48,773</td>
<td>63,091</td>
<td>111,864</td>
<td>3.3%</td>
</tr>
<tr>
<td>City of Playas de Rosarito</td>
<td>45,854</td>
<td>59,314</td>
<td>105,168</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Source: 2010 Mexico’s National Census of Population and Housing (INEGI).
Tijuana, Mexico’s Manufacturing Hub

- **50 years** of experience in manufacturing.
- **565+ Export Manufacturers #1** in Mexico.
- **171,950+ Employees.**
- **50+ Industrial Parks.**
- **#1** in Medical Device Companies in North America **+43 Companies +34,000 employees.**

Companies & Employment
Source: Inegi, IMSS, July 2013

[Graph showing Tijuana’s Manufacturing Industry from 2000 to 2013]
Why Tijuana is what it is today?
Nafta 20 year anniversary

- US Exports to Mexico have increased 400%.
  - Over $200 Billion.
- NAFTA Trade: Represents 14 Million Jobs.
- Supply Chain Integration, US Content of Imports:
  - 40% from Mexico.
  - 25% from Canada.
  - 4% from China.
  - < 4% from Europe.

Source: U.S. Department of Commerce, Exporter Database
Mexico’s NAFTA sectors

3 million units.
8th producer and 4th largest exporter of lightweight vehicles
6th manufacturer of heavy vehicles
80,000 employees

270 companies, 32,000 employees
6th exporter to U.S.
Exports of $5 billion and $12 billion by 2021.
Baja California represents 28% of country exports

2,349 companies, 115,000 employees
Exports of $8 billion and $5 billion by 2020.
Baja California represents 50% of country exports
Mexico’s Free Trade Agreement Network

1994 Mexico’s pro-international trade policies have created a world-wide network of free trade treaties with 44 countries, including:

- **North America**: The United States, Canada
- **European Union**: Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Switzerland
- **Free Trade Association of Europe**: Iceland, Liechtenstein, Norway, Switzerland
- **Northern Triangle**: Guatemala, Honduras, El Salvador
- **Other Free Trade Agreements**: Bolivia, Chile, Colombia, Cuba, El Salvador, Nicaragua, Uruguay
- **Other Economic Agreements**: Argentina, Brazil, Japan, Peru
Key Factors

- Total cost to U.S. market.
- Stable economy.
- Ease of doing business.
- Speed to market logistics.
- Strong IP protection.

“Mexico is in a strong position to be a significant winner from shifts in the global economy.” Boston Consulting Group June 2013
Mexico by the Numbers

Key Low Cost Countries Total Landed Cost to U.S.

Technological Sophistication Index

<table>
<thead>
<tr>
<th>Region</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>2.96</td>
</tr>
<tr>
<td>Latin America</td>
<td>2.16</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.25</td>
</tr>
<tr>
<td>Brasil</td>
<td>2.49</td>
</tr>
<tr>
<td>Argentina</td>
<td>2.06</td>
</tr>
<tr>
<td>Chile</td>
<td>1.58</td>
</tr>
</tbody>
</table>

750,000 Engineering students

115,000 graduates every year

Source: ProMexico, Perspectives on Global Development 2010, OECD, Based on Woo (2010).
Location, Location, Location

California
Tijuana
San Diego

The perfect location to serve North America – the Pacific Region... and the World
Tijuana’s Advanced Manufacturing: An Overview
Tijuana’s Key Industrial Sectors

Aerospace
- 31 Companies
- 8,100 employees

Automotive
- 40 Companies
- 18,000 employees

Medical
- 43 Companies
- 34,000 employees
  #1 North America

Electronics
- 114 Companies
- 55,000 employees

Sectors Include:
- Aerospace
- Automotive
- Medical
- Electronics

Companies Include:
- Sanyo
- Samsung
- Bose
- Kyocera
- Foxconn
- Plantronics
- IOR
- WelchAllyn
- Medtronic
- Covidien
- Nypro
- Greatbatch Medical
- CST
- TOYOTA
- HYUNDAI
- Autoliv
- Esterline
- ZODIAC AEROSPACE
- EATON
- Benchmark electronics
- CUBIC
- Benchmark electronics
- TOYOTA
- HYUNDAI
- Autoliv
- Esterline
- ZODIAC AEROSPACE
- EATON
- Benchmark electronics
- CUBIC
- Benchmark electronics
Workforce Profile

<table>
<thead>
<tr>
<th>Area</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Employees</td>
<td>127,243</td>
</tr>
<tr>
<td>Technicians/ Engineers</td>
<td>32,671</td>
</tr>
<tr>
<td>Management</td>
<td>12036</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>171,950</strong></td>
</tr>
</tbody>
</table>

Education

• **35+ universities**
• **15 technical schools**
• **57 high schools**
• **3 R&D Centers**
Areas of Opportunity

• Regional Sourcing
• Contract Manufacturing
• Coinnovation
• CaliBaja Megaregion
Regional Sourcing
Aerospace and Defense

**Product area:**
- Metal structures
- Castings and forges
- Composite materials
- Plastics
- Optical fiber
- Fiber glass
- Wires and harnesses

**Services:**
- Precision machining
- Heat treatment
- Metal Stamping
- Anodized
- Aerospace design
- Thermoforming

**Annual Value of Imports $1.2 billion**
Regional Sourcing Medical Device

Product area:
- Plastic and rubber parts
- Electronic components
- Micro parts (screws)
- Metallic components
- Foam

Services:
- Sterilization
- Precision micro machining
- Microbiological laboratories
- Calibration
- Rotational molding of plastic parts.

Annual Value of Imports $1.5 billion
Regional Sourcing Electronics

**Product area:**
- Printed circuit boards (PCB)
- Microprocessors
- Plastic injection molding
- Packaging
- Cable & harnesses

**Services:**
- MRO
- Labeling services
- Recycling

**Annual Value of imports $6.5 billion**
Regional Sourcing
Automotive

Product area:
• Composites
• Iron & aluminum
• Cable & harnesses
• Valves, Hoses

Services:
• Precision machining
• Metal plating
• Die castings
• Welding
• Stamping
• Finishing, etc.
• Plastic Molding (thermoforming)

Annual Value of Imports $1 billion
Regional Sourcing
Plastics

Product area:
Resins
Corrugated cardboard

Services:
Molding services (Contract manufacturing)
Industrial Design services
Powder Coating

Annual Value of Imports $1 billion
## Contract Manufacturing

80+ companies offering world-class manufacturing solutions

### Tijuana Contract Manufacturing Snapshot

<table>
<thead>
<tr>
<th>PROCESSES</th>
<th>INDUSTRY SERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electronics</td>
</tr>
<tr>
<td>Electronic assembly</td>
<td>★</td>
</tr>
<tr>
<td>Metal Mechanics</td>
<td>★</td>
</tr>
<tr>
<td>Plastics</td>
<td>★</td>
</tr>
<tr>
<td>Manual assembly</td>
<td>★</td>
</tr>
<tr>
<td>Sewing</td>
<td>★</td>
</tr>
<tr>
<td>Mechanical assembly</td>
<td>★</td>
</tr>
<tr>
<td>Metal finishing</td>
<td>★</td>
</tr>
<tr>
<td>Packaging</td>
<td>★</td>
</tr>
<tr>
<td>Product integration</td>
<td>★</td>
</tr>
</tbody>
</table>
"Suppliers List 2013" major manufacturing locations of suppliers who provide raw materials and components, or perform final assembly for Apple.
The Shift of Innovation to Asia

China's Patent Surge

In 2011, China became the largest patent office in the world.

- **China**: 526,412 patent applications
- **USA**: 503,582 patent applications
- **Japan**: 342,610 patent applications

24.6% Share of the Chinese office in total patent applications in 2011

72.1% China's contribution to growth in patent applications worldwide from 2009 to 2011

47.5% → 79% Share of Chinese residents in total patent applications in China from 1985 to 2011

**Top 3 in 2011**

- **Utility Models**
  - China: 87.3%
  - Germany: 20%
  - Russia: 2%

- **Trademarks**
  - China: 22.8%
  - USA: 6.0%
  - China: 4.9%

- **Industrial Designs**
  - China: 53.1%
  - Korea: 12%
  - China: 6%

World Intellectual Property Organization, 2013
Co-Innovation: Success Stories
The CaliBaja Initiative
Regional Cooperation: Our biggest asset

• 2 International Airports.
• 2 Deep-Sea Ports.
• Railways.
• 50+ Universities.
• Over US $25 Billion in Cross-Border Trade.
• The Best Sustainable Energy Capability.

<table>
<thead>
<tr>
<th></th>
<th>Population (Thousands)</th>
<th>Economy (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego</td>
<td>3,140.1</td>
<td>177,500</td>
</tr>
<tr>
<td>Imperial County</td>
<td>177.5</td>
<td>4,759</td>
</tr>
<tr>
<td>Baja</td>
<td>3,285.6</td>
<td>20,153</td>
</tr>
<tr>
<td>Total</td>
<td>6,603.2</td>
<td>202,412</td>
</tr>
</tbody>
</table>
How can you participate?
Do what you need to do!

• Find out who is here: Get the Maquiladora Directory
• Necessary Due Diligence : Is your product or service needed?
• Get involved with Industry Cluster Associations and others: Network, meet the folks
• Find out who does local vs corporate purchasing
• Determine the gaps in the supply chain can you service them?
• Get referrals and references
• Talk to those who are already servicing industry
• Go to the industry supplier events
• Support CaliBaja
• Don’t assume it will be easy, fast and cheap
A Word on Tijuana EDC
• Non-profit business organization
• 25 years of experience in industrial promotion.
• The Tijuana EDC facilitates the establishment of manufacturing and business operations in Tijuana, Mexico.
Investors Services

- Information on regulations, accounting, customs
- Site Selection Support
- Business Services One-Stop-Shop
- Facilitate Government Incentives
- Facilitate Initial Recruiting
Thank you!

David Mayagoitia
dms@in3group.com