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Mexico Is Churning Out Engineers

Growth in Mexico's engineering and technology workforce is at the heart of the country's economic strategy. In the past, most engineering in Mexico was related to manufacturing, and the workforce was seen as a source of cheap, reliable labor. Now there has been a shift to design engineering with Mexico upgrading its workforce and slowly gaining a strong reputation for its engineering talent.

According to *Business Week*, the country's policymakers have been slowly building up enrollment in four-year degree programs in engineering, developing a network of technical institutes and expanding advanced training programs with multinationals from the U.S. and elsewhere. Data from the National Association of Universities and Institutions of Higher Education (Mexico) and the American Society for Engineering Education, shows that Mexico currently has 451,000 students enrolled in full-time undergraduate programs vs. over 370,000 in the U.S. Mexico is clearly building a strong engineering base.

Mexican officials decided to take action to stay in the global economic race, as they watched China and India grab more sophisticated design and engineering assignments. According to *Design News*, the Mexican government has invested heavily in R&D and design engineering in an attempt to move up the value chain in areas such as electronics manufacturing. In addition, the government now offers a 30 percent tax credit for companies that increase spending on engineering and technology.

It took a few years for U.S. manufacturers to get accustomed to the idea that Mexico is a source for design engineering, but that is rapidly changing. Honeywell Aerospace recently broke ground on a \$40 million systems integration and testing laboratory in Mexicali, along the border with Arizona. It will employ 300 Mexican engineers and run simulations for aircraft systems developed by Honeywell Worldwide.

Other companies such as General Electric, General Motors, Honeywell and Delphi have created large research and development centers in Mexico to carry out sophisticated design modifications and handle the testing of everything from new car models to military and commercial jet engines. In

addition, they are donating high-tech equipment and materials to the schools, which help develop course content to fit their needs. Many of these engineers graduate knowing how to use the latest computer-assisted design (CAD) software and speaking fluent English.

Although the figures for engineers working for U.S.-based companies in Mexico are climbing, the number is still miniscule compared to the total number of engineering jobs in the U.S. However, with relatively low labor costs and a commitment to graduate more engineers, Mexico's engineering workforce appears destined to grow and increasingly compete with engineers in the United States.

As ASME continues to expand globally, it is important to keep in mind this trend and continue to:

- Become Indispensable to Young Engineers (C2)
- Enhance relevance to industry (C3)
- Identify and Address Future Markets and Applications (C5)
- Stimulate individual membership growth with different membership models (I2)