

THE CONTRIBUTION OF LEADERSHIP TO CHINA'S INFORMATION REVOLUTION

Ernest J. Wilson III, and Qing Duan

Department of Government and Politics, University of Maryland

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It is widely believed within China and beyond that the political and economic future of the country will be shaped in important ways by the expansion of new, powerful information and communications technologies (ICTs). However, there is not agreement on what the precise impacts will be, nor how one should analyze and understand them. This essay makes two principal claims. First, it insists that the relationship between ICTs and social outcomes is much more ambiguous than typically claimed. Second, we argue that to understand better ICT's future impacts on Chinese society requires one to analyze the particular individuals in China who are the agents of these impacts. Understanding the information revolution is important; understanding the information revolutionaries is equally important. The Internet does not "diffuse" by itself, and Internet Service Providers and Internet cafes do not sprout on their own. They are created by particular women and men whom one can identify. So in addition to analyzing the underlying demographics of broad social aggregates of consumer groups ("rural/urban";

male/female, etc); measuring penetration per capita or public policies of privatization or competition at the national macro level, it is equally essential to understand the dynamics at the micro level in China – to try to understand the micro motives and individual behaviors of the men and women who since 1990 have been championing the cause of wider access to information in the Middle Kingdom.

The Chinese leadership itself has made it quite clear they believe that information and communication technologies (ICTs), especially the Internet, can transform the Chinese economy toward greater efficiency, bolster its national security and simultaneously shore up Communist party control and its administration of the country (Loveluck, 1996), through a process they term “informatization.” Other observers within and beyond China claim quite the opposite – ICTs will indeed transform the economy, and it will also transform political relations, steadily advancing democracy and civil society (Taubman 1998). Critics of the regime are convinced that ICTs will inevitably make China into a more transparent and democratic society. A recent book *China Dawn* draws breathless conclusions about the capacity of the new entrepreneurs to quickly transform China’s economy into a capitalist market (Sheff 2002).

Yet there are skeptics about the transformative role of IT in China, especially its impacts on politics. (Drake, et al 2002; Kathilil and Boas, 2003). NYU sociologist Doug Guthrie (1999) for example debunks the radical techno-determinist view of China. This echoes a healthy debate beyond China over the degree to which IT is a relatively autonomous change agent with substantial power to transform the society in its own image, or that IT is deeply embedded in society and will reflect its prevailing hierarchies (Evans, 1995, and Orlikowski and Iacono, 2000) .

Regrettably, while they disagree on their interpretations, neither the techno-determinists nor the social embeddedness schools have seriously analyzed individual attitudes and behaviors toward ICT diffusion. Some groups like the China Internet Network Information Center (CNNIC) do excellent, serious research on attitudes and behaviors but strictly using very aggregate survey data about millions of people. (Guo Liang, a philosopher at China Academy of Social Sciences (CASS) has done similar surveys on the habits of Internet users in major cities) Others, like David Sheff, do take individuals more seriously, but lack adequate theoretical and conceptual constructs to frame and nuance their conclusions (Sheff 2002). Authors like Milton Mueller and Zixiang Tan (1997) painstakingly review leading institutions like ministries or public enterprises, as a clue to the determinants of Internet diffusion in China (see also MOSAIC, Foster and Goodman 2000). But as far as we are aware, despite the hyped claims there are no conceptually-explicit, theoretically informed studies that conduct extended interviews of the individual actors who struggle to bring these new technologies to China, and to create the institutional, political and technical conditions to make them accessible and embedded within local society. We believe scholars should consider the following kinds of micro-level questions: Who are the Internet enthusiasts and innovators in China? Do they share common features, or here in the early stages of the informatization of China, are they idiosyncratic and unique? Do they constitute a distinct and recognizable social stratum in China, or do they remain unformed and inchoate?

This essay represents an initial foray into these uncharted territories to urge others to follow. Certainly, scholars like Joseph Fewsmith (2001, elite behavior studies), David Goodman (1999, the new middle class) have analyzed individual behaviors in related

fields. Margaret Pearson (1997), Michel Oksenberg and Kenneth Liberthal (1988, 1995) and others examine elite networks' impact on commercial activities or policy.¹ Yet there is a need for more analysis of micro-motives and micro-behaviors separately in the ICT sectors. To that end we present reports of interviews conducted with a variety of individuals who play important and or emblematic positions in China's information revolution. Whether a member of the senior parastatal elite maneuvering for greater electronic commerce control, or a start up entrepreneur or a university researcher, the role of the individual is terribly important. Even in a huge, densely populated nation like China, with overbearing state intrusions, one cannot adequately understand Internet diffusion without appreciating the contribution of individuals.

Framework and Method

This essay results from a total of 15 research visits to China over the past five years (1998-2003). We set out to identify the Information Champions through a *reputational* approach, by first identifying people known by the interviewers to be at the top of the ICT field and/or close observers of it in business circles, the press, universities and research centers. We asked initial respondents to identify the ten most important people in the ICT field who were most responsible for its early performance. Through this iterative process we traced the original and subsequent champions from the late 1980s through the present. As we did so, we discovered that the individuals we call "Information Champions" appeared in successive waves of innovation, and that while

¹ The study of interactions among social networks, institutions and policy outcomes is well developed in the scholarly literature on China. Writers like Kenneth Lieberthal, Margaret Pearson, Lucien Pye, Franz Schurman and others have written extensively on the role that informal private networks play in Chinese governance, and the ways that networks intersect with, subvert and support formal institutions. According to Pye, "In China a wide divide has always existed between formal government, emanating from the imperial or national capital, and the private governance that rules the daily lives of people" (Pye 1985, 292). Arguably, it is the space between the formal agencies of government and the informal agents of private society where the modern Chinese Internet exists.

each wave was somewhat different the champions did share some features of societal background, training, and social and political networking skills.

The subject of this inquiry is a group we call the “Information Champions”. These are individuals who play motivating and leading roles in the diffusion of ICTs. They are “early adapters”-- individuals who are technical and social innovators ahead of their countrymen. Putnam defines leaders in terms of influence on decisions—elites are influential individuals with substantial indirect or implicit influence, those to whom the decision makers look for advice, whose interests and opinions they take into account, or from whom they fear sanction (Putnam 1976, 6). These are leading individuals who are not only active consumers of ICT services and goods, but also active in expanding the supply and accelerating the access of others to these technologies. They run the range from commercial entrepreneurs to policy entrepreneurs to researchers. They seek to restructure the legal, regulatory and political environment to promote more bottom-up popular ICT diffusion. Interviews with these individuals suggest they are highly motivated and deeply engaged with a sense of mission.

Some new work on ‘e-leaders’ is appearing in the literature on ICT. Most of the research has been done in the private sector, on e-entrepreneurs, or e-business leaders, and so forth (Hamel, Mills), and there is a very small but growing literature on e-leaders in other social arenas, especially among historians and journalists who have written historical accounts of the emergence of new technologies in North America (Abate 1999, Hafner and Lyon, 1996). But this is a field still in its infancy, with an overly narrow focus.

We believe that in China and elsewhere it is impossible to understand one kind of societal role without understanding other roles in close social proximity (Armstrong 1973), including opponents.. These champions of radical ICT change regularly ran against *ICT conservatives* fighting to preserve the status quo, such as managers in the state owned enterprises like China Telecom, or senior officials in the relevant ministries. These ICT conservatives opposed the ICT champions at almost every turn, and they were victorious more often than not. Because the environment in which they began to operate in the early 1990s was heavily statist and monopolist, dominated by China Telecoms, powerful, centralized ministries like Ministry of Information Industries (MII), and intrusive agencies like the Bureau of State Security, many ICT enthusiasts were led by their conditions to pursue liberal, bottom up rather than top down visions of Internet diffusion. As enthusiastic purveyors of brand new experimental technologies they were forced to try to alter the regulatory or legal status quo rules of infrastructure access, pricing, and so forth in order to make more social and political space for these new technologies to flourish. The Information Champions had to define themselves to some extent as arising in opposition to the Information Conservatives. They were early visionaries for new technology-led possibilities for China.

Thus, the term “Information Champions” captures the character of social, political and commercial entrepreneurialism found in key individuals associated with the Information Revolution in China. Let us now review three features of these ICT innovators– individual, group networking, and temporal.

The Individual Dimensions

A curious feature of the Information Champions that we interviewed is that many shared similar social backgrounds. Most interviewed were born into middle stratum families neither highly privileged nor greatly underprivileged. Their parents were often professionals, such as physicians, scientists or engineers. Many Champions studied abroad. These individuals shared similar attitudes as well. The early innovators especially possess a kind of quasi-missionary fervor about their lofty goals of bringing the Internet to their country and to their people. People like Edward Tian (InfoAsia and then CNC) and Edward Zhang (SparkIce) combined social vision and CEO leadership skills. When they returned from abroad they were very impatient with their country's slow pace of technological changes. They recognized that China risked being left behind in the information revolution as it was in the industrial revolution. However, the Champions were able to combine patience with impatience to achieve their goals. Often willing to go against the grain to get what they wanted they were at the same time realists, not ideologues. They were politically, or at least organizationally sophisticated. Charles Zhang is a case in point. To many Chinese, Charles Zhang has become a kind of "Poster Boy", or role model for young Chinese who wish to go overseas, return home and accomplish big things in China's tumultuous e-world. By 1993-94 Zhang was finishing his dissertation in materials sciences in Massachusetts Institute of Technology's Physics Department, and in 1994 he won a post-doctoral fellowship. He pushed hard in Cambridge and at home, but always with (almost) accepting the limits. Since the early 1990s, his teachers had pushed computer use for physics experiments, and he gradually developed an interest and liking for computer use.

Edward Zeng (Qiang)'s good fortune was to be born into a professional family; his father is a doctor and his mother an architect. He grew up in Beijing, getting a bachelor's degree in applied mathematics from the prestigious Tsinghua University in 1985. Two years later he earned his business administration degree, also from Tsinghua. Like many young people, Zeng joined a government ministry, in this case the strategically important State Planning Commission, where he gained personal contacts that he used to draw on in the future. He served as a policy advisor, and one of his responsibilities was to help establish a national macro-economic database. "That's when I first really saw the real possibilities for using information", he reported [personal communication 1999].

His next move was to Canada to study at the University of Toronto, his first overseas stint (he had also visited Japan, where he was when the Tiananmen Square crackdown occurred). After gaining a master's degree in finance in 1990, and then working briefly for the Canadian government as a statistician, he felt he could act on his desire to create his own company. Like his countryman and fellow cyber-star Charles Zang, he too linked up with interests in North America anxious to create business with China. "In 1991, he began to establish a computer and international trading company. He helped create the Chinese-English Wanwei Network and two direct-to-home satellite firms that beamed Chinese-language television programming to North America" [ChinaNet p.4]. Soon thereafter, in 1993, he founded SparkIce Asian Company. The company includes some Canadian interests, though he is not clear on how much. Zeng says the purpose of the company was to raise financing for takeovers on North American stock exchanges. When he returned to China in 1995, the SparkIce name came with him,

and he set up SparkIce Information System Engineering. He claimed to me that part of the reason for his return home in this field was of course to make money, but also to be one of the people who helped introduce China to the new information and communications services he had seen in North America.

The Social Dimensions

Reflecting perhaps their own ambitions, and the scope and depth of the substantive challenges they faced, these individuals forged a number of sophisticated and successful alliances across institutional and even sectoral boundaries. In other words, they ‘networked’. This Chinese pattern fits very similar findings from Brazil, India, the U.S. and other countries, where the early Information Champions managed to work well across boundaries, and to seek allies in other institutions to push forward the common elements of their liberal diffusionist agenda. In Brazil in the mid to late 1990s, a small group of innovators emerged who with a tip of their hat to the PRC actually called themselves the “gang of four” (Wilson, 2003). They emerged at the center of a social network that designed an array of policy innovations that allowed the Internet to flourish in Brazil, working across university, think tank, private and government institutions for two decades. In China, individuals in the Chinese Academy of Science and other bodies performed a similar ‘social entrepreneur’ function linking ministries like education, universities like Beijing University and Tsinghua University, special high-level bodies like the State Council on Informatization, and international groups like the US National Science Foundation. These unique networks linked elites across various institutions, and vertically within them. The networks reflect historical and Confucian traditions, and

provide the specific institutional settings within which Chinese elites negotiate with one another to promote or block restructuring. The more fluid networks intersect with the more long-standing institutions in a variety of formalized and informal ways.

Kenneth Lieberthal refers to the way that the Chinese leadership institutionalizes its power through such social networks. "The actual configurations of political power are best understood by leaving behind the organization charts and instead thinking in the terms Chinese officials use when they talk among themselves about their system. In their vocabulary, the key concepts concerning the organization of power are the *kous* (department in charge) and the *xitongs* (systems). These organizational arrangements and tensions encompass both the party and government sides of the system" (Lieberthal 1995, 192). Other authors refer to the Chinese concept of "guanxi", or connections. Writing about the state and networks in China, Wang (2000) points out that the interplay between formal institutions and informal networks is a critical determinant of state policy and economic outcomes. In his interviews in China, he found that while "many of the interviewees complain about the gross inadequacies of China's legal system in protecting their property and contractual rights, they find that *guanxi* or informal personal relationship based on trust and reciprocity, provides a viable alternative. He continues in a reference to business investment and start-ups, "Since Chinese laws and policies tend to be ambiguous and even contradictory, and since important regulations and information may not be available to the public, to rely on documents and announcements alone is far from sufficient. Well-connected individuals serve as an important source of dependable information" (Wang, 2000, 19).²

² Charles Zhang seems to disagree. "Guanxi may be required if you're in the real estate business, but remember this is a brand new industry with no history, so no one official in Beijing really cared about it and you didn't need connections."

This quotation exactly captures the dynamics that we found inside China's information and communications industries. The observation also underlines the critical role that information, and privileged access to information, plays for individuals in the Chinese political economy. Under these circumstances, where information is a privileged resource extracted from formal and informal sources, strategic restructuring is a tricky business. In China, as in other countries from Ghana to Brazil, it is essential to understand something of the social networks through which individuals exercise power in order to understand fully the technical networks power creates.

If anyone personifies the hustle and bustle, the flash and dash face of the social dimension of Chinese Internet entrepreneurial energy it is Edward Zeng. It was evident that Zeng carried good political ties, and his allies were sufficiently wired to help protect him from the political-fall out for sharply criticizing the MII minister. But as one sees all over the world, however, political ties and political skills aren't enough to keep up the pace. Vision and knowledge are also required, along with the kinds of strong social networks.

When we interviewed him and some of his staff in Beijing in May of 1999, his company SparkIce had just gone through another round of self-transformation, trying to stay up with the quickly changing times. As 2000 drew to a close, SparkIce, which began with China's first network of cyber-cafes in 1995, described itself as a "China-based interactive import/export marketplace and market-maker for products manufactured in China" (www.chinaonline.com). Zeng's ambition at the end of 2000 was to provide the main, mega-portal for businesses seeking to buy Chinese-produced goods and services.

In other words, this one company traces the transition from mainly serving individual Chinese customers in retail outlets - cybercafes, to the current trend of providing services to businesses. In the process Zeng has had to construct a very complicated series of alliances with new and existing social networks within ministries, SOEs, and of course with transnational corporations.

New Zeng initiatives abounded. In May 2000 the Ministry of Information Industries selected the company to be a state e-commerce pilot enterprise. He also reportedly had a deal with Germany's Metro to sell Asian-made products. The core of the latest vision seemed to be to create an international-quality trading platform for Chinese companies who want to sell abroad, and foreign companies who want to buy Chinese.

To the foreign untrained eye, SparkIce seemed to be a regular private company. The problem is, what is a 'regular private company' under current conditions in China? After persistent questioning, Edward Zeng admits that the boundary line between a private company and a state firm is quite porous. Edward admits, and independent observers insist, that no company like SparkIce could survive in China without substantial and active government protection and some direct state investment. Zeng seems to have been able to negotiate all of the above.

Zeng has parlayed his early knowledge of Internet matters into much appreciated advice to middle and high levels of the national political elite and those charged with setting national ICT policies. This apparently strengthened his networked "human capital" with the people who make the Internet rules. According to ChinaNet, "Zeng has connections with the State Development Planning Commission and the National Bureau of Statistics and even enjoys the support of Premier Zhu Rongji and President Jiang

Zemin. He claims to spend one third of his time courting official favor by serving as a policy advisor, teaching at state-run business schools, publishing articles in state media and cementing deals with state-owned enterprises" (in interviews with Zeng, it is apparent that his teaching activities, especially at a business school in Beijing, expose him to the up-and-coming 'netpreneurs' and e-managers who will be his future customers, a standard outcome in U.S. business schools as well). Having described the personal and social dimensions of the Chinese champions, we turn to the temporal dimension, that is the shifts in substance and leadership strategies that occurred over time.

The Temporal Dimension

While it does not appear so much in this paper, a critical finding of the broader research on which this essay is based is that Internet diffusion occurs over three or four distinctive phases. In each phase, the mix of relevant players change somewhat, and their relationships to one another also change. In the first "pre-commercial phase", virtually all Internet design, creation and use was in the hands of researchers in universities or semi-independent scientific bodies. These early Information Champions (really 'geeks' at this stage) did the original missionary work to convert the 'unenlightened' in their own and other sectors about the tremendous possibilities of the net for the country. They included researchers like Prof. Qian Tianbai, Qian Hualin, and Dr. Hu Qiheng (Vice President of CAS). They were driven mainly by selfless motives – largely the desire to see their profession and nation advance in the modern world. The second phase occurs when entrepreneurs created ISPs that were open to users outside the

narrow boundaries of the research community, including Jasmine Zhang, Zhidong Wang (sina), and Ni Guangnan (Legend). Many of this mini-‘generation’ had studied abroad. They too were motivated by a kind of liberal ideology of openness, but combined with the requirements of institutional loyalty. The third phase sees a greater influx of would-be entrepreneurs returning from abroad, leaving their ministries or labs, motivated partly by liberal diffusionism, partly by the urge to make money. Here are the more well-known “stars” of the industry like nationalist Charles Zhang and Edward Zeng. At the same time, by the third phase, the relationships among players become more dense and complex as leaders or champions in one sector reach out to their counterparts in other sectors, seeking more knowledge, political contacts, rule changes, technical knowledge, commercial relationships and so forth. The current fourth period of continuing consolidation and competition within and across sectors is harder to characterize, but it too is marked by the continuing importance of Information Champions whose ranks are now joined by new types of people, including young ambitious graduates of local schools, well-connected children of the current Chinese elite, former government employees and others. At the same time the top party officials and central government leaders try to balance the opposing desires to advance economic efficiency and party control through new ICTs, wanting to provide more modern services to a growing consumer group, while at the same time thwarting political liberalization that would undercut the position of the CPP and the current elite. Gao Hongbing is a good example of a talented new ICT entrepreneur. He once worked for the Informatization Promotion Department at MII. Excellent at writing speeches, he gained favor from Vice Minister of MII, Lu Xingkui. Later he “jumped to the sea” and set up his own IDC company,

ChinaLink. Under the authorization of Mayor Wang Daohan, a teacher of President Jiang Zemin, he and his colleague Johnathan Shen came to the United States in 1998 to write a report on the strategies of information in the US. This is today a representative of what seems to be a growing phenomenon of the “up and over” who leap from the public to the private sector.

Another interesting story is the growth of the first ISP leader, Jasmine Zhang provides good insight into this temporal dimension. Zhang is well-known in ICT circles as the first ever ISP entrepreneur. Earlier in her life, she was made the first Chairwoman of Student Council at the Chinese University of Science and Technology, was active in social activities. She then became a journalist at China Science Daily. Later she spent three years at the High Technology Bureau of the Chinese Academy of Sciences (CAS). At the end of 1991, she “jumped into the sea.” At that time, her salary was only 122 rmb (about 45 us dollars).

At the end of 1994, I was looking for which enterprise to become a big one. I went to the US and found email. It was a new way of telecommunications. In 1995, I got 15 million rmb (3 million usd) and registered Beijing Info Highway Inc. At that time we were so naïve. We did not realize this industry needed a grand ecosystem. At that time, there were only 10,000 Internet users. Now is almost 30 million. We set up a email commercial center to sell email and computers at the time sell modem. It is a model called 1+NET. Later in 1996, many people see this promising. Therefore, we restructured capital structure. Zhong Xingfa Group had 66%. In 1996 we got 50 million rmb. We had our slogan “how far is the Chinese to the information highway”. When we study the whole industry, whether the Internet will change the life quality and whether technological innovation will bring systemic innovation. What did we do? We set up our own physical network. Then rent DDN and interconnecting lines from China Telecom. Then we bought routers from Cisco PC server from HP, and all the system software. Later our Chief Engineer went to see Bill Gates and set up a complete TCP/IP internet system. Later we set up a complete content system ICP. Later we had dialup system. Then there was no sina.com so people could read and start to buy books online. “We were peasants”. It was like Edison’s invention of the light bulb. The most cruel issue at that time was the monthly rent for an interconnecting line from China Telecom was 6000 rmb (800 us dollars).

Later when I left it was only 168 rmb (20 usd). It was forever losing money. I stormed into the office of general manager of China Telecom. I said you were the criminals of China information industry. Leng Rongquan laughed, saying their finance was controlled by the Ministry of Finance. Later I realized the success of Western companies started from capital market. We need to reshuffle our capital market after the emergence of sina and sohu and other dotcoms.

In May of 1995 Ms. Zhang created the Beijing Information Highway Technology Company (BIHTC). It was the first non-state, private ISP in China. By 2001 it had about 100 employees, and a capitalization of US two million. She had organized BBS prior to BIHTC, but these were not connected to the Internet for the most part. Her purpose was to provide a range of services to her customers, including basic ISP services such as email, FTP, telnet and web access. She also provided on-line services through her "Information Highway Space" which included news, talk forums, financial quotations, education and entertainment. In other words, a nearly full-service ISP and ICP.

Early on, however, Zhang was realistic enough to realize that her tiny subscriber base of 3,000 was nowhere near what she needed to earn a profit (she estimated that she needed ten times that). "China's user base", says Zhang, is simply too small right now to support a profit-making enterprise [ibid]. In the meantime, she like many other early Internet entrepreneurs tried to stay afloat by selling other services and goods.

In addition to her hardware sales, she sold her flagship product, a Chinese language software package that gave her customers' access to a variety of on-line information, including news and even the latest train schedules. It was provided free to customers who registered for her services at cost of about (US\$38.50 annually—low by U.S. standard, but not cheap in China). The charges were RMB.05/minute, or less than US\$1 per minute. The good news was that since her company was created before the

State Council issued regulations requiring all ISPs to link through MPT's ChinaNet, she was able to send her Internet traffic through CASNET's international gateway.

Despite her energy and early entry, BIHTC was unable to hold on through the twists and turns of the changing Chinese laws. In 1996, as we described above, the most draconian rules were set forth by the government, including the requirement that consumers had to use only government channels for news. Zhang closed her Beijing operations, moving to Hong Kong and a new company.

Edward Tian seems to be a perfect example of all three dimensions.

Edward Tian (Tian Suning)

Everyone in China seems to agree that Edward Tian was one of the original Information Revolutionaries, and his career crosses most the temporal phases. In addition to being a man of impeccable practical understanding, he also carries a compelling vision of China's future as a knowledge society. He has had an extraordinary national impact on the important middle period of Internet market expansion in China, and continues to have major influence on its further growth and consolidation. His name Suning means "in remembrance of Leningrad" because his parents got to know each other at the Russian city.

An example of his breadth and vision emerged early in our conversation. From his new offices atop a modern Beijing office building (where he is CEO of China's third telecommunications company CNC), he told me he had bought a little place in the country, about 40 miles from downtown Beijing. "You know," he began, "many young people here in this city are as good as they are in Silicon Valley. They are well educated

and sophisticated. But only 40 miles from here people are living like they did two centuries ago. Or if not living like that, their mindset is like it has been for centuries." Concerned about the possible digital divide within China, he asks, "So what do the young kids in the village look forward to? Will they have the same ICT opportunities as the kids in the city? They too need to have hopes and dreams. The city kids see great hope in the future. We need to make sure all China's children do" (interview).

Family Background/Youth in the Cultural Revolution

Like several of the other information champions, Edward Tian came from solid middle class stock. "My parents were educated, in fact they were educated in forestry in the Soviet Union in the 1960s. But then when relations deteriorated with the USSR, people educated there were mistrusted, and we had to move. We moved way out to Lanzhou, which is very isolated. My parents were worried about my education, and I was educated largely by my grandmother, a school principal. Then when the Cultural Revolution hit, things got very bad. We were forced to the countryside for "re-education". I never will forget that when I was five, the Red Guards came to my grandmother's house. We always had a lot of books in the house, but she had hid them under the bed. The Red Guards searched the house and found them, and then dragged them all to the front yard, and put them in a big pile. Then they set them on fire. I never will forget that sight of burning books. The memory of that is still very much with me today. Now, with broadband (networks), nobody will ever be able to burn up the network. These changes will make that impossible, I hope..."

"I left China in 1987. It was then a pretty depressing place, and like most Chinese students going abroad, when I left I had no intention of returning. After Tiannamen

Square I thought I should do something more practical than pure science. I started studying environmental science, things like wildlife management." He already had a Masters degree in biology from the Chinese Academy of Sciences Graduate School in Beijing (www.chinaonline.com).

"Then a little later I started getting interested in the Internet." In an interview with Wired he claimed that he was quite influenced by a speech that US Vice President Al Gore gave in 1993, which alerted him to the potentials of the Internet.

"I finally graduated from Texas Tech with a Ph.D. in Environment Management. While in school, I started to meet some people who eventually became my partners. There was Jim Ding, from University of Texas in Arlington. How did I meet him? Actually, we met through the Internet. For broke and lonely Chinese students in far away Texas, the Net was a good way to meet others like you. The Internet was cheap, and it was a great network to meet people. Then by the time I finished, I guess I was getting a little older, and I was starting to feel more responsible toward China. I didn't feel that way originally, but I did then. I thought maybe I should go back and contribute. And frankly I missed the country. James Ding and I talked on the Internet and about the Internet. We decided to return and do something together. So we set out to look for people we could convince to come work with us in China."

The result was AsiaInfo, a company they founded in 1993 as a systems integration and Internet software company. Tian was the first president, and a board member. By 1995 they were ready to go back to China. Even though he had a degree in environmental studies, he was hooked on the Net. Looking about for markets Asiainfo targeted the big giants - the telecommunications. And as they say, the rest is history.

In brief, Edward Tian constructed the backbone for the modern networks of China, both for national-level companies and provincial governments. He built them well, and he built them quickly. In all, Tian and his team built more than 100 major network projects in the country. He recognized the importance of attracting good talent, other information champions with good skills and education, and he recruited students who had studied abroad to come work for his company. His national customers included ChinaNet, Shanghai Online and China Financial Data Network. In the process, Tian and his colleagues also created a social network that paralleled (and perhaps surpassed) their technical network. All this good work won AsiaInfo a lot of contracts and a number of awards from groups like Fidelity Investment Co. and from the World Economic Forum, who selected Tian as a "world class entrepreneur".

Not one to rest on his laurels, Tian said "yes" when some very serious institutions in the country banded together and decided to create a large new telecommunications company, and asked him to head it. He and his partners at AsiaInfo decided to sell a majority of the AsiaInfo share to non-Chinese investors. The shareholders include the Chinese Academy of Sciences, the State Administration for Radio, Film and TV, the Ministry of Railways and the Shanghai Municipal Government. The new company will be a broadband IP network, and has already built a 6,000 mile IP-based, 20-gigabyte fiber optic backbone that covers 15 Chinese cities, one of the world's fastest.

Several elements in Tian's story are especially relevant to this chapter's themes. The first is that Tian, a very successful private sector entrepreneur CEO, was invited by the top leadership of several state entities to head up a new public enterprise, the first time a non-state CEO has been recruited to lead one. Second, he was given full authority

to hire the best people possible, and he has already recruited colleagues from Motorola, Microsoft and Marconi with competitive salaries and even stock options [Ch. p.1]. Furthermore, the corporate governance of the CNC is more like a Silicon Valley company than a traditional SOE. It is poised to become a new kind of Chinese company.

Edward Tian is aware of the challenges, but claims that this will be a rare opportunity to make a big difference for China's information and communication industries. Small wonder he has been called the "Chief Internet Architect" in China. He has been at the center of the SRS process in China, shifting the balances between private and public and competition and monopoly. David Sheff describes a successful meeting between Tian and the Premier (268-9).

Premier Zhu arrives with a large entourage that includes a couple of familiar faces. Edward demonstrates a live videoconference between him and a CNC staffer in Hangzhou, shows a sample of real-time IP-based television piped over the CNC network, and embarks on an explanation of the limitless potential of bandwidth, his favorite subject. Comparing his broadband dream to the dream brought by the people who introduced electricity into China, Edward says, "Premier, the difference is that China was behind the rest of the world when electricity was brought into the country, and we were slow to adapt and accept the technology. In fact, many of our people never took full advantage of it and the entire country suffered. But sir, we now have a chance to advance the dream of your generation. This time we are as advanced as any nation in the world. China no longer needs to follow, but can lead. This technology can transform the lives of our people. It can help to educate our people. It can bring opportunities for their lives. Please help us. Together we can achieve the realization of our broadband dream."

Zhu is quiet, intently listening, signaling that Edward should continue, but a security guard approaches Edward and hands him a slip of paper with scribbled writing. It says that the meeting must end. His time is up. Edward ignores it. Everything he has said thus far was meant to prepare Zhu for his pitch. "Premier Zhu," he says, "You can help this dream become realized in China by clearing the way for three things to happen." First, he asks Zhu to reform the regulatory environment, Second, he asks the premier to approve a license for CNC to be able to offer local access for broadband so that neither provincial nor local governments nor China Telecom can block the progress. Finally, he

requests permission to send multimedia information over the CNC network—that is, permission for CNC to enter the content business, which is currently restricted.

Zhu stands, too. He seems moved. Approaching Edward, Zhu says, “I am very impressed by your work here. You have very good technology and assembled an impressive management team. I know that your work is very important for China, and I will do what I can to help you. I understand that you need changes in the regulatory environment. We want to make these changes so that you can continue your work. We are getting rid of the government’s strangling influence on commercial ventures, but we are not doing it fast enough.” He looks toward Wu and Hou and back to Edward. “I think we can do what you need.”

CONCLUSION

This essay has argued that in order to explain adequately the extent of Internet diffusion in China, and its likely impacts on economic efficiency, political democratization and other key societal outcomes scholars must pay more attention to micro-motives and micro-behaviors of the small groups of individuals most centrally involved in designing and building out the new information and communication technologies like the Internet. Highly aggregated analyses of macro or sector-wide trends are insufficient to identify these trends, absent a complementary framework more attentive to the social, political, and ideological characteristics of these key individuals. These are the real-world individuals, whom we call Information Champions. whose strategic choices deliberately shape ICTs relationships with economic and political factors, mainly by bargaining over regulations, norms, expectations and rules. (Wilson refers to this process as ‘strategic restructuring’ in *The Information Revolution in Developing Countries*.)

Individual Characteristics of the Information Champions.

We identified several key characteristics of the Champions. They include

similar *personal backgrounds* (professional parents, overseas education); substantial, *valuable knowledge* in a strategically important emerging field; *attitudes* marked by great personal and professional ambition, leavened by high regard for national status and welfare.) Many believed in the transformative potentials of the new ICTs, sustained by a liberal, bottom-up vision of ICT benefits, but a vision that could become reality only if proper institutional incentives could be put in place in China. Finally, their vision and social values seemed matched with personal pragmatism and substantial organizational and inter-personal skills.

Social Characteristics of the Information Champions.

‘Social characteristics’ refers to inter-personal relations among these individuals and their small groups. Between the late 1980s and the present these individuals knit together ever denser networks of personal relationships that reached deep into their own organization or sector, but as importantly reached across to like-minded allies in other institutions and sectors. Ultimately, these were bargaining relationships on all sides. The dominant state elites recognized these ‘geeks’ could provide valuable services to the state, and had to be approached with positive incentives as well as, when warranted, strict state controls.

The Champions were able to mobilize needed financial, organizational and even political resources. The most successful – people like Edward Tien, Edward Zhang, were apparently able to create mutually beneficial ties to important patrons within government that helped sustain their commercial activities. Researchers were able to get their projects and centers funded from the state budget. (Civil society groups, with barely

any autonomy, were less successful). At the same time these ambitious, political savvy champions also found themselves with powerful enemies in powerful state institutions like the Ministry of Information Industries or the state security agencies. It appears too that as Chinese society opened more to the forces of globalization, international media and the possibilities of personal wealth accumulation, then their social status and popular prestige grew apace. With all this, however, the social status of these champions remained somewhat ambiguous and exposed under the ultimate authority of the Chinese Communist Party.

Performance Characteristics of the Information Champions

In light of these features, the Party, the government and the state enterprise managers who wanted to preserve the status quo or closely control any ICT changes (Information Conservatives) had many reasons both to oppose the new liberal ideology of the Information Champions, and at the same time to coopt and court them. The Champions knew how to use ICTs to enhance efficiency, to increase international competition and attract foreign investment. They seemed to be virtual bridges to international actors and to the West, able to bring China even more modern know-how and capital. At the same time these same individual and social skills were subversive. The new ICTs and the social forms that grew around their practice (Latham, “Technologies in Formation”) created new discursive channels for public engagement through the creation of new fora for public debate that help bolster the emergence of a Chinese civil society. The new tools empower and legitimate the claims of some

domestic opposition groups against the many political and economic monopolies of the state. Thus the Internet becomes a special platform of free expression of liberal norms.

And year after year the local Chinese language magazines as well as international media like Time, Newsweek, the Financial Times and CNN touted these young people as the harbingers of modernity. These were the new men (and women) that other young people wanted more and more to emulate, even as they emulate Communist Party cadres less and less. For the state to protect and promote these Champions – to hire them, to hold them up as examples, , and even to compete with them toe-to-toe -- conferred ever more legitimacy on this odd and contradictory social formation.

Are The Information Champions a Distinct Stratum?

Our findings suggest that these new Information Champions are not yet a coherent social *stratum* with its own consistent, predictable space within Chinese society. They straddle separate institutions in business, civil society, government and research. They lack their own organization to articulate and protect their interests. They lack strong, independent local ideologues able to advance their cause fully. They certainly lack autonomy from the state; in their careful searches for independence they must maintain close and respectful dependencies. At the same time, there is some evidence they are becoming a self-conscious, self-aware professional grouping, embedded somewhere within the technocracy and the budding commercial class. There is some evidence of elite blending or integration, with accelerating individual ‘up-and-over’ migration from the public and parastatal sector, into the ranks of entrepreneurs. This trend will only increase.

This study of ICT leadership in China reveals an interesting pattern of *negotiation* and *socialization*. This process allows ICT leaders to build power and some measures of autonomy within a constrained institutional context while relying upon and coexisting with the state in a symbiotic fashion. This allows for policy input and the pursuit of their own interests and goals while minimizing state penetration. At the same time these Champions are able to educate, socialize, and change the attitude and behaviors of state elites. Certain once-preferred anti-Internet options of political elites are simply dropped off the agenda or dramatically devalued, now judged as too costly or normatively inappropriate. Chinese leaders' growing dependence upon IT revolutionaries to build a robust national information infrastructure has gradually elevated their status and amplified their voices. "Co-opted groups become embedded over time in the system and through this process they acquire viability and legitimacy"(Saich 2000, 139). It seems that ICT leaders have started to erode hard-line Communist ideologies by engaging liberal-minded political elites, providing solutions to unforeseen problems in the high-risk processes of economic and political reform, and helping state elites invigorate a national information infrastructure that is crucial to China's ambitious development. This process of negotiation and socialization occurs in the content of an emerging social formation that links four sectors—public, private, research, and much smaller civil society. Thus four sided social formation, or "Quad" is a universal feature the emerging knowledge societies around the world.

New Directions.

Given these multiple trends and cross-cutting dynamics it is virtually impossible to predict precisely the directions of ICT-related social change in China. Whether over the next decade “ICTs” contribute more to democracy or autocracy, to local business or multinationals, to centralization or decentralization, will hinge largely on how these individual Information Champions ally themselves with other social actors. If they are effectively co-opted and controlled en masse by the state leadership and technocracy, we will see one outcome; if they merge directly into the new Chinese bourgeoisie, we can expect other outcomes. Or some Champions may peel off and throw their weight with the disenfranchised, with the marginals of the Chinese society, empowering civil society groups with these new networked resources. Most likely is some combination of all these opportunities.

While we cannot predict the ICT future, we can conclude that the ICT trends themselves will reflect the continuing – and probably increased – bargaining among variously competing, cooperating and conflicting parties to influence the terms of access, control and ownership of these valuable, scarce resources. The outcomes of ICT resource bargaining will be shaped by the interactions of these micro and ‘meso’ (group) level characteristics, as they are shaped in turn by the underlying macro structures of Chinese society. For social scientists this means devoting attention to processes, modes and ‘architectures’ of micro and meso-level inter-group bargaining. It means conceptualizing and theorizing about ICT-enabled micro-behaviors’ cumulative impacts on prevailing structures, thereby bringing greater focus on the inescapable tensions between structure and agency. In this way, the causal, iterative paths between ICTs and

social outcomes will be made clearer as China moves toward its unique information future.

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