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The Americas

## Latin Politicians' High-Tech Dreams Neglect the Basics

By Sebastian Edwards.

Last autumn, Chilean President Ricardo Lagos traveled to Silicon Valley to publicize Chile's commitment to a technological revolution of its own. But Mr. Lagos does not only want to see information technology act as Chile's new engine of growth; he harbors a vision of government as the catalyst in getting it done. He is not alone in the region. Many Latin American leaders are vowing to do the same. Most recently, Peruvian presidential candidate Alejandro Toledo pledged to give every schoolchild Internet access.

Futuristic technology speeches can be glamorous, making politicians sound like visionaries. But before Latin American policy makers and voters are seduced by the notion of state-subsidized technology as the silver bullet for development, they should take a step back. The government is likely to be a costly disappointment as the architect of a Latin American technological revolution. Spending on technology, in a burdensome regulatory environment with an ineffective public education system and weak property rights, will be money wasted.

A number of new studies have found that the surge in productivity in the U.S. during the second half of the 1990s was largely the result of the adoption of new technologies. Yet an important insight from these firm-level studies is that investments in technology play the role of a "facilitator," allowing other innovations to take place. This point has been forcefully made by researchers Erik Brynjolfsson at MIT and Lorin Hitt at Wharton, who argue that to be successful firms typically need to adopt computers as part of a "system" or a "cluster" of mutually reinforcing organizational changes.

Another important finding of firm-level studies is that information technology is particularly effective in new companies unencumbered by tradition. But more than a decade after Hernando de Soto exposed the bureaucratic nightmare of starting a small business in Peru, most of Latin America continues to be imprisoned by surreal volumes of paperwork.

A recent study by Harvard professor Andrei Shleifer and his associates shows that in most of Latin America the costs of starting a new firm are extremely high. In Argentina it takes 71 business days to start a new company, at a cost close to 25% of the country's annual per-capita income. In Chile it's 78 days, and 12% of per-capita income; in Mexico it's 112 days and 57% of per-capita income. Compare this with Canada, where it takes only two days and costs less than 1% of per-capita income.

Latin America's competitive disadvantage in starting new companies goes beyond red tape. The absence of venture capital, the lack of protection for minority shareholders' rights, and poor corporate governance are all elements that hold the region behind in the quest for innovation.

Firm-level studies have also shown that investment in information technology is more effective when the labor force is highly skilled. This is not good news for Latin American countries, where recent survey results on the quality of math and science education place every nation, with the exception of Costa Rica, in the bottom third of a sample of 59 countries. Results from comparable standardized tests are no better. Chile, the only Latin American country that participated in the 1999 Trends in Mathematics and Science study for eighth graders, did extremely poorly. The results from these standardized tests, which were taken by more than 150,000 students in 38 industrial and emerging countries, are strictly comparable across nations. In mathematics, Chile placed 35th out of 38 countries, with a score 20% below the average. In science it also placed 35th; this time, however, Chile's score was only 14% below average.

The relationship between education and information technology is complex and runs both ways. A better technological base -- including access to computers in the classroom -- is likely to increase students' abilities to tackle math and science problems. And a better-trained labor force is likely to allow the country to take full advantage of new technological developments, including the Internet. However, improving the quality of education is not only -- and not even mostly -- about introducing computers into the classroom. Improving the quality of education requires teacher accountability, curriculum reform, a greater degree of decentralization, and reducing bureaucracy in school administration.

The Internet is about freedom and dynamism. And the effects of the Internet are greater when labor relations are flexible and dynamic. Labor legislation in Latin America, however, is generally very rigid and does not facilitate the rapid redeployment of workers across companies and sectors. Moreover, in many countries collective bargaining still takes place at the industry level. This practice does not allow labor negotiations to consider the peculiarities of specific firms, which in the midst of technological change may face very particular circumstances.

In a recent paper, Nobel laureate James Heckman and Carmen Pages of the Inter-American Development Bank analyzed labor legislation in Latin America and concluded that it restricts labor mobility significantly. Efforts to reform labor legislation, and introduce greater flexibility while enhancing workers' rights, have been largely unsuccessful. Argentina's recent labor reform was clearly insufficient and retained many features of the old legislation, and Chile is currently considering a labor reform that could introduce new rigidities. In Brazil and Mexico -- as in much of the rest of the region -- there is no talk about labor-market reform.

Economic historian David Landes has recently stated that when it comes to explaining cross-country differentials in growth and performance, "culture

makes almost all the difference." This emphasis on culture helps put technology in perspective. Unless it is accompanied by "cultural" changes -- and by this I mean institutional, value and deep economic changes -- information technology will have little effect on economic growth. Subsidizing information technology carries the danger of creating costly, ineffective monsters similar to the inefficient industrial complexes developed during the years of Latin America's famous experiment with import-substitution protectionism.

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