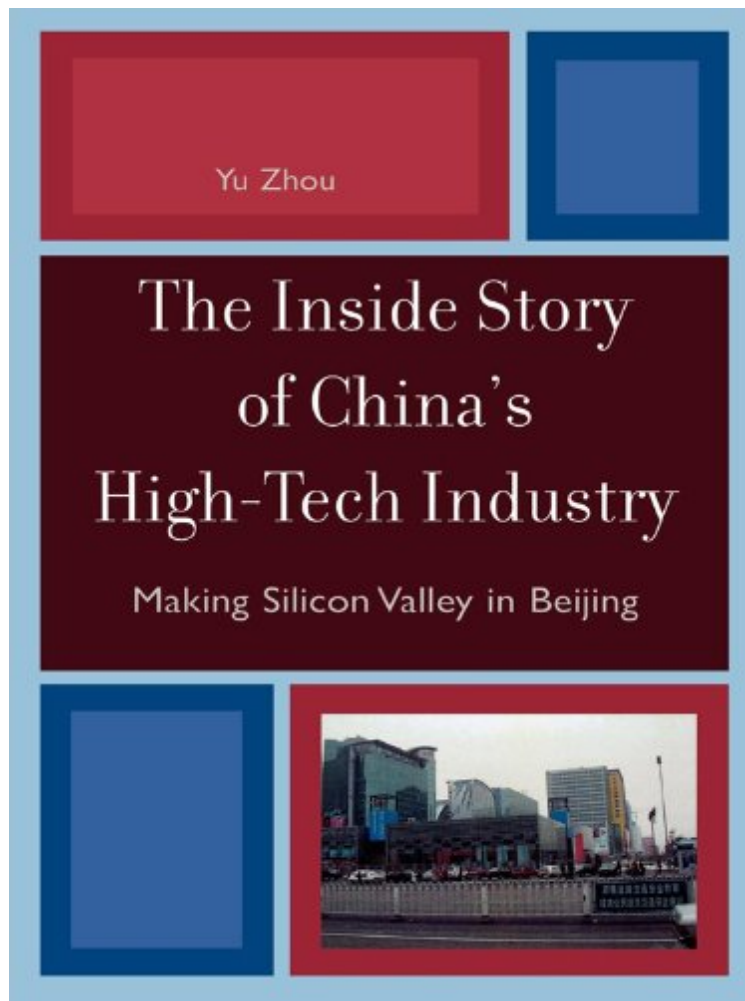


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Yu Zhou

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Yu Zhou : The Inside Story of China's High-Tech Industry: Making Silicon Valley in Beijing

(Asia/Pacific/Perspectives) before purchasing it in order to gauge whether or not it would be worth my time, and all praised The Inside Story of China's High-Tech Industry: Making Silicon Valley in Beijing (Asia/Pacific/Perspectives):

2 of 2 people found the following review helpful. Excellent Information and Perspective By Loyd Eskildson "The Inside Story of China's High-Tech Industry" by Vassar professor Yu Zhou focuses on the information telecommunications sector (ICT) within Beijing's Zhongguancun (ZGC) region known as China's 'Silicon Valley.' Yu Zhou contends that the combination of one of the world's largest technology markets, and China's export industry with multinational corporation (MNC) partners are the driving forces behind Chinese technology progress. She also argues

that ZGC is not a product of the state, though the government has encouraged its growth through incentives and assistance with licensing, taxation, international trade, finance and investment, intellectual property rights, etc. (Firms that perform poorly are denied these benefits.) Professor Yu Zhou's ZGC expertise derives from having grown up in the area, graduated from nearby Peking University, and returning several times after attaining her PhD. The Korean War (1950-53) exposed China to its technology backwardness. Given the U.S. blockade, the 1960 split with the Soviets, and its shortage of foreign currency, China moved to correct this problem through internal development. RD's first emphasis was on defense, creating the A-bomb and other military applications. Later, Deng Xiaoping changed the emphasis away from the military to civilian sector technology. However, initial efforts regularly led to developing prototypes inferior to existing foreign products. Then the Chinese government reduced RD funding - both to save funds and to encourage improved links between RD and commercial applications. (Conversely, U.S. efforts to aid RD usually just add more money.) China's RD efforts provided little benefit to the economy (Phase 1 = defense, Phase 2 = state-oriented) until they became focused on commercial markets. Rampant pirating of software, especially the Chinese version of Windows, the availability of acceptable MNC-provided printers that could create Chinese characters, and reduced tariffs (from 85% to 15%) largely foreclosed initial RD efforts in those areas. A brain-drain, both to overseas education/employment and local MNC employment, was another problem. In response, China created the Chinese Academy of Sciences (CAS) to encourage applied research and commercial spin-offs. Companies could also contract with university laboratories on a project or on-going basis. Since Taiwan had demonstrated that U.S.-employed returnees had been key to building its semiconductor industry, China also began active recruiting of their scientific expatriates, with many enticed by opportunities within ZGC. Another government step was setting ICT technology standards specific for China - preventing MNCs from easily using existing products to take over internal China markets. In 1982 the ZGC site was an indoor market where students bought inexpensive food and supplies, and sold off their extra food ration coupons. (The coupons were then sold to outside villagers ineligible for subsidized food. Subsidized food and ration coupons are both long gone in China.) ZGC is near Peking and Tsinghua Universities, China's "Harvard" and "MIT," as well as 36 other universities, CAS and 139 other research institutions. By 1999, RD investment in the area's buildings exceeded the \$37.5 billion spent on Three Gorges Dam. ZGC now holds almost 20,000 technology enterprises, 60% devoted to ICT, and employing 600,000 - including more than 15,000 expatriates. ZGC differs from the high-technology centers in Shenzhen and Shanghai in that they are export-oriented, while ZGC focuses on China's internal market. ZGC is dominated by domestic firms, including Lenovo Computers, Baidu (Internet search), UFIDA (software), etc. ZGC is one of China's 53 national-level high-technology zones, and generates about one-seventh of their total tax revenue. Within ZGC are 57 national-level labs, 26 national engineering research centers, and 29 national engineering and technology centers. Access to specialized skills and resources is easy. A \$147,500 bonus paid every 'leading talent' who establishes a business at ZGC reduces barriers to entry. Successful innovators and 'angel investors' benefit from stock grants and dividends. Author Yu Zhou contends that the large and relatively unique Chinese home market allows domestic firms to move directly into manufacturing their own brands rather than moving progressively from original equipment manufacturing (OEM) for MNCs to original design and manufacturing for MNCs, to marketing-competent manufacturers of their own brand. This is accomplished by a combination of taking advantage of the high-quality supply chain that MNCs establish for their own products, while also creating special, usually much cheaper, designs for China's market. They then progressively replace foreign-brand products sold in China, from low- to high-end (like Toyota, Honda, and Nissan did with U.S. vehicles). MNCs have been hampered in doing this by their over-focus on expensive features and costs associated with satisfying their overseas home markets. Those MNCs also were trapped by a historic strategy of first appealing to high-income customers - in China, however, that market was too small for economic success. Only recently have MNCs begun designing products and distribution networks for the China market; indigenous firms, however, have typically succeeded better at this. China's Lenovo, Baidu, DVD and mobile phone manufacturers, and others have thus taken advantage of the Chinese market and flourished there. MNCs have been hampered, not by direct government interference, says Yu Zhou, but because they didn't match the Chinese market. Still, both sides benefit - eg. UFIDA's enterprise management software has an Oracle database inside, and MNCs are learning from local firms' marketing expertise. Unfortunately, "The Inside Story of China's High-Tech Industry" doesn't provide information on how researchers at ZGC and other locations modified products for the Chinese market, or otherwise innovated for global markets. Peter Williamson and Ming Zeng's "Value-for-Money Strategies for Recessionary Times" (Harvard Business Review, March 2009) does. Build Your Dreams' (BYD), for example, was established in 1995 - its original product was a nickel-cadmium rechargeable battery, competing with Japanese imports in China. Handicapped by a shortage of capital, it used manual labor instead of expensive machines, and also found a way to avoid the need for expensive climate-controlled rooms. BYD then innovated from nickel-cadmium into more powerful lithium-ion products, while avoiding fire mishaps that plagued competitors. BYD is now the world's 4th largest rechargeable battery producer. Meanwhile, it acquired a Chinese auto manufacturer, became the first mass-producer of a plug-in hybrid, is now exporting electric cars, and is expected to soon compete against the Chevy Volt in the U.S. Zhengzhou Zhongxing Medical Systems was established in 1998 to provide direct digital radiology technology products. Instead of the

standard line scan approach, it used flat-panel imaging to create machines at one-tenth the cost with increased capability, and now has 50% of the Chinese market. Shanghai-based Goodbaby created a stroller that converts into a car seat, and now has 80% of the Chinese market, and 25% in the U.S. Shanghai Zenhua Port Machinery focuses on custom designs and a variety of standard models, recognizing that each port is different; it has 54% of the world market for harbor cranes. Focusing on niche markets is another approach. Haier, now the world's fourth-largest producer of white-goods, began its export success by making wine coolers - a small, neglected U.S. segment that also served motel/hotel and college dormitory needs. Originating in 1920, Haier became a state-owned enterprise after the 1949 Communist takeover. The firm built refrigerators for the Chinese market, but was in danger of failure in 1984 due to poor quality. A new city-appointed manager corrected that problem, and Haier further improved through acquiring German equipment. Profitability returned. Partnering with Target, Haier set up a temporary store in Times Square filled only with its much-cheaper products. The result was invaluable publicity from eg. selling 7,000 air conditioners in seven hours. It also set up an enticing billboard within view of Wal-Mart's Bentonville headquarters, piquing interest and gaining distribution through that firm as well. Shinco was the largest DVD manufacturer in 2002 China, but didn't want to confront Sony, Samsung, or Panasonic in the global market. Thus, it focused on the small portable-DVD player market - cutting costs 30-50% while adding an error-correction feature it developed for playing poor-quality pirated DVDs. Sales increased 10X and Shinco became a global market leader with 30% share. Finally, perhaps most startling of all is how Chinese RD differs from that in the U.S. - the proportion of effort spent on engineering (vs. basic science) is much higher; within research expenditures, the proportion on personnel is much lower in China, and the savings are used for greater investment in instruments and equipment. These differences all help substantially increase commercialization odds of success. Putting this into perspective, the U.S., using 'every man for himself' Adam Smith capitalism, is battling China, using 'socialism with Chinese characteristics,' for the economic benefit of their respective nations. The Chinese have averaged about 9.5% real GDP growth/year for over 30 years, the U.S. about 2.5 - 3.0%. To-date, major manufacturing capacity in the U.S. has been hollowed out, and more will follow. However, RD effectiveness will be key to this next phase of the competition. Unfortunately, our research efforts are much less effective than China's in supporting economic growth for the following six reasons: 1) About half U.S. 'RD' research funded by universities is devoted to the social sciences and liberal arts - mostly arcane, redundant, and irrelevant to economic growth. (Most of their peers don't even bother to cite this research.) 2) The U.S. devotes a higher proportion of RD to defense efforts, as well as 'me-too' drugs - neither add much of general value. (Regardless, on the military side China's asymmetric warfare approach gives their military RD greater effectiveness as well.) 3) Most future economic growth will occur in Brazil, Russia, India, and China. U.S. firms, however, have been slow to tailor products to these markets. Products developed for developing nations are much more likely transferable to developed nations than vice-versa. 4) U.S. firms are rapidly increasing RD outsourcing to reduce costs and meet Chinese government demands - 1,200 MNCs now conduct RD in China. This not only aids Chinese corporations and its universities, it also weakens American university science programs. In addition, China increased its own RD spending 25% last year, is probably #2 in the world already and certainly much closer to the U.S. when measured by PPP (purchasing power parity). 5) China's RD is not impeded by ethical concerns over stem-cell, genetic, or animal research. (This is not to imply they are amoral - Asia simply has a different set of values.) 6) BGI conducts cutting-edge genome research using outstanding undergraduate students in key roles, advancing the years they can contribute, and lowering costs. Others may also. Bottom-Line: ZGC is only one of China's major RD centers; Seoul, Korea and Bangalore, India are also major RD centers to be reckoned with. One doesn't have to be a futurist to see where the U.S. is headed in this second round of economic competition. 3 of 3 people found the following review helpful. China has impact on the stock markets and people's careers all over the world. By Zhe Li I could not put this book down until I finished reading it! This book is not only about what went on in the past 30 years, but also about how China is positioned for the next phase of the economic growth in the coming years. A part of the current strategy is apparently from Taiwan's successful experience, another part is apparently because of China's huge market. What Dr. Zhou saw on the streets of Zhongguancun and collected from official sources in Beijing over the past 30+ years suggests the many different roles that people in near future can possibly play and get benefits from.

In the 1980s, China faced the monumental task of creating, from scratch, internationally competitive companies. This challenge was especially daunting in the information and communications technology (ICT) sector. The Inside Story of China's High-Tech Industry describes the emergence and growth of this industry in China through a historically situated analysis of China's leading science park, Beijing's Zhongguancun, also known as China's Silicon Valley. Zhou challenges the prevailing view that foreign multinational corporations and exports are the driving forces for technological progress in less developed countries by arguing that, in the case of China, it is the conjunction of domestic and export markets that has provided the main impetus to technological learning and the development of industry competitiveness. This is the best treatment to date of China's most important innovation region. It will be useful for scholars and students in the fields of economics, regional sciences, geography, planning, sociology, information technology, and business management, as well as for anyone interested in the rise of China and global

technological development.

The Inside Story of China's High-Tech Industry is a richly illuminating piece of scholarship that offers an interesting new perspective on the development of Beijing's Zhongguancun high-technology district and the implications of Zhongguancun's path for China's future technological and economic development. . . . Zhou impressively captures much of the policy, structural and even geographic change that has occurred in Zhongguancun over the past three decades. . . . Valuable and impressive. (China Quarterly)The most comprehensive and readable account of the development of the Zhongguancun (ZGC) high-technology area in Beijing to date. . . . It is by far the most informative and rich history of ZGC, and the combination of English and Chinese sources makes the evidence highly convincing. . . . A must-read. (Regional Studies)A landmark contribution to China's understudied RD. This outstanding work represents some of the finest recent scholarship in Chinese urban and regional studies, which hopefully will lead to more case studies of individual industrial parks. I recommend it enthusiastically to those who are interested in science and technology development in Chinese cities. (Eurasian Geography and Economics)Anyone who is interested in high-technology industrialization, regional innovation systems, development of domestic companies, and high-technology multinational companies in China should read this well-researched book. Overall, Zhou successfully presents a comprehensive account of the evolution of ZGC. The book is well-written and easy to read. Zhou's personal experience as a Beijing native and her intense interaction with the interviewees truly provides an insider's view. (Peilei Fan Economic Geography)This book is the ultimate guideline for researchers interested in ZGC and the dynamic technological development of China in general. (The China Journal)The development process of Zhongguancun is an amazing story. Every researcher and student on China who has not surveyed Zhongguancun ought to read The Inside Story of China's High-Tech Industry. I know of no other place where these crucial issues are explained as clearly and logically as they are in this book. (Jici Wang, Peking University)An informed and very readable account of the growth of 'China's Silicon Valley.' As debates about China's capacity for technological innovation unfold, the arguments presented here will get increased attention. A fine primer for explorations into China's high-tech future. (Richard P. Suttmeier, University of Oregon)This detailed study of the emergence of China's principal high-tech industrial cluster, demonstrating how it is shaped by both local and national processes and global high-tech networks, draws important conclusions about the conditions of possibility for technological dynamism and industrial evolution in the global periphery. It demonstrates that indigenous firms can out-compete TNCs in local and regional markets, that they can work with the resources and knowledge base of TNCs and established clusters, and that a developmental state can make a difference, particularly in a nation with a large and distinctive domestic market. In short, this book is essential reading for those seeking to understand the dynamics of and possibilities for industrial development in the former third world. (Eric Sheppard, University of California, Los Angeles)Most of the stories about China's technology industry are completely contradictory: China will either soon become a technology superpower or is unlikely to escape from its dependence on Western technology. By focusing on emerging Chinese companies and their interaction with multinational technology firms, Yu Zhou bridges these two competing views, bringing a much needed clarity to a rapidly changing market. Filled with the details that can only be gleaned from in-depth field work, The Inside Story of China's High-Tech Industry is a valuable contribution to the debate about China's technological future. (Adam Segal, Council on Foreign Relations)About the AuthorYu Zhou is associate professor in the Department of Earth Science and Geography at Vassar College.