



Design to lead the world

By CK Wong 2005.11.15

<http://www.ck-wong.ca/china/design%20to%20lead%20the%20world.pdf>

Introduction

In the West, Wal-Mart's low price tag goods mislead a lot of people that China is still in low tech. It is not surprise because when you do not have the exposure you don't have the chance to know. In fact China has spanned the full spectrum from copy to frontier design.

Evolution of the China's Manufacturing

An under developed country could not jump to world's leading manufacturing right the way. It is not the technology; the foundation has to be built first. It is not just skill labour. The major issue is the intellectual property, also known as the patent. Take Japan and Korea as example, both started from contract manufacturing. They received the design and followed the detailed instruction on how to manufacturing. The intellectual property was from the customer. Japan got it from United State. Korea got it from Japan. Funny enough both involve Dynamic Memory, DRAM. Both US and Japan were kicked out of the market because of the cost could not compete with the outsourced country.

Another prominent example is TSMC of Taiwan. It started out as a small fab and now is the world's leader. If you count Taiwan as the Greater China, it has designing and leading the world for some time. But I would like to focus on Mainland China.

The way China bootstrap from the agriculture base to industry contract manufacturing is a major step to train skill worker and re-educate the worker with the discipline of *work then you get pay*. It is not the communism that is the problem. It is the Cultural Revolution that has decouples the concept of pay and work. People just got pay but can get away without work or just work without pay.

Once the pay-work concept is restored, there is motivation to self-improvement: either skills or education. This is further fortified by the policy to allow people to own wealth. China still practices a strong foreign exchange policy. However, she also encourages citizen to save in gold which is much better than any foreign money to hold on.

With the improvement of education standard, motivation for work hard, opportunity to get the hands on more advanced work than the local industry, a large group of entrepreneur emerges. With the investment from Taiwan and the emigrant of oversea Chinese who spends dozens of years at IBM, Intel, Netscape, GE, Harvard, UC Berkeley, MIT, She has money and brain to build mid-tech.

To catapult into high tech you have to walk before you run. The low tech gear is the training ground for high tech. In order to bring down the price, challenging engineering is required to reduce components to save cost for that DVD player like your CD player.

Rocket Science

It is no kidding. China was the fifth country that launched that silly satellite which did nothing but broadcast the electronic tune worships Mao Tse Tung. It is home grown. Since then the aerospace has continued its journey. The most recent triumph was the second manned mission in last month (October 2005). The objective is scientific as well as business. The Space Centre at Inner Mongolia also a commercial satellite launching centre.

With the shuttle problem, the Chinese could be the next major country takes on the construction of International Space Station.

Data Communication

Hwa Wei is a US\$4B company in 2004. One quarter of its revenue is coming from oversea. Lennova is now manufacture the PC. Other than that China is building the second Internet. Hwa Wei is one of the four company building. Interesting enough Cisco sued Hwa Wei alleging it stole the router software. It sounds like the common espionage episode in the States.

Five years ago, American dominated the International Telephony Union conferences. Now half of the delegates are Chinese. Chinese has to modify the standard to meet the country's need. A strong sign of future domination.

High Tech Consumer Product

China is also the biggest TV manufacturing in the world. It is developing its cell phone, telephony central office equipments and your favorite: large flat screen TV. China does not have any gap on consumer product. US made a significant mistake on two major consumer products that make it exits the whole market: VCR and CD/DVD.

The consumer product gap is fatal. Even you have the patent but unless you make it, you could not dominate the market.

China does not have those patents. There are only two ways to deal with it: pay royalty or create your own. Patents need time to build up. So China pays the royalty or buys the complete factory, e.g. LCD factory from Japan.

Semiconductor is still the child stage. It is not doing the 13 nm technology yet. With the rate of progress, I could safely say that it would take only one quarter of the time for her to catch up.

Medical

Chinese medicine will open a new book for world medicine. It is not just herb and acupuncture. The traditional Chinese medicine discipline is completely different approach to curing. For starter, it starts before any symptom shows.

For the last fifty years, there is a new discipline started by combining the western and traditional Chinese medicine. This will definitely turn a few heads.

The most achievement is the human bird flu vaccine announced November 14, 2005.

Chindia or China

India started at least twenty years earlier than China in the high tech area. Yet I have to say they are at par now. As importer, India will continue compete with China at all levels. So will American. The wide spectrum approach of high tech by China is far more intense than India. Like it or not, China has started to compete in the mid-tech and soon she will compete at the high tech areas that we can relate to; not just rocket science.