



# Electronics Supply & Manufacturing

FOR OEM AND EMS MANAGERS WITH GLOBAL INFLUENCE



MANUFACTURING

**Mexico's manufacturing sector** faced a crisis six years ago as OEMs embarked on a wholesale relocation of facilities to Asia. Here's how one **EMS provider revamped** its Mexican operation to make it competitive again

## Turning the TIDE

BY MARCO GONZALEZ HAGELSIEB

The Mexican electronics-manufacturing industry has made a remarkable comeback in the last three years. From its humble beginnings as a country seeking greater economic opportunities, Mexico has emerged as a desirable venue for many electronics companies.

Mexico is the 13th largest economy in the world, with a national gross domestic product of \$769 billion in 2005. Twenty-six percent of Mexico's GDP is derived from manufacturing, energy and construction, with electronic equipment one of the country's top exports.

Since 2003, the Mexican electronics industry has steadily experienced a resurgence, thanks to growth in its manufacturing sector and in outsourcing that rivals the trend in Asia. Its proximity to the United States is a key factor in making Mexico a prime lo-



cation for major manufacturers.

More than 2,600 U.S. companies have operations in Mexico, and about 55 percent of all foreign direct investment in the country is from the United States, according to the U.S. Department of State.

When it comes to Mexico's economic recovery, the old adage for defining value in real estate—"location, location, location"—holds true.

According to a report by research firm Technology Forecasters Inc. (TFI), Mexico's future growth will be determined by a number of factors, including geographical proximity to markets and the quality and breadth of its service offerings.

The TFI report states that Mexico's transformation from high-volume to low-volume manufacturing and its ability to develop a regional end-to-end solution for electronics manufacturing services (EMS) and

ed for 86 percent of Mexico's exports in 2005, representing nearly a quarter of Mexico's GDP.

As a leader in the resurgence of Mexico's EMS industry, Sanmina-SCI received the National Export Award in November 2006, a milestone for the company's Guadalajara, Mexico, operations. The award recognizes businesses in agricultural, manufacturing and service sectors that have made outstanding contributions to increase the quantity, quality and diversity of the goods and services Mexico provides to global markets.

Sanmina-SCI exported \$3.1 billion in equipment in 2006, primarily to the U.S. telecom, IT, automotive and medical sectors. Overall, the company's exports from Mexico grew 70 percent between 2001 and 2005.

Unquestionably, the effects of the terrorist strikes of Sept. 11, 2001, permeated the U.S. economy. Since

ity and making improvements in time-to-market and response time.

The company now puts more focus on product sectors and industries where there is a competitive advantage, such as enterprise computing and storage, medical, automotive, multimedia, industrial and communications. It also employs Lean manufacturing initiatives.

Lean manufacturing allows companies to establish formal processes across their organizations to manage change, remain competitive and improve overall customer value. The initiatives are all about getting the right things to the right place at the right time in the right quantity, while minimizing waste and being flexible and open to change.

The expansion of manufacturing capabilities in end-to-end solutions, test development and reverse logistics has also played a major role in Sanmina-SCI's turnaround.

The shift is an indication that the niche in Mexico has transformed from low-cost labor to the ability to provide more-extensive services. A recent report by TFI stated that electronics manufacturing

in Mexico has undergone a transformation in the last five years. The sector has reinvented itself to offer customers a new set of capabilities.

Total cost of ownership also remains a key consideration in OEMs' outsourcing decisions. A recent TFI report indicates that such variables as fuel costs, insurance, complexity of controlling product introduction and time-to-market have made Mexico a popular choice for outsourcing, provided the end market is the Americas.

That contrasts with the situation in earlier years, when labor costs and access to emerging markets were key considerations in choosing China as an outsourcing location, according to the report.

Mexico's trade policy is among the most open in the world. The North American Free Trade Agreement (NAFTA) of 1994 created a



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OEM infrastructure have enabled Mexican companies to support customers in North American and Latin American markets with more than traditional printed-circuit board assembly services.

#### **Competitive pressure**

For companies such as Sanmina-SCI Corp., a leading global electronics contract manufacturer, the economic downturn in the United States prompted an exodus of customers to China and Asia. Many companies had to shut down manufacturing facilities in North America and Europe to cut costs and remain competitive.

The impact on Mexico was significant, considering the country's economy is strongly linked to the U.S. business cycle. An October 2006 report by the U.S. State Department said the U.S. market account-

Mexico is heavily dependent on trade with its business partner to the north, many EMS companies there, including Sanmina-SCI, suffered post-9/11 setbacks resulting in restructuring and layoffs.

To compensate, Sanmina-SCI made changes in its Mexico operations to make its manufacturing processes more efficient. Sanmina-SCI's vertical integration model provided solutions with high-mix, low-volume products; highly complex product capabilities; diverse product segments; and strong engineering and operational infrastructure.

#### **Survival strategies**

Sanmina-SCI adapted to the new global competitive environment by building a strong infrastructure in Mexico. It adopted cost-effective strategies while maintaining flexibil-

free-trade zone encompassing Mexico, Canada, the United States and other countries.

A recent report by the U.S. Department of Commerce calls NAFTA the key factor in the U.S.-Mexico bilateral relationship. Since NAFTA, Mexico's imports from the United States have increased exponentially, totaling more than \$107 billion in 2005 and making Mexico the United States' second-largest trading partner.

The report also finds that the volume of trade between the United States and Mexico provides many market opportunities for U.S. firms. U.S. exports to Mexico exceed U.S. exports to the rest of Latin America combined. Some of the most promising sectors include automotive parts, electronic components, telecommunications gear and medical equipment. Other strong sectors in-

clude architecture, construction and engineering services. The report states that the Mexican government is also seeking to help the electronics industry continue to grow through increased innovation and R&D tax incentives via the Ministry of Economy's Program for the Competitiveness of the Electronics and High-Tech Industry (PCIEAT), launched in 2002.

According to TFI, Mexico hopes to achieve the following goals through PCIEAT by 2010:

- Become one of the top five electronics exporters in the world.
- Increase electronics exports to \$80 billion annually.
- Increase direct employment in the electronics segment by 60,000.
- Shift the industry's focus from "Made in Mexico" to "Created in

America was launched as a trilateral effort to develop new avenues of cooperation and to increase security, prosperity and economic resilience among the United States, Canada and Mexico through greater cooperation and information sharing.

According to the U.S. Central Intelligence Agency's "World Factbook 2007" report, Mexico's free-market economy recently entered the trillion-dollar class. But Mexico's continuous economic growth is not without its challenges.

The report states that the Felipe Calderón administration, which took office in December 2006, faces many of the same challenges that former President Vicente Fox tried to tackle, including the need to upgrade infrastructure, modernize the tax system and labor laws, and permit private investment in the energy sector.

President Calderón has said his top priorities include reducing poverty and creating jobs. The success of his economic agenda will depend on his ability to garner support from the opposition.

Indeed, the tide has turned for Mexico, with its impressive economic growth and resurgence from the industry slump of 2001. Statistics show that the EMS sector is a critical driver of Mexico's economy. Many analysts predict that Mexico's growing reputation as a strategic manufacturing and engineering global platform for the electronics industry, and the health of its GDP, will firmly establish it as an ideal manufacturing solution with definite staying power. ■



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TFI's 2006 Quarterly Forum report found that automotive electronics was the largest sector of the Mexican electronics industry in 2005, with 20 OEMs (eight automotive and 12 commercial vehicle manufacturers) and more than 760 automotive components companies. This sector also accounted for 25.4 percent of manufacturing exports.

Mexico's Ministry of Economy estimates that the value of electronic and electrical components in cars produced in Mexico will increase by 13 percent between 2000 and 2010. According to the ministry, foreign direct investment (FDI) in Mexico totaled \$18.8 billion in 2005. FDI for January through June 2006 came in at \$8.7 billion.

TFI forecasts that within the next five years, the top growth segments

Mexico."

- Promote the transition from analog to digital technologies.
- Establish 250 local suppliers of electrical and electronic components, metal and plastic parts, and complementary materials and services.
- Invest \$5 billion to \$10 billion in the domestic electronics industry.
- Develop ways to transfer technology broadly across Mexico's industrial sectors.

When it comes to labor costs, Mexico takes advantage of NAFTA's "zero duty" environment for products manufactured and exported to the United States, giving Mexico a leg up on competitors such as China, where manufacturers still must pay a duty to import into the United States.

In March 2005, the Security and Prosperity Partnership of North

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