On the Development Of China's Information Technology Industry

Jiang Zemin

ON THE DEVELOPMENT OF CHINA'S INFORMATION TECHNOLOGY INDUSTRY

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ON THE DEVELOPMENT OF CHINA'S INFORMATION TECHNOLOGY INDUSTRY

ABOUT THE AUTHOR

A native of Yangzhou, Jiangsu Province, China, Jiang Zemin was born on August 17, 1926.

Starting in 1943, he took part in student movements led by underground organizations of the Communist Party of China (CPC), and eventually joined the CPC in April 1946. He graduated from the Electrical Engineering Department of Shanghai Jiao Tong University in 1947.

After the liberation of Shanghai, he served successively as deputy engineer, chief of the works section and concurrently as head of the power workshop, Party branch secretary, and first deputy director of the Shanghai Yimin No. 1 Foodstuff Factory; first deputy director of the Shanghai Soap Factory; and chief of the electrical appliances section of the Shanghai No. 2 Design Sub-bureau of the First Ministry of Machine-Building Industry.

In 1955, he was a trainee at the Stalin Automobile Works in Moscow, USSR.

After his return to China in 1956, Jiang Zemin served successively as deputy chief of the power section, deputy chief power engineer, and director of the power plant of the First Automotive Works in Changchun.

After 1962, he served successively as deputy director of the Shanghai Electrical Appliances Research Institute, director, acting Party committee secretary, and Party committee secretary of the Wuhan Thermo-Engineering Machinery Institute, and deputy director-general and director-general of the Foreign Affairs Bureau of the First Ministry of Machine-Building Industry.

After 1980, he served as vice chairman and concurrently as secretary general of the State Administration Commission on Import and Export Affairs and the State Administration Commission on Foreign Investment, and was a member of the leading Party groups of these two commissions.

After 1982, he served as first vice minister of the Ministry of Electronics Industry and deputy secretary of its leading Party group, and later as its minister and secretary of its leading Party group.

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After 1985, he served as mayor of Shanghai and as deputy secretary, and later as secretary of the Shanghai Municipal Party Committee.

In September 1982, he was elected a member of the CPC Central Committee at the Twelfth CPC National Congress.

In November 1987, he was elected a member of the Political Bureau of the CPC Central Committee at the First Plenary Session of the Thirteenth CPC Central Committee.

In June 1989, he was elected a member of the Standing Committee of the Political Bureau and general secretary of the CPC Central Committee at the Fourth Plenary Session of the Thirteenth CPC Central Committee.

In November 1989, he assumed the position of chairman of the CPC Central Military Commission at the Fifth Plenary Session of the Thirteenth CPC Central Committee.

In March 1990, he was elected chairman of the Central Military Commission of the People's Republic of China at the Third Session of the Seventh National People's Congress.

In October 1992, he was elected a member of the Political Bureau and its Standing Committee and general secretary of the CPC Central Committee, and was appointed chairman of the CPC Central Military Commission at the First Plenary Session of the Fourteenth CPC Central Committee.

In March 1993, Jiang Zemin was elected president of the People's Republic of China and chairman of its Central Military Commission at the First Session of the Eighth National People's Congress.

In September 1997, he was reelected a member of the Political Bureau and its Standing Committee and general secretary of the CPC Central Committee, and was appointed chairman of the CPC Central Military Commission at the First Plenary Session of the Fifteenth CPC Central Committee.

In March 1998, he was reelected president of the People's Republic of China and chairman of its Central Military Commission at the First Session of the Ninth National People's Congress.

In November 2002, he was appointed chairman of the CPC Central Military Commission at the First Plenary Session of the Sixteenth CPC Central Committee.

In March 2003, he was reelected chairman of the Central Military Commission of the People's Republic of China at the First Session of the Tenth National People's Congress.

In September 2004, the Fourth Plenary Session of the Sixteenth CPC Central Committee accepted his resignation as chairman of the CPC Central Military Commission.

In March 2005, the Third Session of the Tenth National People's Congress agreed to accept Jiang Zemin's resignation as chairman of the Central Military Commission of the People's Republic of China.

EDITORS' NOTE TO THE ORIGINAL CHINESE EDITION

Since the beginning of the 1980s, Jiang Zemin has closely followed development trends in the information technology (IT) industry and the development course of informationization in the world. He has also conducted thorough research on issues surrounding the development of the IT industry and informationization in China, and articulated a series of important ideas concerning developing the IT industry and promoting informationization in the country.

This book comprises 27 articles, reports, speeches, and essays concerning the IT industry and informationization written by Jiang Zemin between August 1983 and November 2008, plus two appendices. Thirteen of these were written between 1983 and 1985 when Jiang Zemin held the position of Minister of Electronics Industry of the People's Republic of China; one was written in 1989 when he was both a member of the Political Bureau of the Central Committee of the Communist Party of China (CPC) and secretary of the CPC Shanghai Municipal Committee; ten were written between 1989 and 2002 when he was general secretary of the CPC Central Committee, president of the People's Republic of China, and chairman of the Central Military Commission; and three were written after 2004. In "Development of Our Country's IT Industry in the New Period," dated 2008, Jiang Zemin reviews China's experience in developing its IT industry.

The author has reviewed and approved all the materials appearing in this book.

Party Literature Research Center of the CPC Central Committee and Shanghai Jiao Tong University
April 2009

PREFACE*

November 8, 2008

Energy resources and information technology (IT) are two strategic industries that affect China's future development, and are also two fields that I have long taken an interest in. To understand the reason for my lasting interest in energy resources and IT, we need to begin with my youth. I majored in electrical engineering at university. I had a deep interest in energy resources and electronics, and acquired a certain understanding of them. Later, as director of the power plant at Changchun First Automotive Works and Minister of Electronics Industry, I conducted research on cutting-edge issues in these fields.

In 1989, at the age of 63, I was considering to become a professor at my alma mater, Shanghai Jiao Tong University, after retiring from my position as secretary of the CPC Shanghai Municipal Committee. To become a professor one needs accreditations; so, I wrote two articles, one on energy conservation and the other on microelectronics. They were later published in the *Journal of Shanghai Jiao Tong University*, and I successfully defended them at a meeting of the university's Academic Committee, whereupon the university appointed me as a professor. Thereafter, I began working at the CPC Central Committee. In 2007, the university invited me to write an article. As I thought that now that I had really retired, I should complete my unfinished research. Considering the great changes that have taken place in the energy resources and electronics industries in nearly 20 years of development since then, I delved deeper into the research I had done for those two articles, summarized the past, explored the future, and offered recommendations. As a result, "Reflections on Energy Issues in China" came out in March 2008, and "Development of Our Country's IT Industry in the New Period" was also published recently.

The IT industry is the strategic high ground for international competition, and it has been developing rapidly since the mid-20th century. In the

*Speech at a meeting with the participants in a seminar on the article "Development of Our Country's IT Industry in the New Period."

early 1980s, when I was Minister of Electronics Industry, I deeply felt the momentum of this development, and perceived that the discrepancy between China's level and the world's advanced level was so great that we had to do our utmost to catch up. At that time, I proposed the policy of "building a foundation, raising our level, improving quality, pursuing profits, octupling the gross output value, and getting 10 years ahead of the rest of the national economy."[1] In 1984, I published "Revitalize the Electronics Industry and Promote the Four Modernizations"—modernization of agriculture, industry, national defense, and science and technology—in the journal *Red Flag*, in which I argued that the electronics industry has a leading position in modernization. After beginning work at the Central Committee, I continued to pay close attention to the development of the electronics and IT industries, and frequently listened to reports from various sources concerning them. After the Gulf War broke out in 1991, I proposed that in preparing for future military struggles, we had to focus on winning local wars fought under modern technological conditions, especially high-tech conditions, and urged that informationized weapons and equipment should become a vital element in our army's fighting capabilities. At that time, the Central Committee made a number of policy decisions and arrangements to promote the development of the IT industry. Against the background of reform and opening up, and with the concerted efforts of the entire sector, the IT industry entered a period of rapid development, and is now in excellent condition. I believe that our country now has a foundation, a market, the technology, and qualified people, and that the coming period will be a time of great achievement for this industry. It is important for us to seize this strategic opportunity, clarify our thinking on development, and focus on the industry's priorities. As long as we work tirelessly and intensify our efforts, we can certainly transform our country into a leader in the IT industry.

[1]This is a summary of the electronics industry's development tasks for the foreseeable future made at a national working meeting of heads of departments and bureaus of the electronics industry. "Octuple the gross output value and get 10 years ahead of the rest of the national economy" means by 2000, the 1980 gross output value of China's electronics industry should be octupled and major products and production technologies should reach the level advanced industrialized countries will have reached around 1990, with certain technologies reaching the world's advanced level prevailing at that time. The latter objective is 10 years more ambitious than the objective the government set for the national economy as a whole of reaching the level those countries reached around 1980.

In "Development of Our Country's IT Industry in the New Period," I review the experience in developing the IT industry since the introduction of reform and opening up, and summarize the cutting-edge issues in the industry, and thus this article addresses both the field of science and technology and the science of policy making. I spent more than half a year writing it, during which time I asked a number of comrades to survey a vast quantity of material for me and I discussed it with experts on more than ten occasions. I changed its structure and content many times in order to make it cohesive, scientific, standard, and able to withstand the test of time. I tried to express myself in as simple language as possible in the hope that this would induce more people to pay attention to, reflect on, and study our country's IT industry, and work together to explore avenues for its successful development. I am convinced that the publication of this article will play a positive role in developing our country's IT industry. All of you present here today hold positions of responsibility in the IT industry. I would therefore like to share with you comrades my hopes and desires. Naturally, some of these issues remain open for further discussion.

First, we need to value the role and position of the IT industry. IT evolves quickly. It is very versatile and highly pervasive, and it will become one of the most important areas of future scientific and technological innovation. I do not exaggerate in saying that any industry will make tremendous progress if it incorporates IT; no other technology can compare with IT in this regard. In the course of more than half a century of development, the IT industry has experienced ups and downs, but it has never stopped innovating, which is a manifestation of its tremendous vitality. The IT industry has become a multiplier of economic growth, a transformer of development patterns, and a propeller for industrial upgrading. Furthermore, the IT industry epitomizes a country's international competitiveness, national defense capability, and overall national strength. Therefore, we should be fully aware of the role and position of the IT industry in economic and social development. We not only need to understand this but also reflect this understanding in our work and strive to make the industry strong and large in order to provide strong support for economic and social development.

Second, we need to grasp the development trends in the IT industry. Since the beginning of this century, IT has been updating and upgrading more rapidly than ever before, engendering major new breakthroughs.

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The trend toward clustering and integration in the industry is becoming increasingly evident, competition in intellectual property and standards is becoming increasingly intense, and ubiquitous network environments are emerging. There can be no doubt that informationization is the general trend of development in our time and that the IT industry will become an ever more important engine driving economic growth and scientific and technological innovation. We should keep updating our knowledge, conduct in-depth investigations and studies, and strive to grasp the trends and tendencies in informationization. As long as we have a good idea of what the future holds in store, our study of plans and policies for informationization will have the right orientation and we will formulate correct policies. Of course, this study and research will also help our cadres learn more about science, improve their scientific literacy, master scientific methods, foster a scientific spirit, and become better equipped to make scientific policy decisions.

Third, we need to identify the key links in the development of the IT industry. To accelerate the development of the industry, we must clearly define development strategies and priorities. In "Development of Our Country's IT Industry in the New Period," I summarize the current conditions of the IT industry in terms of scale, capacity for innovation, development of enterprises, IT application, and structures and institutions.[2] On the basis of a review of experiences and an analysis of problems in the development of the IT industry, I expound the principles of independent controllable development, open and compatible technologies, integrated and comprehensive applications, military and civilian interaction, and a

[2]The passage in "Development of Our Country's IT Industry in the New Period" reads, "Our country's IT industry has already grown to a considerable size, but it still has serious structural weaknesses that make it very difficult for the industry to strengthen or expand further. Although it has great capacity for innovation in some areas, it will long be subject to pressure from developed countries' overall competitive superiority, and the mechanisms for funding innovation and turning research results into practical applications still need to be improved. Enterprises are now market players, but they still lack the ability to face stiff competition and participate in the international division of labor, and it will take a long time for them to cultivate overall competitive advantages. Some successes have already been achieved in IT application; however, informationization is uneven and there is an urgent need to deepen the integration of informationization with industrialization. The state has been very successful in its efforts to support and guide the IT industry, though structural and institutional obstacles hindering the industry's development remain and reform and opening up are in dire need of new breakthroughs."

market-driven approach for skipping development stages. This means that we must be able to exercise independent control of IT relating to national security; be self-reliant and endeavor to develop core technologies that we cannot acquire by purchase or trade; persevere in further opening to the outside world, pay attention to conforming with international standards, and constantly improve our country's position in the division of labor within the global industry; establish industrial bases that benefit from concentration, promote interconnection and convergence of different disciplines, and encourage integrated innovation; integrate military and civilian applications, combine military with civilian production, develop mechanisms that prompt them to stimulate each other, and achieve bidirectional transformation and balanced development; give full play to the basic role of the market in allocating resources, strengthen government guidance, and stimulate the vitality of all types of market entities; and develop ambition and acumen for innovation and confidence in success, aim for advanced technology, and strive to skip stages in the process of developing the IT industry. We must then use informationization to drive industrialization and use industrialization to promote informationization, thus creating a path for developing the IT industry with Chinese characteristics. The information industry is extensive and includes many categories; thus it is impossible to develop all areas at the same time. Therefore, we must focus on key projects and set others aside. The development of core basic industries such as microelectronics, computers, software, and key components and their materials must be given priority, as well as industries in which China enjoys an international competitive advantage such as broadband mobile communications, next-generation networks, and information services. We need to concentrate our strength on tackling key problems in these areas and strive to make major breakthroughs.

Fourth, we need to provide more policy support for the IT industry. The US, Japan, European countries, and other developed economies have launched national strategies for developing their IT industries, and have introduced many policies for developing core technologies, dominating information resources, controlling the Internet, and formulating international standards. Our country has long been successful in its efforts to support and guide IT industry development, though there still remain structural and institutional obstacles hindering development, and policy support for the IT industry's development is still relatively weak. We should give high priority to policies on the IT industry in our system of

economic policies, including launching major state projects; promoting the integration of telecommunications, computer, and radio/cable TV networks; encouraging domestic production; and implementing effective fiscal and taxation policies, investment and financing policies, and human resources policies. We need to provide effective guidance, formulate market rules, remove departmental and regional barriers, and improve laws and regulations in order to create a favorable policy environment for developing the IT industry.

Fifth, we need to pay close attention to informationizing our national defense equipment. Local wars fought since the 1990s clearly indicate that the form of war in human society has shifted from mechanization to informationization and that profound changes have taken place in battle patterns, battle theories, and force structures. We must adapt to world trends and make informationization the core of the revolution in military affairs with Chinese characteristics. Comrades from the army and the fields of national defense-related electronic science and technology must take a broad view and use foresight in promoting the revolution in military affairs with Chinese characteristics, utilize electronic IT to boost and elevate the systematic capability of our weapons and equipment to confront an enemy, and quicken the pace of army informationization.

While writing "Development of Our Country's IT Industry in the New Period," a number of organizations provided me with a wealth of materials and information, and the comrades who helped with the writing gave me a great deal of concrete assistance. I wish to express my thanks here to all of them once again.

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