CHAPTER 5

SUMMARY FINDINGS OF CHINA'S ELECTRONICS INDUSTRY

William R. Boulton

As this report describes, China is rapidly closing the gap on technologies needed for electronics manufacturing. It can be expected that WTO membership combined with more aggressive incentives for foreign direct investment will lead to changes over the next five years that will be significantly greater than those of the past five years. The priorities described in Chapter 1 will continue and will result in a more competitive business environment. But without forecasting the future, we can summarize the present as follows.

TECHNOLOGY AND LABOR ARE COMPETITIVE

As this report has found, China has access to most of the technologies needed to manufacture today's products. Companies are already using leading edge manufacturing technologies for assembly that include chip-on-board, chip-on-glass, and chip-scale-packages. While the semiconductor industry lacks the capacity to meet domestic needs, China's IC design capabilities are competitive in the global marketplace. The design of ASICs for advanced products, like MP3 players and set-top boxes, has been well established. Such ASICs can be manufactured by any number of firms in Taiwan, Singapore, or Japan.

In combination with having access to leading edge manufacturing equipment, China has an unlimited supply of cheap labor. In Shenzhen and Shanghai, factory workers can cost as little as $100 per month. In more rural areas, or in the western regions, labor can easily cost less than half the urban labor rates. With the new incentives in place to develop China's western regions, we can expect to see more investment in infrastructure and more foreign involvement in traditionally protected industries.

INCREASED INCENTIVE FOR FDI

The Ministry of Foreign Trade and Economic Cooperation (MOFTEC) has recently posted China's policies for trade and foreign direct investment. These policies are attached to this report as Appendix 1. They clearly state the incentives and describe the industries that are open for foreign direct investment, especially in the western regions.

ONE-CHINA POLICY

The consideration China's long-term electronics capabilities cannot ignore the current move for reunification of Taiwan with mainland China. Taiwan has been extremely successful in developing world market share in a wide range of electronics component technologies. In 11 years, Taiwan has gained 12.5% of the world's semiconductor market and hosts the world's leading semiconductor fab (TSMC). In key components, Taiwan appears able to gain a dominant market share in most segments that it enters. Previous reports describe Taiwan's successful strategy, a strategy that would support China upon reunification.

While the Chinese military is currently undergoing a dramatic restructuring (removing itself from commercial businesses), there is little evidence that military operations are able to compete with today's dynamic private sector. However, the continued privatization of state-owned-enterprises has the potential to generate significant capital. China Telecom and China Unicom have raised over US$8 billion in the U.S. stock market. It is hoped that like amounts of capital can also be raised through the privatization of other leading firms.

The global trip of President Jiang Zamin proved successful in acquiring advanced technology from the former Soviet Union and Israel. The move to improve relations with China's neighbors, including India, suggest a strategy to build China's leadership in the region. The reunification of North and South Korea was the result of Chinese initiative. The entrance into WTO and the rapid move to meet WTO requirements will attract more investment. This combined with more incentives for FDI and the establishment of a legal system that meets global standards will make China an even more attractive investment site.

CONCLUSIONS

We should not underestimate the attractiveness of a marketplace with 1.3 billion people. What is more, this market provides unlimited low-cost labor ($100/month for factory workers), world-class industrial parks (53 high-tech industrial parks) that provide tax incentives for up to 8 years and maximum corporate taxes of 15%, and a rapidly opening marketplace (WTO agreements). While there are significant risks and uncertainties that relate to political corruption and weak legal systems, the government appears committed to utilize foreign direct investment to help build its western regions (added investment opportunities and tax incentives). Such a commitment requires that the government build a business-friendly environment. If this does not happen, it is unlikely that the government can generate the new jobs needed to support continued restructuring of its economy, and the closure of many state-owned-enterprises that are not competitive in a free market economy.

In conclusion, the panel was impressed with the basic capabilities found in China. Many are considered equivalent to western or Japanese firms. Where capabilities are lacking, it is primarily due to the lack of investment, such as in semiconductors, where capacity costs are extreme. Over the next five years, IC capacity should nearly double. Even then, this will only meet about 25% of internal demand. Resolution of conflicts with Taiwan could rapidly improve this situation, making this a continuing political priority. Following the evolution of a "one China" reality could rapidly change the real status of Chinese technology capabilities, especially in electronics.