A Cutting Edge Lust

by *Maria Elena Viaggiano*

China is spending billions to improve its high-tech industry and limit reliance on foreign innovation. So far, the effort has produced only modest results. Beijing's response has been to spend even more, a pattern that shows no signs of abating.

Copying is an art, at least for the Chinese. At one time, a Chinese artist wasn't at the peak of his skills until he could reproduce a work of another artist to perfection. Imitation represented a tribute to his teacher and also recognized the artistic value of those who preceded him. This concept, vital to Chinese culture, helps explains divergent view on counterfeiting, which the West sees as a criminal offense. For centuries, imitation was limited to paintings, sculptures and poems. Then came wave after wave of copying of consumer products: handbags, shoes, cell phones, computers, pharmaceuticals and toys. All can now be copied and large quantities of consumer goods have flooded world markets to China's competitive advantage. Over little more than 20 years, China has become an international economic dynamo, in many cases at the expense of other countries.

But the Chinese domestic scenario is changing. Middle class growth has increased domestic consumer demand. Moreover, Beijing has realized that high domestic growth rates depend on policy measures intended to boost domestic consumption and to promote science and technology. Concepts such as intellectual property, trademarks and copyright are beginning to come into play. Without them, China can't hope to take the next developmental leap. In a word, China is eager to give wide berth to innovative trends and most of the country's economic push seems oriented in that directions. Changes in the Chinese economic model were evident in the country's twelfth five-year plan (2011-2015) which openly stated that China's future success depended on developments in domestic science and technology and also on the extent to which the country was able to offer innovations at home and to the rest of the world. The time has come, the plan suggested, to move from the traditional the "Made in China" model to "Developed in China."

China's incipient efforts have led Westerners to wonder how a country that has depended for so long on imitating and copying will be able to fend for itself in terms of design. The answer, in line with Easters tradition, is that copying masterworks give the master's disciples a chance to master their own style and perhaps even improve on the original

The Chinese government succeeded in attracting a fair number of foreign investors fascinated by the prospect of a huge and wealthy market. Often, however, those who did invest felt exploited. Once the Chinese acquired foreign technologies and innovations, they merely reproduced what they saw faithfully and put it on the market at more competitive prices, damaging outside competition. Foreigners have since learned to become far more guarded when it comes to sharing advanced technology. It also demands greater safeguards before entering any market in which the might gain an advantage. For its part, China has realized its time to reverse the trend, offering innovations foreigners might bid for.

According to Thomson Reuters research, Chinese registered patents increased from 171,000 in 2006 to 314,000 in 2010, making the country the world's leading new brands nation, surpassing the United States and Japan. By 2015, the figure is expected to reach 500,000 patents, followed by 400,000 from the U.S. and 300,000 from the Japanese. While the increase in patents signals tangible evidence of change, it worth keeping in mind that Beijing offers powerful financial incentives to companies that register new patent, even if what they've done represents little more than a subtle changes to an existing process. New domestic trademarks can yield hundreds of millions of Yuan, flooding the market with patents, some issued in record time without any particular attention to quality of research or compliance with international quality standards.

The science and technology park at Suzhou.

Similar incentives exist for innovation, with universities receiving government grants and funding based on patents as well as the publication of new information on a sought-after field. In fact, real innovation is limited to a very small segment of the Chinese workplace, usually large companies with teams of young people focused on research and development and corresponding teams of experts probing how to improve information technology and communication. The key to China's future success is remaining abreast of existing technological excellence and being able to add innovations to suit market needs. China profits from another key ingredients, in part connected to greater looseness in standards: It tends to work faster than any other nation on the planet.

Those who China knows are familiar with its frenetic pace. It's no wonder that funding for research and development topped out at 700 billion Yuan in 2010, with commerce and technology reaching 400 billion Yuan the same year. Since 1999, more than 1,300 research firms have made their appearance on the market and 56 hi-tech zones created, something of an industrial revolution.

They have so received investment funding estimated at 10 trillion Yuan. The funding has helped half of the best Chinese companies nationwide build up some 700 laboratories and research centers that employ upwards of eight million Chinese workers. In record time the country built up a number of science and technology parks and transformed modest-sized cities into megalopolis-sized hubs.

One example is the city of Suzhou in Jiangsu Province. With 10 million residents, it among the leading centers of Chinese economic development. Its growth, and that of the Suzhou Industrial Park within it, is result of a joint effort between Beijing with Singapore, which in 1994 decided to invest $10 million in the city annually.

The idea emerged as the result of an American study that proposed the creation of advanced high-tech industrial park that would take 18 months to build and house and be home to highly professional companies whose workmanship would attract foreign investment. Covering an area of 250,000 square meters, the city has both universities and research facilities that house some 78,000 foreign students and the possibility to implement projects throughout the world. Its Xi'an Jiaotong-Liverpool University, a joint project founded in 2006, focuses on science and engineering.

Used TVs at Green Eco-Manufacture in Hubei Province.

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The flip side is social cost of development. Creating industrial parks and building up cities has required the relocation of millions of inhabitants, most forced from their homes into impersonal housing located outside the city center. The flow of Chinese from major urban centers into the fast-growing cities in the country's hinterlands has diminished quality of life, since many of the newly built-up urban centers were as yet prepared to adjust to massive population increases.

The outskirts of this urban megalopolis are littered with new and vast apartment complexes where residents might go months without meeting a neighbor, given the enormity of the buildings and the sheer number of apartments. At the same time, the government is often unable to uphold its end of ensuring basic living standards.

Sanitation is a frequent problem. Worse, the creation of new jobs hasn't seen commensurate interest in working to safeguard employee safety and rights. Though China has notably increased work opportunities in the information technology sector, it still lacks the educational facilities and infrastructure system necessary to give workers a chance to take advantage of the new goals.

Even today, most Chinese companies can't keep up with the kind of innovation generated by international competition abroad. Instead, it gives young people basic training but then encourages them to study outside the country to improve their skills. It also tries luring technological excellence from other countries. Notwithstanding, Chinese government continues to insist on the need to expand and develop technology. It exerts extreme pressure on the country's largest companies who are continually pressed to improve the resources in that sense.

Long-term dependence of foreign technology, China's leaders know, is a recipe for decline. The message is so ingrained that Beijing's aggressiveness seems to know no bounds. It's high-tech self-reliance or bust. Some of the goals border on science fiction. The latest five-year Plan has earmarked the equivalent of $600 billion to seven priority sectors: energy, environmental protection, biotechnology, new materials, IT, manufacturing and aerospace, and the production of clean and low energy vehicles. According to estimates, the investment will help China increase its GDP by eight percent by 2015, helping the country work to achieve sustainable growth and also assist in fulfilling its ambitious agenda in terms of forging competitive advantages.

Protecting the environment and increasing energy efficiency are Beijing's two major priorities. The government has decided to diversify in both sectors. It will increase its nuclear commitment while at the same time working to improve its wind and solar energy sources.

Three trillion Yuan will also be invested in coal mining concerns, since the country still depends on coal. Still. Beijing has promised to reduce carbon emissions and increase the amount of national forestland by 2015. By that year, it also expects to have 25 operative nuclear plants and build a million electric vehicles.

Since the password became innovation, China is using its deep pockets to attract foreign investment, hoping to study proven technologies and innovative up close and duplicate foreign prowess. While some companies continue defending their intellectual property and trademarks, others are deep into the Chinese market, putting market needs ahead of security. But so intense is the pressure that any company in the vanguard had already better be ready to experiment on what comes next. ●