

We have the technology

Brazil and Israel plug into one another's know-how in a move that heaps benefits on high-tech Latin America

In an under-reported story last month, Israel and Brazil signed a bilateral agreement for industrial research and development in the private sector. The accord supports cooperative projects to advance innovative technology, foster joint commercialization and strengthen industrial competitiveness.

Considered as a center of excellence in technology, research, telecommunications, biotechnology, nanotechnology, agro-technology, Israel had already signed similar agreements with technologically competitive countries such as Singapore and Canada. The accord also acknowledges the strong economic relations between Brazil and Israel. Brazil is today the second largest commercial partner of Israel in the Americas. Bilateral trade between Israel and Brazil rose from \$449 millions in 2002 to \$746 millions in 2006. Also, Israel and Mercosur/Mercosul are in the process of negotiating a Free Trade Area Agreement.

The importance of this news for Latin America — especially the region's more advanced economies — exceeds the strong and complementary economic relationship

between two nations. The significance of the Brazil-Israel R&D deal is that technology — support, development and commercialization, alone or in partnership — provides a means for Latin America to raise competitiveness, productivity, economic growth, export performance and employment generation for skilled workers.

High-tech manufacturing grew substantially over the last decade in Latin America. The combined production of seven Latin American countries — Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Venezuela — increased 93 percent between 1991 and 2000 alone, rising from \$27 billion to \$52 billion.

Brazil, Mexico, and Argentina, in that order, dominate high-tech manufacturing in Latin America, accounting for more than 90 percent of high-tech production. Chile and Costa Rica (the latter due especially to Intel's establishment of a semi-conductor plant) are significant producers, as well.

Investment in technology and supporting infrastructure has been meager in the Americas with less than 0.5 percent of GDP going toward research and development. But there has been an awakening in recent years by Latin American governments that they must elevate technology to a higher national priority, by supporting policies and financial resources; and that they must do so immediately, lest they fall further and further behind Asia, even Central Europe, not to mention the United States, Canada, and Western Europe.

Mexico and Panama provide two models to emulate. The Mexican state of Jalisco, with its capital Guadalajara, attracted Kodak to set up operations in 1960. IBM followed in 1962, then Motorola in 1963. Other firms trickled in and a small cluster of electronics firms began to take shape. When the December 1994 peso devaluation took place, the Mexican economy took a nosedive, and that included Jalisco's, as well. Newly elected governor Alberto Cárdenas grasped the severity of the situation and named businessman Sergio Garcia de Alba to turn things around. He did so with alacrity. As secretary of economic promotion, Garcia de Alba developed and implemented a strategy to attract global manufacturers and their suppliers in IT, software and electronics to set up shop in Jalisco. This entrepreneur traveled the globe to pitch "doing business in Jalisco." He offered tax incentives, training grants, slashed red tape and created a one-stop-shop for business licensing. He also facilitated tight linkages between companies, business associations, local government and academe to create synergies in the technology sector. The result? The transformation of Jalisco into Mexico's "Silicon Valley," a hub that produces more than 60 percent of Mexico's computer output. The Jalisco electronics cluster comprises eight companies from among the top 100 makers of global electronics, including Flextronics, Sanmina SCI and Solectron. There are also research and development centers for such companies as Hewlett-Packard, IBM, Intel, ST Microelectronics and Siemens.

Jalisco's electronics cluster includes local and foreign companies in computing,

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including aeronautics. Aside from equipment manufacturers, such as Hewlett-Packard and contract manufacturers such as Florida-based Jabil Circuits, Jalisco hosts more than 500 specialized suppliers. Public and private universities offer education and training and applied research. The Guadalajara campus of ITESM is pioneering the design of new information technologies and programs to help Mexican companies gain international certification.

A much newer undertaking is Panama's "Ciudad de Saber" (City of Knowledge). A.T. Kearney reports Panama is the most globalized country in Latin America and the third country in FDI per capita in the world, behind Singapore and Ireland.

The City of Knowledge, on the banks of the Panama Canal at the site of a former military base, is a technology and innovation enclave that is becoming a magnet for research and development initiatives in IT, biodiversity and tropical ecology as well as life sciences.

The complex's Panama International Technology Park (TIP in Spanish) takes up more than 28,000 square meters and hosts Arango Software, Mermellón Technologies, Distrago Química, Pan American Semiconductors and Doger Technologies, among others.

The global market for high-tech goods — aircraft, pharmaceuticals, communications equipment and computer and office machinery — is accelerating. If Latin America is to achieve and sustain growth, it cannot rely heavily on agriculture and natural resources (neither assist the urban poor particularly) or low-skilled/low-paying service sector jobs. Technology is no panacea, but it is an option — an essential one that can propel the region from the 20th into the 21st century. **WC**

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