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## China's Innovation Barriers

Nandani Lynton of Thunderbird says the obstacles include a monolithic, hierarchical culture that frowns on boundary-breaking

by [Nandani Lynton](#)

Innovation is the buzzword in China these days. The mainland overtook Japan this year to become the world's No. 2 investor in R&D after the U.S. The government has declared that by 2010, China will be an innovative society.

And the World Economic Forum's China Business Summit, held in Beijing this September, was stirring with talk of innovation, with panelists highlighting the sharp increase in Chinese patent applications, the strength of mainland companies such as Huawei, and 5,000 years of Chinese inventions.

But there were questions as well. In initial results of the WEF's own competitiveness survey, China languished in 48th place for innovation. The scores for education and health, higher education, and public institutions were also poor, hovering below 60th place.

These factors are not unrelated. WEF participants, representing a mix of private and public organizations, listed two areas that government and companies need to focus on to boost innovation in China: intellectual property rights and talent management.

Real innovation depends on several interlocking factors. It includes having talented people—not only scientists but also entrepreneurial thinkers—who are interconnected with companies, government, universities, suppliers, and customers, and able to work across disciplines, according to the Council on Competitiveness' *2005 National Innovation Survey* and *Going Global* reports.

### COMMUNICATION FOR INNOVATION

These people also need supportive regulatory and legal frameworks, a good communications infrastructure, and capital. Finally, it is important to have manufacturing capability to fuel innovation.

In fact, in the U.S., manufacturing companies provide 75% of total industry R&D funding. While the mainland's legal and regulatory framework still needs work, it seems to have the other necessary factors covered. So why do so many doubt its ability to become an innovative society?

Innovation is about boundary spanning. A good example is GE's development of LCD terminals for cockpits. While these were never used in a plane, the idea led to digital imaging devices that are now used widely in place of X-rays. This kind of cross-fertilization cannot happen without communication across departments, business units, or national borders.

And the competition is high. Research is truly becoming globalized, with investment and labs going wherever they find the brightest people and the best conditions. This means that innovation will go where you find not just technological knowhow but also the skills needed for boundary-crossing: openness, complex communication, and creativity.

## EXCLUSIONARY TACTICS

The very structure of Chinese society has inherent barriers to innovation. The country's monolithic culture, growing from a predominantly Han-Chinese tradition, and a deep tendency toward strong hierarchies, does not encourage thinking in new ways or including outsiders. This makes it difficult to understand new markets, to think creatively, or to accept eccentrics.

Chinese have a strong group focus, and prefer to work, communicate, and share information with people they know and trust. They often exclude anyone from another department or division even within the same company or university, much less from outside the organization.

All these habits discourage appreciation of different types of thought, behavior, or people. That stifles the kind of cross-fertilization and cooperation that multinationals tap to boost innovation.

Big global companies benefit from spending the time needed to meet local requirements for cheaper, better, differently featured products. The lessons they learn in one country can then be spread to comparable markets around the world.

## BREAKING THROUGH THE STATUS QUO

What you see in China is a focus on the boss and on the "right" way of doing things. When you add to the equation the fact that manufacturing in China subsists on such tight margins, there is not much left for R&D. And even the best universities in China need to take creative energy and focus it straight into applications to turn a profit quickly, perhaps as a spin-out company, rather than offering space for experimentation.

For these reasons and more, CLSA China Macro Strategist Andy Rothman last August said that China "has a long history of being inventive, although not innovative," i.e., that there have not been major breakthroughs "that resulted in commercialization of products or services based on that novel technology."

There's another, newer twist to the innovation equation in China, the generation of single children. In a report, Rothman quotes Lin Yifu, director of the China Center for Economic Research at Peking University: "China lost its early technological lead because it did not make the shift from the experience-based process of invention to the experiment-cum-science-based innovation, while Europe did so."

## BREAKING OUT OF THE BOX

In an earlier article I wrote about the ivory tower bias of Chinese higher education, with the assumption that a university education means you never have to get your hands dirty. This has led to automotive engineers who have never driven a car and coal mine engineers who have never been in a mine (see BusinessWeek.com, 7/31/06, "[Chindia's Workforce Worries](#)").

An ongoing revolution in Chinese education will change this as well. University administrators are complaining that the one-child generation, which now dominates in universities, is demanding different facilities and services.

And professors point out that students no longer respect authority or do what they are told. This may create havoc as this generation enters the workforce, raising new questions about teamwork, for example—but it bodes well for developing wacky people who think in different, innovative ways.

Today about half of all the science and technology PhDs awarded in the U.S. go to Chinese students. Many of these talented Chinese join U.S. companies and are highly creative, whereas their peers who stay in the Chinese system often get lost in the "average" there.

Will China be an innovative society by 2010? The system suggests not. But there may be hope that individuals can make a difference.

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