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Industry-University Linkages in Mexico: The Quest for Innovation

By Jerry Haar

The accelerated expansion of the global knowledge economy has intensified the need for strategic partnerships between business and academe, with government in a supporting role, to boost competitiveness. The goal is to merge the discovery-driven culture of the university with the innovation-driven environment of the company, overcoming the cultural and communications divide that often impairs partnerships.

All nations must confront this challenge. Mexico is a prime example. With the economy forecast to grow at 4-5% per year over the next several years and major reforms passed in education, labor, energy, telecom and fiscal policies, the country is, in the words of America Market Intelligence's managing director John Price, "ready to launch." However, to do so and compete effectively, Mexico must innovate.

Recognizing this imperative, last November the Woodrow Wilson International Center for Scholars, one of Washington's preeminent think tanks, hosted a two-day seminar for three dozen Mexican legislators and other officials on that very topic. Organized by the Center's Mexico Institute, one critically important topic addressed was university-business collaboration, mainly in high technology.

Where these collaborations take place most extensively, the world over, is in "clusters"—locales of economic agglomeration. While Silicon Valley is the best known, there is Silicon Fenn in Cambridge, England; Silicon Wadi in Israel; Technopolis Innovation Park in the Netherlands; Hsinchu Park in Taiwan; and clusters in Brazil, India, Chile, France, and Singapore, to name but a few countries.

Mexico is endowed with excellent clusters, as well. These include electronics and IT in Jalisco, with over 600 companies, including Oracle, HP, IBM, Siemens, and Tata, and involving four major universities; aerospace in Querétaro (260 firms); and automotive in Nuevo León (over 200 companies). Universities and private industry have strengthened their relationship over the past two decades. Since 2005, HP Labs has been developing research collaborations with universities and public research centers in Mexico. IBM and the Universidad del Valle of Mexico collaborate across all 37 campuses of the institution. Mexico's most distinguished university, UNAM, has a

joint venture with the nation's construction industry, Cemex with Tec de Monterrey, and Intel, Motorola and a host of other multinational and large national companies enjoy co-ventures and partnerships in science and technology, in particular.

Industry clearly benefits from partnering with universities especially in clusters, tapping the institutions for future employees. These include outsourcing R&D to both junior and senior researchers; accessing cutting-edge technology; availing themselves of research facilities; and sharing risk. Nevertheless, there are obstacles in industry-university relationships. To begin with, universities have no sense of urgency–researchers work at their own pace. They tend not to be team players, and industry is often treated as a "cash cow". Additionally, there is a lack of understanding in academe of industry's needs and too much focus by university researchers on the academic benefits (academic conferences, published research).

With respect to Mexico, there is often a mismatch between university researchers' incentives (intrinsic motivations, such as solving health problems) and those of the private sector (financial rewards). Recent studies confirm that Mexico is missing out on opportunities by not doing enough to collaborate with the private sector, despite a larger budget and a greater number of government programs to encourage collaboration. But the private sector shares a great deal of the blame as well. Mexico spends four times less in private funds on R&D than other OECD countries, and only 25% of businesses collaborate with universities. Not surprisingly, in a nationwide survey by ENAVI only 16.3% of universities were found to have small business incubators.

For university-industry linkages to be successful in Mexico—and other nations, as well–both academe and the private sector must heed the following lessons: (1) reward proactive, collaborative universities and promote this behavior among all higher education institutions; (2) ensure the strategic partnership is a high priority for both the university president and the corporate CEO; (3) convey the goals and benefits to faculty and design incentives for their participation; and (4) put the right people in charge—faculty with industry backgrounds and industry professionals from academe..

As asserted by Rob Atkinson and Stephen Ezell of the Information Technology and Innovation Foundation, innovation is the core driver of modern economic growth and explains 90% of the variation in the growth of income per worker across nations. Mexico is no exception. If the sweeping reforms undertaken by the Peña Nieto administration and the Mexican congress are to achieve their intended results, the nation will need to innovate. To that end the collaboration between universities and industry will be essential.

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