ABSTRACT

Title of dissertation: CHINA'S IT LEADERSHIP

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With the rapid expansion of China's information and communications technology (ICT) sector, there has emerged a strategic group of IT leaders. These IT leaders are characterized by their "amphibiousness". On the one hand, they have become bridges that introduce Western concepts of competition and decentralization to China. On the other, they do not want to challenge the state because they feel comfortable with their personal ties to promote their business interests. They belong to the "non-critical realm" of social elites and have not coalesced into a coherent and organized social force. Even though they may not represent an independently innovative force that would push for political change in China, they have become catalysts and have created part of the necessary conditions for political changes, for example enhancing institutional performance of the state and creating a forum for public debate and political participation of the grassroots. Therefore, they have a subtle political impact on state responsiveness

and civic participation. By carefully contrasting the autonomous, parasitic, symbiotic, negotiating, and amphibious actor models, this study of IT leadership in China emphasizes the creative aspect of politics—their visions, craftsmanship, and courage for ICT diffusion in China. In contrast with the top-down or bottom-up paths of Communist transitions in East Central Europe, the Chinese path seems to be grounded in the middle. The conclusion of this dissertation is that in a time of uncertainty, a strategic group of IT leaders starts to inspire and lead this nation in new directions like a spark when China is in desperate need of a systematic and convincing rationale and vision for its progress in an era of great transformation.

CHINA'S IT LEADERSHIP

by

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2005

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List of Abbreviations

MEI	Ministry of Electronic Industries
MEP	Ministry of Electric Power
MII	Ministry of Information Industries
MOR	Ministry of Railways
MPT	Ministry of Posts and Telecommunications
MSS	Ministry of State Security
NPC	National People's Congress
SARFT	State Administration of Radio, Film, and Television

Selected Chinese names of the IT leaders who use English first names

Edward Tian	Tian Suning (China Netcom)	田溯宁
Michael Wan	Wan Pingguo (Net China)	万平国
John Wang	Wang Juntao (6688.com)	王峻涛
Charles Zhang	Zhang Chaoyang (Sohu.com)	张朝阳
Jasmine Zhang	Zhang Shuxin (Genesis Capital)	张树欣
Edward Zeng	Zeng Qiang (Sparkice)	曾强

Acknowledgments

I started my dissertation in the fall of 2002 and it produced three years worth of sweat and toil on the part of my advisors and myself. I am grateful to Prof. Ernest J. Wilson, III for his eclectic mind, scholarship, and intellectual enthusiasm, or more accurately, his exuberance and genuine interest in inspiring me to tackle the issues of leadership in the digital age, especially in developing countries. I also thank Prof. Margaret Pearson for her unflagging commitment to making me a well-disciplined scholar and to be a critical inquirer in the field of comparative study of Chinese politics. Prof. Dennis Pirages has been a warm-hearted supporter and a generous and critical reader throughout the whole of the dissertation. Prof. Vladimir Tismaneanu's work on civil society in Eastern-Central Europe has been the inspiration for this work and helped me blend the empirical with theoretical frameworks. Prof. James Gao has also been a wonderful reader of my work and his comments are insightful. They all had a great deal of patience for my lengthy work and have been solid supporters while I pursue a career in comparative politics and international relations.

During my field investigations from 2002 to 2005, my Chinese friends and colleagues gave me unwavering assistance. Mao Wei and Yan Baoping from the Chinese Academy of Sciences offered many generous supports. Wang Xiangdong and Zhou Hong from the Chinese Academy of Social Sciences also provided me with lots of help. My interviewees, Gao Hongbing, Song Ling, Shen Jian, Zhang Shuxin, Wan Pingguo, Wang Juntao, Duan Yongchao, Wang Junxiu, and Liu Jun helped me intellectually. They also led by example and through the concrete ways that they made their career work. My friend Guo Beiping, Ph. D. in public affairs from George Washington University, and my classmate Fengshi Wu also shared stimulating ideas with me. My colleague Richard Longoria has been a steady friend in editing my work. Support both by the Center for International Development and Conflict Management (CIDCM) and Harrison Program at the Department of Government and Politics of University of Maryland were essential for my early work on IT leadership. Prof. Valerie Hudson at Brigham Young University provided me with resourceful insights to reconceptualize the dissertation.

My family also encouraged me to continue this program by imploring me to finish sooner rather than later. My father, Duan Zuoguo, gave me generous financial support in the last two years and introduced me to his colleagues at China Railcom who address key issues on IT divestiture. I wish that my family will be proud of this project and of their future political scientist.

Chapter 1. Introduction:

A Theoretical Framework to Study China's IT Leadership

The rapid development of China's information and communications technology (ICT) sector has been an amazing phenomenon in a Communist country.[1] The fusion of computing and telecommunications, especially the Internet, has broken the bounds of cost, time and distance, launching an era of global information networking. By the end of October 2004, China had over 310 million fixed line telephones and over 325 million mobile phone users.[2] By January 17, 2005, there were 94 million Internet users including 42.8 million broadband users.[3] The ICT sector has become one of the most dynamic locomotives for development in China. IT brings about shrinking space, shrinking time and disappearing borders and therefore poses potential political challenges to China. Moreover, the transition of the ICT sector from one with strict control to one that is widely diffused and decentralized reveals a new pattern for resolving the tension in contemporary Chinese politics—*fang* (release) and *shou* (control). This intrigued us to locate those actors who push for changes in ICT sector and uncover the "black-box" of the inner workings of decisions behind the technical revolution in China.

There are several groups of IT elites in China who push for changes in the ICT sector. They pass through Beijing's office buildings, absorb new values, and develop

[1] The information and communication technology (ICT) is defined as a "scarce and desirable resource that groups and individuals contend for in order to consume, control, or own those resources for their own purposes" (Wilson 2004a, 40).
[2] Major Business Report of Ministry of Information Industries, URL: http://www.mii.gov.cn/mii/hyzw /tongji/yb/tongjiyuebao200410.htm

critical strategies for the ICT diffusion in China. Many of these IT gurus are also charismatic social leaders who enjoy a good reputation among the people. The IT elites in east Beijing's Central Business District are usually extraverted, outspoken, and fashionable "poster children of globalization". Edward Zeng educated senior governmental officials on cyber war and Internet café. Charles Zhang entertained the public with his sohu.com (literally meaning"searching for fox"). Jasmine Zhang attracted stares with her Genesis Capital to use the Internet as leverage to upgrade traditional industries. The east Beijing leaders have gained notoriety and become popular icons of 21st century information technology.

In contrast, the IT leaders in west Beijing's high-tech zone, known as Zhongguancun, seem to be more introverted. They are more interested in transplanting foreign technology into Chinese practices. Liu Chuanzhi, CEO of Legend, made his first fortune by inventing the Chinese version of computer usage—the card for Chinese characters. With his office on the financial street, Edward Tian devised concrete plans to lead a "green revolution" via broadband to enlighten people through his company, China Netcom.[4] Mao Wei and other technicians at the Chinese Academy of Sciences (CAS) organized to manage networks via the China Information Network Information Center (CNNIC) for ".cn" domain name registration. Most of these west Beijing leaders have remained behind the scenes but enjoy successful entrepreneurial careers.

These intriguing characters remind us that the IT elites are not homogeneous. They seem to differ in style, goals, and perhaps in their impacts too. Who are the actors

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[3] *China Internet Network Information Center,* URL: http://www.cnnic.cn/html/Dir/2005/01/18/2744.htm
[4] To Tian, the information revolution is clean and energy-saving compared with the first industrial revolution characterized by steam engines.

that drive changes in the ICT sector? What are the motives that initiated these actors' interests to promote changes? How do they behave to achieve their goals? Do they act alone or through coalitions with other actors? Are they more divided, or unified? Do some of them represent an independently innovative force that would press for political changes in China? Or, are they merely businessmen who seek patron-clientelist ties with the state merely for the sake of advancing their self-interested money making concerns? Or, are they some combination of the two? Second, do they have an impact on state policies, government rules and institutions, and popular civic engagement? How do we weigh evidence of changes at both state and society levels as a result of their visions and activities?

Starting from an interest to locate the sources and processes of information revolution in China, the dissertation attempts to burrow the process in which IT elites can devise, within limits, strategies to hasten trends in ICT diffusion, thus having a potential impact on political panorama in China. It strips away all inessential attributes and lays bare a central process that underlies and serves to explain observed political events in the ICT sector via the study of elites in ICT sector. In sum, this dissertation attempts to test whether there are linkages between emerging IT elites and political changes in China.

Defining China's IT Leadership

There are many studies on elites and leadership. By definition, elites are those who manipulate power, and that power is the essence of politics. In contrast, "leadership is an aspect of power, but it is also a separate and vital process in itself" (Burns 1978,

18). The universe of leadership is composed of elites defined in both positional and behavioral terms. As positionally defined, leadership is identified with a superior organizational position or command (Edinger 1975, 255-6). In the same vein, Putnam suggests that we can speak of "elites" in referring to people at or near the top of the pyramid of power. They are the people who have the ability to influence other individuals and collective decision making, including full time politicians--the *proximate decision makers* as incumbents of key official posts (Putnam 1976, 11). They also comprise *influentials* with substantial indirect or implicit influence over public policies, including legislators, party officials, industrialists, and senior consultants.

Second, when behaviorally defined, leadership is related to the processes that can possibly influence, shape, or alter the actions of others. In contrast to a hierarchical formal position, it is associated primarily with the processes of interpersonal relations (Edinger 1975, 256). This leadership can be manifested in the influences among a group of *strategic elites* such as industrialists or mangers of public and private enterprises, leaders of mass organizations such as labor union, interest groups and civic associations (Putnam 1976, 14).[5]

Adopting a positional definition, the current elite in China include:

- Executive elite—premiers, ministers, directors at governmental institutions;
- Rule making elites—Party leaders, politburo, law makers at the national congress,

[5] Thus in a general sense, leadership is both a property and a process. It is a property that the leadership is perceived as a set of qualities or characteristics who successfully employ the influences. Leadership is not only the qualities of one posses, but what he does to influence people. It is a process in that a leader influences others in order to direct and coordinate an organized group towards accomplishing certain collective goals.

- Leaders in state-owned companies—president and CEOs .
- Leaders of peak associations, trade unions, and non governmental organizations

To adopt a behavioral definition, there are two ways to study elite politics in China. One approach is to understand the elite through their traits and social backgrounds. Michael Oksenberg and Steven Goldstein accordingly categorized Chinese elites into four groups:

- militant fundamentalist who believed in total isolation from the rest of the world;
- radical conservatives who asserts China's independence from outside influences;
- eclectic modernizers who believe in self-reliance but allow contacts with the outside world;
- Westernized Chinese who advocated increasing openness to catch up with technological development of the advanced countries (Oksenberg and Goldstein 1974, 1-13).

However, a handicap for technocrats of the Fourth Generation of China's political elites is that are intellectually poorly equipped to recognize policy linkages between and across spheres of social sciences. In addition, they had superficial exposure to Western countries, thus they found it difficult to understand international affairs. Ordinary bureaucrats were weeded out their innovative initiatives because many of their behaviors or ideals could hardly be tolerated by incumbents. Therefore, they are unlikely to be the leaders for real political changes in China.

Another approach is to look at elite behavior through the institutions that make policy. Kenneth Lieberthal and Michel Oksenberg's path-breaking study of energy policy, followed quickly by other studies of policy implementation, followed this

approach. These scholars apply a factional model to study elite conflicts within a single party system or a bureaucratic model to understand the stability or adaptability of elites in formal institutions in changing environment via policy making process. But these institutional approaches to study leadership still cannot locate the sources and processes of changes.

Also included in this category are economic and policy entrepreneurs who lack institutional status, but exercise influences via their ideas and networks. Thus leaders can be active and influential individuals outside of a formal position. Recent studies of elite politics in China extend to strategic actors--"business elite" which denotes a group defined primarily according to its position in the hierarchy of the economy and its members' income, education (primarily formal), and prestige (Pearson 1997, 6). In this sense, Jasmine Zhang, Michael Wan, and John Wang are this kind of entrepreneurs who exerted huge influences over the ICT diffusion in China at the private sector. Some leaders can be defined in both positional and behavioral terms such as Hu Qili, Minister of the Ministry of Electronic Industry (MEI) and the first key challenger against the monopoly of China Telecom.

The definition of China's leadership includes some liberals in the executive body of the state from a positional perspective, but most of them are influential entrepreneurs and social activists from a behavioral perspective. From a constellation of leaders in China, I have chosen about fifty IT elites to study in order to test their potential role on political changes in China. The people I interviewed fit into the overall elite structure, and share some of their same features, but have unique features as well. They are representative of this leadership group. I choose this sector to study because IT brings

about new concepts of openness, transparency, and pluralism. Thus to study the leaders behind the technological diffusion would be meaningful to discern if political changes can start from the middle, unlike the top-down or bottom-up paths in the Communist transitions in Eastern Central Europe.

In this dissertation, those who guide and hold sway or set the trend in the current IT infrastructure restructuring, applications and content in the process of ICT diffusion in China are termed IT leaders. In the information age, IT leaders possess new attitudes, new knowledge and new skills gained through their unique experiences (Wilson 2004b, 858). This is a group of people who play a motivating and foremost role in the diffusion of ICTs. They are elites because of their high educational and professional status and comprise a critical group of entrepreneurs, advocates, scientists, and liberal officials. They are also technical and social innovators.

There are two categories of IT leadership herein the dissertation—"**digital leadership**" and "**leadership in the digital age**" respectively (Wilson 2004b, 858-9). "Digital leadership" refers to leadership in the core sectors of information technology—Internet service providers, Internet content providers, Internet application providers, and other technology-based areas such as computing, communications, and content. Some of these "digital leaders" are in the private sector, e.g. IT entrepreneurs such as Jasmine Zhang of Infohighway, Michael Wan of Net China, and John Wang of 6688.com. Some are in the research sector, such as Hu Qiheng, Qian Tianbai, Yan Baoping, Qian Hualin, Mao Wei, and Hou Ziqiang of the Chinese Academy of Sciences (CAS). Some have been liberals in the public sector such as Hu Qili, former Minister of Ministry of

Electronic Industries (MEI), and Peng Peng, former president of China Railcom.[6] "Leadership in the digital age" refers to elites in public or private institutions who advocate or make good use of information technology towards transforming China into a knowledge society. Most of these "leaders in the digital age" are social scientists, journalists or NGO leaders such as Guo Liang, a philosopher on Hume from the Chinese Academy of Social Sciences (CASS); Fang Xingdong, a lecturer at Tsinghua University who write numerous books on China's digital revolution; and Zhaxi, an environmentalist who uses the Internet to help protect Tibetan antelopes.

Both groups of leaders belong to a **"strategic group**" and should not be considered a "class", "interest group", or "stratum". This distinction is made to indicate that the power of these IT elites stems not only from their self-interested motivations, as is the case with the other terms, but also from their symbolic importance to push for a connected and networked China. They possess new values, one of which being a mission to help the state become an agency of development and modernization as well as help create a free and interactive civil society in China (Heberer 2003, 1, 69, 341). However, before we go in-depth into the specific characteristics of these IT leaders, their roles in the ICT diffusion, and their possible impact on political change, it is important to look at current theoretical strands concerning the political roles of social elites (mostly entrepreneurs and business elites) as a start to study the political impact of these IT leaders.

[6] Although this dissertation is prone to study IT leaders as social elites, it is important to know that external forces need internal support to push forward any reform in the ICT sector. Thus, even though leaders in the formal governmental institutions are not the concern of this dissertation, some of them, especially the brother and sister, Hu Qili and Hu Qiheng, who made enormous contributions for the ICT diffusion still deserve our attention to gain a complete picture of the process of the information revolution in China.

The Political Role of Social Elites in Chinese Politics—a Literature Review

The reason I am interested in actors' role in affecting political changes is that it provides analytic tools to penetrate and dissect the internal dynamics of the ICT diffusion period, reflecting regime change at the political level (Bratton and van de Walle 1997, 26). The study of political agency focuses on the possibility of innovative outcomes at the hands of skillful individuals that break with habit and routine. Goran Hyden called this actor dimension "the **creative** potential of politics," especially "the ability of leaders to rise above the ordinary, to 'change the rules of the game,' and to inspire others to partake in efforts to move society forward in new and productive directions (Hyden 1992, 8-10). Political changes come from actors' bargaining and compromises. Especially, during the regime transition where no grand design is available, "individuals, groups, and government leaders constantly alter their course of action in the light of specific events and conditions in other sectors"(Chazan 1992, 123). Charismatic leadership and craftsmanship of social actors become crucial for political changes to shape the process of interactive power struggles between incumbents and innovators and determine the final rules and institutions that all parties agree on (Willner 1968; Linz and Stepan 1986). In a word, the actor's dimension calls attention to the willful strategic choices of principal political agents in shaping specific political outcomes.

Theoretical Models

There are four theoretical models of the role of social elites in effecting political change as I synthesized them from most recent theoretical tools to study Chinese politics.

These are the "**autonomous actor model", "parasitic actor model," "symbiotic actor model",** and **the "negotiating actor model**". Social elites are those who enjoy a high position professionally or economically, but are not those who occupy a high position within the political establishment. Some schools of thought are optimistic on the role social elites to effect political liberalization. Others are pessimistic on this. Each school has its strengths and weaknesses.

Table 1: Four Theoretical Models on State-Society Relationship

Model	*Argument*	*Strengths*	*Problems*
Autonomous Actor Model (Aristotle, Martin Lipset, Ronald M. Glassman)	1. independent material resources 2. mass organizations due to urbanization 3. free social space 4. better education and liberal views	1. political freedoms as *necessary* to protect their economic freedoms. 2. horizontal relationships for collective political action and representation 3. an important linkage to democracy	1. no coherent political ideology 2. unspecified path 3. weak organizations 4.state strategies to pre-empt independent attempts.
Parasitic Actor Model (Philip Schmitter, and Jean Oi, David Goodman)	corporatist links between the state and the business sector, strategies to co-opt social elites and entrepreneurs into the Party	a stable state-society relationship in lieu of institutional or formal channels, exchanges between allocation of resources and political loyalty	personal ties of reciprocity highly detrimental to organized impact of the middle class, lead to corruption and organized dependence
Symbiotic Actor Model (Peter Evans, Joel Migdal, Andrew Walder, Viviene Shue)	effective ties between state and society to empower both sides Mutual empowerment of state-society synergy	the transformative capacity of social elites to interact and intervene in a series of events so as to alter their courses	societal actors, especially so called "red capitalists" gradually *lose* their independent pursuit of social interests; reliance on the same hierarchies to generate their wealth
Negotiating Actor	"auto-organization" of social integration social actors' step into the **vacuum** of	regular exercise of the people to communicate horizontally and form cooperative bodies	1. enhance infrastructural power, fine-tune government policies instead of qualitatively

Model (Timothy Brook, Anthony Saich)	into the **vacuum** of newly emerged or ignored areas (e.g. environment, women rights, birth control) and developed strategies to evade state intrusion	cooperative bodies. direction of horizontal relationship in society; heed those previously ignored areas or fulfill functions that the party-state has failed to do so.	instead of qualitatively push for political rights. 2. not brave enough to cross the "thin red line" to vie for political power as opposition parties in the democratic countries.

Sources: author and Joel S. Migdal, Atul Kohli, and Vivienne Shue, eds., 1994.

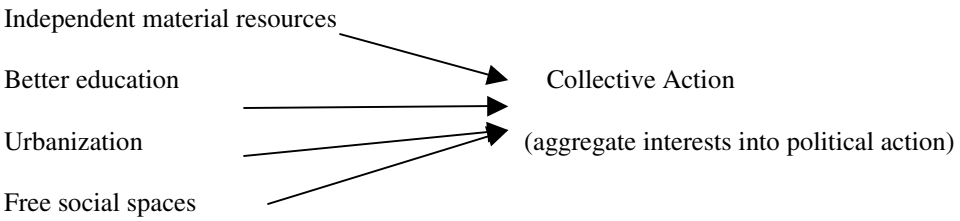
The Autonomous Actor Model

The first model "autonomous actor model", represented by Ronald M. Glassman (1991), adapts the middle class theory to study China's emerging social stratum of business elites out of reform. These new entrepreneurs are seen as the vanguard of an emerging civil society, a prerequisite for political development and possible democratization in China (White, Howell, and Shang 1996; Unger 1996). This approach has its theoretical roots in Aristotle, who noted that the rise of the commercial middle class was accompanied by a rational scientific worldview, the disruption of traditional property arrangements, and the growing desire on the part of the middle and poorer classes for political participation (Glassman 1991, 3-6). More, recently, Seymour Martin Lipset (1959) posits that "… the more well-to-do the nation, the greater chance that it will sustain democracy." He highlights the formative role of economic development in creating conditions conducive to democratic government (Bratton and van de Walle 1997, 21). Lipset uses wealth, industrialization, urbanization, and education as indicators of economic development. Economic growth contributes to moderate world-views for the emerging middle class because it fosters liberal attitudes of modernization and toleration. At the same time, wealth provides the middle class abundant independent *resources* for

political activities to protect private property and individual freedom. With unfolding of industrialization and urbanization, mass organizations are built in cities that provide the social basis of democracy.[7]

Bernard (1993) argues that the bourgeoisie was the vanguard in the development of social autonomy in Western Europe. They have increasingly gained their influence and autonomy as capitalism reduces the state's role in the production and distribution of goods and thereby enlarges the "social *space*" within which individuals and groups may pursue private interests and public activities independent of state control. He refers to this social space as a sphere of autonomy from which political forces representing constellations of interests in society have contested state power. This theory is partly true for China's IT elites as they are products of the emerging market economy with much more income and material resources as well as wider social spaces similar to the bourgeoisie class in the West (Figure 1).

Figure 1: The Autonomous Actor Model



Source: author

[7] Schumpeter (1942) states: "History clearly confirms…(that) … modern democracy rose along with capitalism, and in causal connection with it… modern democracy is a product of the capitalist process." Both Dahl and Berger posit that a market-oriented economy is a necessary though not sufficient condition for democracy. Berger asserts: "if capitalist development is successful in reaching economic growth from which a sizable proportion of the population benefits, pressures toward democracy are likely to appear."(Dahl 1992, Berger 1986).

Therefore, for the autonomous actor model, with its modernization/middle class thesis, there is an important linkage between business elites and liberalizing political change. These elites demand that both *resources* and *decision-making* power be put in the hands of these non-governmental social actors, thus they deem political freedoms as *necessary* to protect their economic freedoms (Pearson 1997, 24). With a keen awareness to protect their property rights and other freedoms, they began to form*horizontal relationships* with their independent resources and have a freer social space at their disposal. Coupled with a rising consciousness for collective political action, they develop a complex of autonomous social organizations such as political parties to aggregate their interests and push for representation in the government.

However, this direct relationship between economic reform and political change via the agents of the middle class is fraught with serious problems. The first is that these *nouveau riches* do not have uniform political ideology and will to pursue. They may avail themselves of more opportunities out of a freer social space to achieve their diverse interests, but it is far from clear what political ideology they would adopt. It is also unclear whether they willallocate their economic resources to achieve their political goals of inclusion. The heterogeneity of the business elites also determines their diverse perception of self-interest. Some business elites may believe in genuine democracy to bring about their prosperity, but others may deem it unnecessary. It is true that a modicum of private entrepreneurs joined the 1989 Tiananmen Movement to pressure for greater democracy and less corruption, but these activities are not at all common-place for business elites in China. In China, as well as in other developing countries, business elites' attitudes towards political activity are highly diverse. "The very position of the

middle classes, in between the elites and the masses, made for considerable ambiguity in the perception of their class interests regarding the desirability of full democracy" (Rueschemeyer et al. 1992, 185) . Leigh A. Payne, in her study of Brazilian industrialists, suggests that self-interest leads to totally different political ideologies among Brazil's business elites in the 1980s—some quite authoritarian and others quite liberal (Pearson 1997, 29). In Latin America, business elites even called upon military forces to take over governments in order to manage economic unrest. This is in tune with Rueschemeyer's finding that "the middle class would favor their own inclusion, but would be ambivalent about further extensions of political rights, perhaps swinging to one side or another on the basis of possible alliances"(Rueschemeyer et al 1992, 6). It is therefore unlikely to expect China's business elites to display the type of attitude homogeneity that is assumed by the autonomous actor model.

The second problem with this theory is the missing link between economic power and political power. The mechanism by which these business elites transform their economic resources into political power is quite unclear. In China, many businessmen curry favor to local officials for favorable business deals. In exchange, they attached their political loyalty to these local officials. There are little data to suggest that the Chinese business elites use their economic resources to advance political democracy. A study of the middle class in Shanxi concluded that, "Shanxi's new middle classes of the reform era have most definitely emerged from within, and remain to a large extent part of the local 'establishment'; and they espouse values consistent with their origins in local society and culture as well as from elsewhere" (Goodman 1999, 259). Thus, these wealthy individuals do not have independent political pursuits outside of the Communist

Party. In short, a key problem of the autonomous actor model is the highly ambiguous political ideology of these rising social and economic elites and the lack of a clear mechanism to translate economic power into political power. Even Mao Zedong in his study of Chinese social classes in the 1930s concluded that national industrialists were only half-hearted advocates of democracy. They belong to the "On-Top-of-the-Wall" Party—when a democratic revolution was useful for them, they turned to the side of the proletariats. Once not in their favor, they changed to support the existing regime.

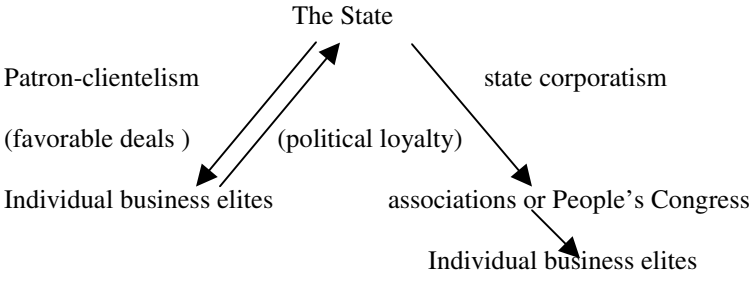
The Parasitic Actor Model

The second model, the **parasitic actor** model, challenges the view that emerging business elites are harbingers of democratization in China. Under this view rising economic and social elites use personal ties for their self-interests and are unwilling or unable to form strong horizontal ties to bargain with the state for the sake of their class interest. "For the most part these entrepreneurial managers and bureaucrats not only maintain their links with the party-state, but much of their successful, entrepreneurial activity is based precisely on exploiting those links" (Goodman 1999, 245). The patron-clientelist tie between the business elites and the state is oiled via informal channels of personal relationships (*guanxi)*. These personal ties of reciprocity between bureaucrats and business elites are characterized by mutual exchanges between allocation of resources and political loyalty.

In addition, although the state established or helped establish semi-independent organizations or trade unions to represent the interests of different sectors of industry, they are carefully designed to pre-empt the emerging autonomous business organizations.

Simultaneously, the state has devised corporatist strategies to deflect business elites' will to act and pre-empt their growing pressures from below for political power (Pearson 1997, 30-31). [8] Bruce Dickson finds that the party adopts a "two-pronged strategy" of creating corporatist links between the state and the business sector and co-opting individual entrepreneurs into the Chinese Communist Party (CCP) (Dickson 2003, 169). These business elites are far from being alienated from the Communist rule and seeking their independent space against state intrusion. They remain in close proximity with the state through close cooperation.

Figure 2: The Parasitic Model



Source: author

The strength of the parasitic actor model is that the rising autonomy of new social elites does not obscure the fact that a fundamental feature of Chinese politics is still hierarchical. Because Chinese politics is a classic example of patron-clientelism and state corporatism, the emerging business elites are unlikely to actively engage in an

[8] Philippe Schmitter defines corporatism as " a system of interest representation in which the constituent parts are organized into a limited number of singular, compulsory, noncompetitive, hierarchically ordered and functionally differentiated categories, recognized or licensed (if not created) by the state and granted a deliberate representational monopoly within their respective categories in exchange for observing certain controls on their selection of leaders and articulation of demands and supports" (Schmitter 1979, 13).

organized confrontation against the central government. Because of the hierarchical nature of their informal ties with the state, these rising elites lack horizontal ties that bind them together and facilitate collective consciousness and collective action. "China's new business elite has failed to transform its economic position into political power because it is uninterested in doing so, because there is a viable clientelist option, and because the socialist corporatist strategy of the state is designed to prevent it" (Pearson 1997, 139, 141). However, the weakness of this argument is that this institutional analysis is too static and can hardly capture the innovative forces latent within the system that would push for change. It seems that the system can determine everything, but actually actors can get rid of these institutional constraints and develop a strategy to gain more power versus the state through negotiated paths.

The Symbiotic Actor Model

A third model, the symbiotic actor model, concentrates on the dynamic relationship of mutual empowerment between the state and emerging social elites. Xu Wang argues that the state needs society to achieve its objectives (Xu 1999, 231). Migdal, Kohli, and Shue argue that effective ties between state and society may empower both sides (Migdal, Kohli, and Shue 1994). This necessarily means that political and social actors are disposed to form cooperative relationships. Talcott Parsons defined power as the general capacity of a social system to get things done in the interest of collective goals.[9] His contribution to political thinking is that power need not be treated as a zero-sum game between state and social actors. Both sides can reach an agreement

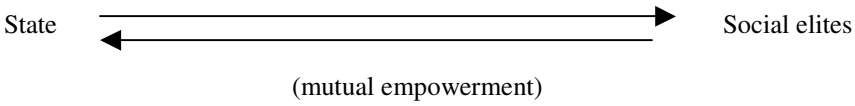
that is mutually beneficial. Later, Anthony Giddens redefined power as "the transformative capacity of human action, the capacity of human beings to intervene in a series of events so as to alter their courses" (Giddens 1995, 214). Under this model although power may always entail coercive subordinations of the establishment over its subjects, it is also true that state and social actors may also benefit from cooperation to enhance their joint power. An example is that the Korean government has sanctioned and granted monopoly representation to peak business associations such as the Korean Chamber of Commerce and Industry and the Federation of Korean Industry (FKI). It has promoted business conglomerates (*chaebol* such as Daewoo, LG, and Hyundai) and helped them grow into dynamic business with significant influence (Pearson 1997, 147).

Vivienne Shue argues that after many years of compartmentalization and "cellularization" through all kinds of work units, the state gradually lost its genuine social support from social actors. Thereafter, the state was confronted with a lack of interest from social forces to push forward its economic and political programs with the development of local protectionism and patron-client factionalism. Thus, the Communist Party tried to mobilize and recruit a variety of social elites into the political arena to revitalize its own bureaucratic body as well as the social supports necessary for further development. This new arrangement not only creates new power resources within society, but also strengthens the party-state itself "in its information gathering, policy planning, and even in its policy implementation modes" (Shue 1994, 65). Examples in sub-Saharan Africa and India suggest that the state may be powerless if the links between the political center and social periphery are too weak. Naomi Chazan finds that state

[9] In his words, "power then is generalized capacity to secure the performance of binding obligations by units in a system of collective organization when the obligations are legitimized with reference to their

formation and construction have paralleled with a vibrant and autonomous activities of social forces. She concludes that, "developments at both societal and state levels were mutually reinforcing" (Chazan 1994, 258).

Figure 3: The Symbiotic Model



source: author

The key critique of the symbiotic actor model is that the societal actors who are recruited into the political establishment would gradually lose their independent pursuit of social interests. They will favor the status quo rather than challenge the party state. "They will support and reinforce the policies of reform and opening, but seem to have little interest in more ambitious democratization" (Dickson 2003, 170). These social actors have acquired the title "red capitalists" for their pro-market and pro-Communist attitudes. In a word, these scholars argue in some cases, that state and social actors can cooperate with each other and strengthen each other. But under what conditions will state and societal actors cooperate? How do they resolve their conflicts? These issues remain unanswered need further study.

The Negotiating Actor Model

The fourth model, the **negotiating actor** model, posits the emergence of new horizontal relationships in society as social actors start to step into the vacuum of ignored or newly formed areas (e.g. environment, women rights, birth control). These actors then negotiate with the state to take responsibility over these new issues. Timothy Brook

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bearing on collective goals" (Parsons 1986, 103).

points out the "auto-organization" of social integration when people regularly communicate horizontally and form cooperative bodies (Brook 1997, 23). Instead of arguing that the Party-state compartmentalizing society to frustrate genuine pluralism, Tony Saich discovers that a vital social space starts to emerge and reveals a pattern of negotiation between state and social actors (Saich 2000, 124-5). There are three main reasons for this. First, the state has increasingly limited power of formal control over society with so many new and conflicting issues. Second, these social organizations and actors can actually enjoy a reciprocally beneficial relationship with the state. Third, social actors have also devised strategies to evade state intrusion and maximize their self-interest (Saich 2000, 125). He argues that since the Deng's economic reform has unleashed so much individual creativity, it is quite possible a desire for them to require accountability over officialdom and voice their desires and objectives in the political area. These actors engaged the state in a constructive process of discussion and negotiation. Thus they helped the state leaders changed their mind from their initial instrumental calculation of national interest, to a heated discussion of possible changes to make things better, and to the final stage of norm internalization to accept new concepts and rules in policy making (Figure 4).

Figure 4: The Negotiating Actor Model

Source: author

An example of this was an energetic and charismatic social elite-- Liang Congjie, a member of the Chinese People's Political Consultative Conference, who set up an NGO

called Friends of Nature that helped save many gold-hair monkeys in Yunnan Province, China. He mobilized student vigils and brought media attention to bear on the local Yunnan government to ban illegal logging. Liang was successful in extracting a decision from the local authorities to ban logging activities in order to save the golden monkeys' habitat. Another example comes from the editors for themagazine *Rural Women Knowing All* which publishes articles about the sexual health of rural women, the high suicidal rate of rural women, and discrimination against migrant women. These stories were quickly adopted by major official newspapers and became important policy issues for decision-makers. The most interesting example, however, comes from the members of the China Family Planning Association, who gradually broke its ties with its official governmental organ to run a number of innovative projects on sex education and women issues. It later rejected the selection of retired officials to be placed in its own posts. The association successfully pushed the government to change its target-driven quota-based system to one that is more client driven, offering more choices and combining it with education (Saich 2000, 137).

The most important contribution of the negotiating actor model is that it points out the active role of societal actors to substantially protect human rights and the environment through bargaining and compromise with the state. They were co-opted first and then embedded themselves with the state in order to acquire legitimacy and viability (O'Brien1994, 101) . Then over the veneer of formal compliance, social actors developed operating strategies of evasion and circumnavigation of the state. But the problem is that they are still operating under the basic guidelines and policies of the Party. This is a fundamental departure from the autonomous actor model because their work is

within the limits of Party toleration. All they have done is to heed those previously ignored areas or fulfill functions that the party-state has failed to do so. They are fine-tuning government policies instead of qualitatively pushing for political rights. These organizations still don't dare to cross the "thin red line" to vie for political power as opposition groups/parties in democratic countries.

All these four models have their respective strengths and weaknesses. Some models impute a political character to these social and business elites, rather than focusing on their specific will and motives to playing political games. The conventional wisdom of these theories tends to be based on a series of "black-box" assertions that obscure the ways these elites might truly produce a political outcome. Proponents of the "autonomous actor model" see these elites as leading to the downfall of an authoritarian regime, but the mechanisms through which this might occur are rarely specified. The "parasitic actor model" is an institutional approach with its parsimonious elegance to characterize the prevalent pattern of state-society relationship, but it fails to weigh the political challenges these social elites face and their potential confrontations against the state in time of change. The "symbiotic actor model" is an overly optimistic picture that state and social actors may mutually help each other without considerations of power asymmetry and potential conflicts between state and society. The "negotiating actor model" rests on anecdotal evidence, drawing primarily on isolated examples of successful stories in Chinese society. Subsequent assertions about the political effects are usually made without consideration of sources of change that newactors may play a role as meaning makers and the interaction of agent-structure to push for new directions of change. In addition, these models still do not tell us where the innovative ideas that make

political changes possible come from. They do not detail the mechanism that social elites use to mobilize and impact the state. So building on the literature view, I further the study to investigate the sources of change, tactics for innovation, and political outcomes of actors' efforts in the sector of information and communications industry.

The Role of IT Leadership

The study of IT leadership has four advantages for us to discern the political impact of the rising new social elite in China. First of all, the study of IT leadership may help us to know the origins of the innovative ideas for ICT diffusion. This is the first process of change—*awareness building* and *vision creation*. By tracing the origins of their innovative ideas and visions we can understand the belief system that is responsible for ICT diffusion in China. Vision building is a process used to convince ordinary people as well as political elites to attend to the new ICT. The second, *resource mobilization* is vital for their success in pushing political deals in the process of ICT diffusion. These IT leaders form political coalitions within and without the government to "obtain and deploy valuable resources, whether money or high-level political support, to spread ICTs more widely" (Wilson 2004b, 859). The four-sided "Quad" relationship between the public sector's institutions, enterprises, research centers, and non-profit organizations is essential for an effective pro-diffusion political coalition. These societal actors actively cooperate with each other to push for legal, regulatory, legislative, and organizational policies that are necessary for a wider diffusion of ICTs. Their unified collective interest includes ending the monopoly of China Telecom, building up national information infrastructure such as Golden Bridge, enacting the Digital Signature Law, and favorable

value added taxes for software. Third, through the study of IT leaders we get to know what their role is in enhancing the *institutional performance* of the state. Through the study of IT leadership, we get to know in detail how they help design the way to break up China Telecom, protect Internet security in China, control and regulate the Internet, and undertake the National Information Evaluation Center (NIEC). Fourth, the IT leadership may also be capable of subtly challenging the state via *trend setting*. Though they are still working under the strict surveillance of the government, they start to create a new communal culture based on networks outside the mainstream Communist propaganda (similar to "parallel polis" in Eastern Europe).

Vision Building

One vision, the tradition of educational excellence coupled with an experimental spirit in the reform era, help guide these IT leaders with a vision to stay a particular course. In the ICT context, vision is a body of arguments or doctrine that conveys effectively and coherently the ways that ICT services can advance the core values and goals of a given group, institution, or society. An ICT vision describes the preset, offers an attractive image of the future, and provides a way for people to move successfully to that future. It advances a broader societal and institutional agenda through the use of information and communication technologies. It is repeated in speeches, articles, and manifestos over a period of time. It provides a matrix for making sense of a complicated and chaotic world. A strong vision has emotive as well as analytic content. The vision glorifies Chinese civilization and possesses a keen awareness toward catching up with the developed world. This helps them pump their resources into this ICT sector. The word

"informatization" characterizes an ideal that entices scientists and entrepreneurs to help China jumpstart its national strength.[10] Innovative visions like his give people ideas to pursue a networked China through building a robust national information infrastructure.

This type of vision building in China is akin to the transformational leadership discussed by historians. In 1978, James MacGregor Burns introduced this concept and made a fundamental distinction between transactional and transformational leadership. Transactional leadership "occurs when one person takes the initiative in making contact with others for the purpose of an exchange of valued things" (Burns 1978, 19). This is an economic tradeoff between goods or other valued political leverages, a kind of business relationship as occurred in price bargaining. However, transformational leadership "occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality" (Burns 1978, 20).[11] Bass argues that transformational leadership possesses four basic attributes. First, they have charisma, or idealized influence. They are convicted with strong values, purposes, commitment, and ethics (Bass 1997, 133). Second, they cherish an appealing

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[10] For example, a vision of building dense networks and public institutions to advance design, diffusion, and the use of innovative technology is cherished by IT leaders such as Edward Tian. Edward Tian wrote in the journal of China Netcom: "Our dream directs our direction of efforts. I remember Chinese in the 1960 and 70s, at that time, people not only lacked food and clothing, but knowledge. In that era, the Chinese did not have dreams. We dream a broad future. We dream that China will have 300 to 500 million Internet users, the largest country with Internet, an online China. We dream that in the network economy and in the sea of information, the dignity of the Chinese will be recognized and respected because of our strong network economy and successful enterprises. China will become a leader of new economic civilization and progress. These dreams are leading the way for the China Netcom. The future has entrusted us with responsibility to speed up the construction of the infrastructure of the broadband of China. It calls for us to take all the opportunities. Our dreams are everlasting for the 21st century" (brochure of China Netcom in November 2002).

[11] He cites Mohandas Gandhi as an example whose moral aspiration of Satyahata (*truth force*) of non-violent means of struggle elevated himself to this transformational leadership. Here, leaders can have the potential to radically alter the motives and morals that govern a group. Abraham Lincoln is another example that he set free the slaves. Bernard Bass and Ben Avolio, and Robert House and Boas Shamir also suggest charisma is a general factor related to transformational leadership.

vision of the future and encourage followers to search for it for life's meaning. Third, such leaders are intellectually sophisticated to push followers to consider new departures of views and articulate their ways. Finally, they take into consideration the needs, capacities, and aspirations of their followers. Later, House and Shamir argue that a vision for a brighter future for followers is vital. This vision is often interconnected with values such as freedom, wealth, or prosperity. These leaders build a positive image to appeal to the followers. Sometimes leaders may seem to deviate from group norms and produce even more rewards for the group. This idiosyncrasy credit makes leaders meaning makers for the group. For example, Richard Nixon's visit to China may seem to contradict his vocal opposition of Communism, but it served higher goals for the United States. In this sense, leaders may steer the group towards novel directions or unconventional paths when they find they have sufficient credit to deviate group traditional norms. This is leads to a constructivist approach to leadership. Leaders possess power because they can tell moving stories to the audience about their proper identity. Effective leaders tell stories about themselves and where they were coming from and where they are heading to (Gardner 1995, 14). Thus these IT leaders sometimes even utilize revolutionary slogans to encourage their followers to help China leapfrog and catch up with developed countries in a new era.

Resource Mobilization

Throughout the world political leaders often come from a specific social stratum (Quandt 1970). In the case of IT leaders, Wilson found these "information champions" came from professional middle class families, the children of technicians, teachers,

doctors, and engineers (Wilson 2004b, 860). They were generally exposed to Western education, have passionate commitments, charisma to attract audiences, respect for their subordinates, and sagacity for a brighter Chinese future. Because these leaders possess unique attitudes, novel knowledge, and adaptable skills, they can convince others to follow their ideas on ICT diffusion.[12] Many Chinese IT leaders share similar overseas experiences, possess high incomes and social reputation, have higher education, and share common goals to challenge the natural monopoly of China Telecom.

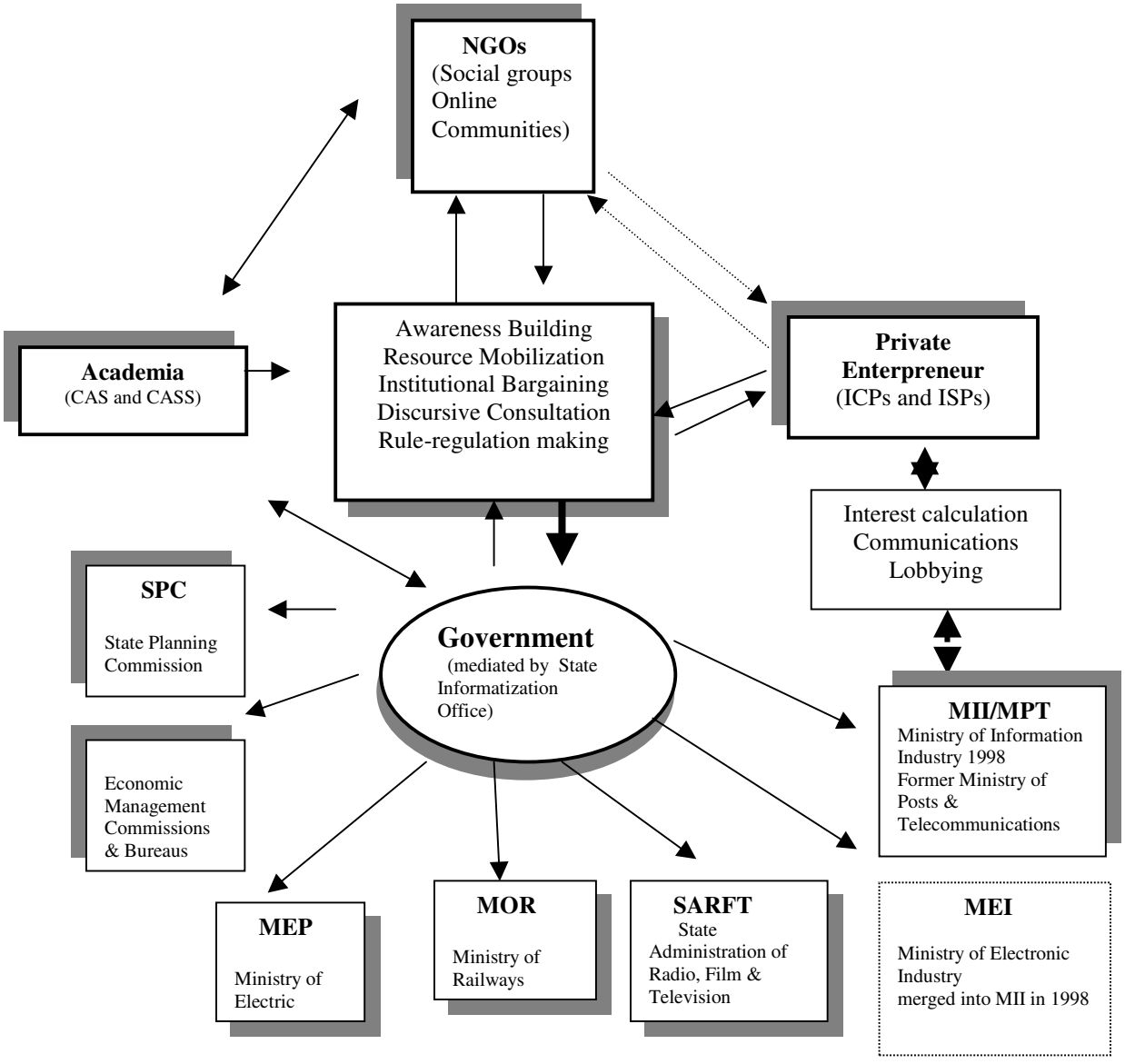
The study of leadership looks at how leaders network and build social capital throughout their career. They demonstrate a pattern of "Quad" cooperation between governmental officials, private entrepreneurs, scholars, and societal groups (Figure 5). [13] The assumption that decision makers are fully aware of the stakes in the IT sector is too subjective and unreliable for us to decide. Thus it is these IT leaders who go to universities, join social groups, graduate from professional institutions, move through civic and public associations or organizations, and make friends with decision makers. There are two areas where IT activists converge in Beijing: one West and the other in the East. Zhongguancun at West Beijing possesses a rich network of supportive ICT institutions such as the Information Network Center of the Chinese Academy of Science, Sea Dragon Software and Hardware Supply chain, Tsinghua University, a number of other top universities in China, and local IT companies such as Legend (Levono). In the East, near the buzzing streets of the Central Business District (CBD), the Kerry Center

[12] Later in the mid-20th century, the behavioral approach swept across the study of leadership. Particular attention was paid to relationship between leaders and followers and to the implications what type of leaders actually does the job. The finding is consistent and statistically significant: consideration for the followers in the workplace is crucial, as was strong task orientation. Effective managers are highly concerned for people and for production.

[13] This is similar to "iron triangles" in American politics and it conveys an established idea of corporatism.

and the China World Trade Towers house numerous IT joint ventures and foreign companies such as Motorola, PCCW, Hewlett-Packard, and Qualcom.

Figure 5. **"Quad" Coordination between the Public, Private, Academic, and NGO Sectors**



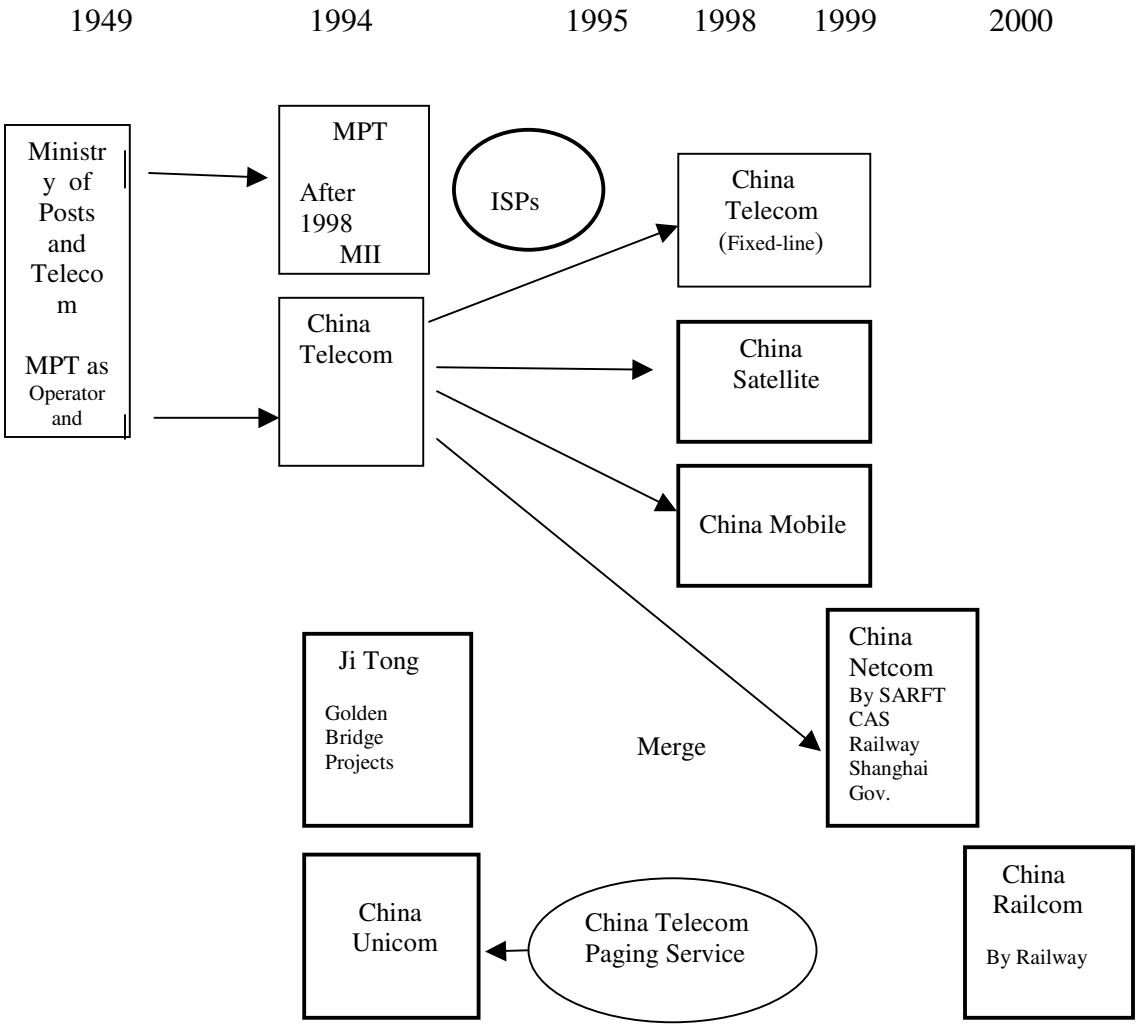
Source: author and Kathleen G. Huang

Thus resource mobilization is a key element for these IT leaders to affect political outcomes. These leaders actively lobby policy makers for coordination and control. These reformers actively undertake investigations, write new rules, popularize changes, and publish justifications for the new order. Clearly, they caution policy makers and tell them that much remains to be learned about what modes and degrees of state involvement and intervention in ICT diffusion are desirable. Thus they are pushing for the opening of the political establishment to pluralistic voices. For example, Gao Hongbing, after his visit in the US in 1996, raised the e-security issue to the Chinese leaders. Stating that almost all routes of the Internet have to go through the US, China needs to have its own routers and cn. domain name. This started the initiative for China to build up its domestic national information infrastructure. He also cautioned that the Chinese government has to step up its liberalization process in the ICT sector in order to catch up with the global economy.

Then they challenge the monopoly of national telecommunications companies by pointing out their hypocrisy on safeguarding national security. In other countries, there is such a process of resource mobilization. In the US, although the Pentagon deemed the breakup of AT & T a threat to national security, other actors such as U. S. Department of Justice led anti-monopoly investigations to restrict AT & T in 1956 to stay out information services. By the late 1960s, an entire school of Japanese scholars raised concern on "johaka shakai" (information society) and involved Ministry of International Trade and Industry (MITI) to discuss the importance of the information infrastructure. President Valery Giscard d'Estaining cautioned the importance of information infrastructure in a statement that an information society is a key to resolve national crisis

and internal tensions so as to control the fate of the French nation. In China, IT leaders such as Edward Tian, Gao Hongbing, Jasmine Zhang, Michael Wan and Ou Yangwu, conducted a thorough investigation on the cost and profits of basic telecommunications services. They proposed to the Chinese government that in order to speed up China's economic improvement, competition is crucial to build up China's national information infrastructure. This gave China Telecom a heavy blow and provided the central political leaders with concrete statistical proof and reasoning to break up China Telecom (Figure 6).

Figure 6**. Divestiture of China Telecom**



Source: Kathleen G. Huang

Institutional Performance

The third contribution of IT leadership is their effort to improve the institutional performance of the state. Putnam argues that a high-performance institution should be both responsive and effective: "sensitive to the demands of its constituents and effective in using limited resources to address these demands" (Putnam 1993, 9). Samuel Huntington also argues that the level of institutionalization of any political system can be defined by the adaptability, complexity, autonomy, and coherence of its organization (Huntington 1968, 12). An important insight from China's IT leaders as different from Russian entrepreneurs is that the former start with state building-- build a strong national information infrastructure and help design new rules and regulations for the ICT. In contrast, what accounts for Russia's derailed path from market to democracy is that so many political elites purchased political support from "oligarchs" of Russian business men, thus the governing elites tolerate corruption, patronage, and rent seeking behavior and neglect state building for a market democracy (Roberts and Sherlock 1999, 478). Russian business elites got rich by acquiring state assets and engaged in rent-seeking activities with public officials. Political leaders in Russia, in order to secure their positions in the government, made these "business oligarchs" interest a primary priority. Thus they have contributed to an enfeebled state and more opportunities for criminals creating widespread corruption in Russia. It is ironic to find that the crucial problem with Russian political economy lies in weak political institutions, a contrast with its predecessor, the gigantic Communist state-- the Soviet Union.

IT leaders in China, by contrast, build the state infrastructure and their wealth is not created through predatory behaviors on state assets.[14] This kind of "embeddedness" or "symbiosis" with the state made these IT leaders national "heroes". They persuaded the political leaders of the great potential of the Internet and tried to alleviate their worries by demonstrating to them that there are technologically feasible ways to control the Internet for security concerns. The power they possess is their ability to effect rules and institutions that govern these outcomes. In other words, they attempt to strengthen the governance in the ICT sector by helping the government regulate the newly emerging areas that have great significance for China's development. This has much to do with de-centralization and the non-hierarchical governance of the ICT sector.

The examples of the ways they improve the institutional performances lie at their efforts to push for competition and decentralization in the ICT reform in China. At the efforts of Minister Hu Qili and Edward Tian, the monopoly of China Telecom was broken and competition in the ICT sector became institutionalized. Examples will be illustrated in chapters hereafter, but two important efforts are also worth mentioning: one is the institutionalization of price hearings for telecommunications services and the other is the evaluation of the levels of "informatization" of state-owned enterprises and governmental organs. At the behest of Jasmine Zhang and Michael Wan, price hearings became a prerequisite for any price change in telecommunications services. This marks the first opening of grassroots voices and citizen participation in national telecommunications decision making. They fight over rules and practices to advance

[14] Of course, some of these IT elites may also attempt to bypass the state control to maximize their individual interests. But their relationship with the state is not collusive as to hurt the public interests.

political participation and public deliberation.[15] Jiang Qiping, former official at MII and now a research fellow at CASS, invited private capital to undertake national information evaluation issues. His team designed concrete questionnaires and statistical tools to evaluate e-implementation at private enterprises in China. He also organized meetings for CIOs (Chief Information Officer) of key enterprises to exchange ideas on how to make information technology an integral part of their management. This has helped the government gain a concrete and accurate understanding of the functioning of ICT in public and private sectors.

Trendsetting

The fourth contribution of these IT leaders is that they set civil society trends and help establish a new morality among the people. This is a normative power. These leaders make use of this highly interactive network to revitalize a sense of community and influence public deliberation. They contribute to a rising new interest and identity among ordinary people. This is akin to Alexander Wendt's concern for the issue of identity and interest formation—"a cognitive, inter-subjective conception of process in which identities and interests are endogenous to interaction, rather than a rationalist-behavioral one in which they are exogenous" (Wendt 1992, 393-394). These leaders help create conditions for citizen participation on human rights, social justice, and environmental issues. Tang Xiyang, founder of Green Camp in China, expounds a

[15] The past ideological justification is that the state has a moral and political obligation to provide basic services to its citizens. Government ownership could provide national security, protect national sovereignty, and create a greater sense of unity among the Chinese people. State plays a variety of roles from monopolistic direct ownership and control of production to more arm's length regulatory and informational activities that promote and protect private entrepreneurs.

powerful message online. He argues that "without real democratic life, there will not be everlasting green rivers or mountains"(Tang 2002). These leaders also make the Internet important platforms to educate people and raise public awareness about environmental protection and sustainable development. This environmental discourse has important characteristics. The most salient one is a series of new "green" lexicons in Chinese media such as green Olympics, green food, green campus, sustainable development, white pollution, recycling, ecology, endangered species, animal rights, global warming, desertification, deforestation, anti-logging, anti-poaching, global village, Earth Day, biodiversity, bird-watchers, and more. Many environmental NGOs have set up their own websites, including Green-Web, Greener Beijing, Friends of Green, Green Angel, Green Dalian, Green Earth Volunteers, Green Forum, Green Plateau, Green River, Green Xinjiang, and Green Zhejiang. These websites have one goal in common; they follow the "language of Rio" to "think globally" and "act locally". [16]

Impact on Political Change

The first step toward measuring their impact on politics is whether they have **uniform ideological and political goals** to pressure the government for political changes. The second way is the **organizational coherenc**e to break away from state control to push for political deals. The third way to measure their impact on political change is to see whether they can avail themselves of the new technology-especially the Internet to create necessary and sufficient conditions for political changes. However, before we come to their political impact, we can look at their traits first.

[16] Courtesy to Yang Guobing and Craig Calhoune

These IT leaders are best characterized by their a*mphibiousness.* This term denotes that the leaders are bridges between the West and China, state and society, and past and future. But the term also connotes their *dual* character. They are caught between a desire for a transparent and liberal political regime and a pragmatic dependence on personal ties for self-interest. They are like a tadpole that has grown legs but still cannot breath outside of the water. They have the ability and desire to hop on land, but must stay in the pond for their survival. Chinese IT leaders dream of decentralized government and a market economy, but they rely on the Chinese Communist state for their existence and privileged position. They strengthen the "infrastructural power" of the state while are cautious to challenge its "despotic power" (Mann 1986, 6-7). Despotic power refers to the distributive power that state actor can impose upon social actors. This is the power controlled by the hierarchical political elites without consultation with social actors. Thus the monopoly of China Telecom is this kind of power that social forces contest against and these IT leaders try their best to bargain with the state. On the other hand, social actors may also cooperate with the state or help the state to develop or strengthen the state via taking charge of issues unattended by the state before. Thus they are helping the state on its infrastructural power-- the institutional a capacity of the state to penetrate society to implement its decisions. They helped the state for a collective power that the development of state and society can be both enhanced through a more coordinated type of arrangement. Therefore, these IT leaders are helping the state for innovative changes at ICT sector, but they are not willing to nor intending to challenge the power of the Communist regime. This important finding is in tune with the historical role of Chinese business elites. The essence of the

merchant-state relations pattern was "neither wholly autonomous nor state-dominated but instead sat, Janus-like, between state and society, and at times even blended socially with the official class and carried out "public" (*gong*) works" (Pearson 1997, 44).

Even though China is far from a democracy, the way to assess the political impact of these IT leaders is to see how much closer (or further) they have moved Chinese politics towards the basic parameters of democracy—"the continuing responsiveness of the government to the preferences of its citizens, considered as political equals" (Dahl 1971, 1). From the roles I discussed on the importance of IT leadership in China, we gain some insights of these IT leaders in bringing innovative ideas into China, promoting public discussions, and enhancing balanced interactions between governmental officials, private entrepreneurs, NGO leaders, and researchers. This may suggest an emerging pluralism in Chinese politics. Their impact upon political change is evaluated mainly in two dimensions: state responsiveness and civic participation (Dittmer 2003, 904). Have they actively participated in the rules and regulation of the ICT issues?. Do they help nurture a culture that brings mass publics into the political equation—a process involving a dialectic between the emancipation of the masses to participate more actively in politics and a liberal trend towards the creation of a new civility? These are key dimensions I investigate for this dissertation project.

While acknowledging their contributions in bringing about better institutional performance of the public sector and engagement in the civil society, we should be very cautious about our claims of their contributions to political change. They still have a vested interest in state stability and the causal mechanism of their impact on political change needs to be specified more clearly.

First of all, they belong to the "non-critical realm" of society, created by the market dynamic of reform. Consistent with the "symbiotic actor model", they seek to be partners of the state, not challengers. They feel that the state is an important source of their power. Thus almost all my interviewees indicate that they support a stable political regime—an elitist perspective derived from a longstanding feudal tradition in China. Some leaders (i.e.Liu Chuanzhi of Lenovo) are actually joining the central committee of the Chinese Communist Party (CCP), thus being co-opted by the state. Thus, the non-critical realm of society does not pose direct opposition against the state, but helps it fine-tune its policies and regulate the supply of goods and services. As shown by these IT leaders, they reinforce the state's decision to liberalize market forces by designing ways to destroy monopolies in the ICT sector, reduce the state's interference in economic issues, and grant favorable policies for ICT diffusion (Tong 1994, 334).

In contrast, the "critical realm" of society directly pressures the government to encourage public involvement in the selection of political leaders and accountability over state actions. Thus the "critical realm" of society fights for institutional guarantees for a democratic government. These indicators include—freedom to form and join organizations, freedom of expression, the right to vote, eligibility for public office, right of political leaders to compete for support, alternative sources of information, free and fair elections, and institutions or making governmental policies depend on votes and other expressions of preference (Dahl 1971, 3). However, the inclusion of these IT leaders into the policy process reflects that these IT leaders are not deemed by the state as members of the critical intelligentsia that threaten the Communist monopoly on state power. Their motivation to participate in the policy or rule making process stems largely

from their business interests. They do not have organized and coherent political goals as the "party reform circle" in Hungary which turned into a strong anti-establishment force to dissolve the Socialist Worker's Party in 1989. They are also different from young elites in Taiwan. The lesson from KMT's efforts to recruit educated youth into the political system also tells us that this co-optation strategy of the state has strengthened the state via their expertise and technical skills. However, these co-opted young talents gradually changed the institutional goal of the Taiwan political system: from reclaiming the mainland to an independent Taiwan state. Unlike KMT elites who were exposed to Western political systems, these IT leaders in China generally lack the understanding of alternative political values and the experiences of democratic institutional arrangements so as to be a "critical realm" group. They belong to a "non-critical realm" of society, unlikely to be harbingers of democratizing reforms, although they may create a more liberalizing condition in favor of such attempts. As the state and IT leaders get closer and closer, they may actually reinforce the status quo because both of them benefit from the preservation of such a symbiotic relationship. This may even lead to a more efficient form of new authoritarianism.

Second, even though many of these IT leaders desire formal channels of complaints, they still resort to personal relationships to improve their business. They have not developed into a coherent, independent, and powerful social class for political liberalization. Occasionally these IT leaders are invited to participate in the process of policy making and implementation, and the corporatist-style framework provides arenas for institutionalized interactions between state elites and powerful social actors. They play active roles to help transform the policy making style from "mandatism and

decretism" to "concertation" (Carlos, Marvall, and Przeworski 1992).[17] Even Jasmine Zhang says that revolutionary people within the establishment have been weeded out and people outside the system lack resources for social mobilization.[18] Therefore, those IT leaders' influence on political change is more normative than substantive. Thus even though most IT leaders probably share broad visions of a networked and open China, we cannot assume the prior existence of a normative consensus or objective common interests among various IT elites. Various IT elites are not always aggregative and inclusive, leading to a hegemony of fundamental ideas. Therefore, there is a logical jump from belief to behavior, and from behavior to policy change. Many IT elites possess a willingness or vision to transform China into a more open society, but these visions may not be transformed into political behavior. Even though some may have demonstrated significant levels of participation in the political process, these behaviors may not be translated into substantial policy results. Thus we still lack direct evidence how these leaders' aggregated belief systems and behaviors produce substantial results of policy innovation, rules or institutional improvement and active civic engagement. The anecdote stories in the dissertation only suggest possible pathways that emerging social elites such as IT leaders may enhance state responsiveness and public participation.

Third, the state still remains strict control over society, thus pre-empting open actions against the state via the Internet by IT activists. Even though the state may grant leeway for these IT leaders to participate in the course of policy-making or rule making, this kind of power may be used by the state to increase its despotic power. Thus on one hand, we see the Internet is rapidly growing, while the state also maintains more strict

[17] The executive imposes reforms from above through decrees or other tough measures.

control of the Internet through newly developed technologies. The Internet, as developed by these IT leaders and the state, may serve the purpose of the state by enhancing its power to co-opt, preempt, subordinate, and control social activities. Therefore, the power of these IT leaders still largely hinge on state implementation. They may encourage some public contestation online, but are still within the maximum tolerance of the state. The state intentionally allows some freedom online to show that it gives people lots of freedom. But actually, it still controls lifelines and many fundamental freedoms, such as the freedom of vote, association, and free speech are far from realized in China. These IT leaders fine-tune state policies for development, but they fail to address the fundamental problem of the Chinese political system--one party rule without significant checks and balances on the state power.

There are significant numbers of responses from these IT leaders in favor of more political transparency, interaction between state and society, and more inclusion in the decision-making process. But, there is little evidence to suggest that they push for qualitative political changes openly. Politically speaking, those outside the establishment who want to push for political changes lack the resources and organization to achieve the purpose and those within the establishment have been brainwashed and distilled of their liberal efforts. Their coalition for ICT diffusion could hardly touch the hard core of the Communist rule—one party dictatorship. They encourage people to use the Internet to be engaged in more public contestation, but they are still quite wary of their personal security. Thus when the government decided to ban the report on Gao Xingjian's Nobel Laureate in 2000, the IT leaders at sina.com immediately deleted all of the messages,

[18] Personal communications on October 27, 2004 at Capital Hotel of Beijing

only retaining a link with Norway. Even though there are so many BBS (online forums) in China that people can freely talk about many sensitive issues, this openness on the Internet is a deliberate state policy to allow some public complaints and to make a show of the government's ability to let its people enjoy freedom of expression. But the state can actually screen all differing ideas online to gain a "better adapted form of control over the political forces unleashed by economic growth" (Steven-Yang 2001). These IT leaders may openly complain about economic failures or mismanagement, but the complaints about root cause of many of their economic problems, the socialist system, cannot be tolerated by the government. Thus, political openness for public contestation is still quite constrained despite the expansion of the Internet.

These IT leaders introduce concepts such as networked society into China and help more consultations between the state and civil society. Therefore, they create some necessary conditions for political inclusion and public contestation. But they are not sufficient conditions for political changes in China. The Internet they possess or push forward is unlikely to lead to the decay of the authoritarian state of China. In other word, the Internet does not always lead to liberal or democratic practices. Some of its most celebrated political incarnations can be an instrument of intense Chinese nationalism (such as in the wake of the April 2001 EP-3 incident).[19] Drake, Kalathil, and Boas argue that in none of the democratic transitions over the past two decades could one find that the Internet played "an important—much less crucial—causal role" (Drake, Kalathil, and Boas 2000). There is a logical jump that with the flow of information, the Internet will automatically transmit those democratic values and practices into the Chinese practice. This is an argument entirely based on faith, "a classic black box explanation in which a

cause is said to produce an outcome through mechanisms that are entirely unclear" (Drake, Kalathil, and Boas 2000, 2). Many studies on the impact of the Internet in developing countries show that the Internet does not bring down authoritarian regimes (Harford 2000, 255-262; Rohozinski 2000, 334-338). Even though these IT leaders may use the Internet to increase demands of political transparency and accountability and end corruption, the state may counter these pro-democracy attitudes and voices with strict censorship. We cannot conclude that the authoritarian regime is in jeopardy just by observing some anti-establishment messages online.

Because the Internet is embedded in the social, cultural, and institutional background, its political effects will depend on the interplay with off-line political dynamics like shifting elite preferences and coalitional dynamics, wider structural forces and economic conditions, and pressures from international pressures. Thus, these factors are sufficiently independent of any IT leader's Internet activity, or their use of the Internet may only play, at best, an intervening or facilitating role. These IT leaders' efforts for political opening may be a necessary condition for political change, but far from sufficient conditions for political liberalization. For them to become a sufficient condition for political change, this class of IT elites should at least (1) actually emerge as an economically independent and powerful social force and (2) it will take an active interest in politics, much less the politics of opposition.

Research Focus

This study critically examines the impact of IT leaders in China's governmental policies and other political outcomes, adopting an approach that avoids the pitfalls of

[19]See Edward Yang, pp. 23.

conventional wisdom. First of all, it aims to break down and analyze the traits and social origins of these IT leaders, taking a comprehensive look at how they emerged during an era of reform. So as not to contribute to the rash of black-box explanations, I examine *causal mechanisms* that connect their activities to their potential political impacts. I also situate their behaviors in different institutional contexts (i.e. public sector, private enterprises, academia, and non-governmental organizations) in order to see whether there are repeated processes and outcomes. I use this method to test whether leadership is the variable present in all cases contributed to the rapid ICT diffusions in China. Alternatively, I identify winners and losers in specific sectors in order to find the strengths and weaknesses of these IT leaders, and out of five dimensions I explain later—autonomous, symbiotic, parasitic, negotiating and amphibious, which one is the most salient. This approach avoids the potentially inappropriate generalizations that can arise from isolated anecdotal stories.

This dissertation project tests the political impact of these IT leaders in both the ICT diffusion and political development in China– whether they are conducive to increasing state responsiveness and a rising civil society. It does not seek to prove that IT leaders will help undermine the Communist regime, nor does it argue that they are merely obedient servers of the government. Rather, it implements a framework that allows us to think about these leaders and their implications for political change in China. As this strategic group of IT leaders develops further and more evidence is accumulated in the future, this framework will, hopefully, prove instrumental for measuring long-term social and political changes in China. Therefore, a single strand in comparative politics (e.g. modernization/civil society/ middle class model, state-corporatism model, or embedded

autonomy) may not be able to capture the complexity of the power struggle behind ICT diffusion. By witnessing the interplay of all parasitic, symbiotic, and confrontational relations at work simultaneously, I intend to test the hypothesis that IT leadership contributes to political changes in China, which is built upon my evidence of investigation.

Research Design and Parameters of evaluation

The purpose of this qualitative study is exploratory, uncovering topics about which little has been written, known, or studied. I attempt to draw a new picture based on new discoveries (Creswell 2003, 21). Historical events on breaking up China Telecom, introducing new competitors such as China Unicom, China Netcom and China Railcom, and building national information infrastructure are covered in many publications . But the locomotive of these changes, power struggles and people's strategies behind these changes, were not examined clearly in the past. Thus a "thick description" of this process of ICT diffusion is instrumental for us to understand the political struggles behind in order to identify and assess the political impact of those IT leaders behind this exciting process (Geetz 1971).[20] My research will highlight the role of leadership in the difficult process of ICT diffusion in order to fill the gap between known and unknown by uncovering new materials and by stimulating new perspectives

[20] Madame Song Ling, ex-Director of the Office for Promoting Informatization at MII, was frustrated at the twisted recount over the history of ICT development in China. Some Western sources are also flawed for their authenticity. The example is David Sheff's *China Dawn*. In this book, he regards Peng Peng as the Vice Minister of MOR, but he was only the director of telecom bureau under MOR (147). He also implied that Hou Ziqiang, a scientist who presented to Premier Zhu on the potentials of IP networks, got support from Vice President of CAS, Yan Yixun. According to one of the insiders who joined all the discussions of China Netcom, this version was not true. Yan was at odds with Hou and this caused Jasmine Zhang and Gao Hongbing to back down from China Netcom at its inception. Hou Ziqiang was later given an honorary

in telecommunications reform in China. Eventually, I suggest the possible political changes by these IT leaders based on the solid empirical findings relating to the topic.

This data was collected through six research visits to China over the past four years (2002-2005). I identify the IT leadersthrough a *reputation* approach by looking at their social and political status. This group of people usually has a high reputation in the political, social, and economic realms. Like a snowball rolling, the interviewees also introduced me to other IT elites during my interviews. These leaders are 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. These respondents helped me identify many top people in the ICT field who were most responsible for the ICT diffusion.

My questions, first of all, are focused on whether these leaders have differing and innovative ideas and visions to introduce into the ICT and political arena. Second, I carefully examine their coordination from the public sector to the private, from research institutes to non-governmental organizations to see whether they have an impact on ICT diffusion. Third, I cautiously asked their political penchant and their approach to the state and society in an attempt to assess their role in the current state-society relationship.

I asked open-ended questions, which were based on the questionnaire I designed, but did not strictly following it. The reason is that interviewing can be "an open-ended process of discovery in which one encounters unexpected insights" and new kind of information (Walder 1986, 256). Nevertheless, there are some basic questions that I ask every IT elite I encounter. I avoid searching for answers fitting into a

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position as a chief engineering consultant, not even a formal position at the Board of Directors (see Chapter 4 for details).

preexisting theoretical model. Thus my questions evolve and are revised, the focus of inquiry narrows over time, and I develop, test, and refine new concepts and explanations to form inchoate theoretical frameworks in the course of the inquiry. In this way, each interviewee can tell me their special interests that are well worth documenting. Almost 80% of interviewees are in their mid-forties. They experienced the Cultural Revolution and traveled abroad. They have a high income, good education, and admirable social status. These important questions are on: (1) their social background and issues intrigued them into the ICT business; (2) whether they believe the current information revolution is not just a technical revolution, but a social and political revolution; (3) their views on economic reform and the role of the middle class; (4) the impact of their overseas education or experience; (5) the way they approach political issues; (6) how they believe that ICT diffusion is related to politics; and (7) whether they have an impact on political development in China. To do this, I focus on three aspects of their characteristics. 1. Creativity—do they have different visions? Are they vanguards to push for new norms, discover new ideas for development, and reinvent politics for civil society? 2. Craftsmanship— what capacity do they possess to strike political deals through viable channels, devise strategies to evade state intrusion while at the same time, obtain support from both the state and society? 3. Courage—do they have the bravery to enlighten the people in darkness and dare to challenge existing monopolies and irrationalities? Two important aspects of China's IT leadership need to be highlighted: one vision, and the other capability. In simple words, I want to show what do these leaders want to achieve, what can they achieve, and what they cannot achieve. Thus a

first cut is to discern whether there is a complex linkage between modernization and traits of these IT leaders.

The best way to approach this group of people is the immersion into their IT culture —how they network and have their communal activities. As Putnam argues that the "immersion sharpens our intuitions and provides innumerable clues about how the institution fits together and how it adapts to its environment" (Putnam 1993, 12). I attend their conferences, have workshops, and hold seminars with them to understand the way they improve the institutional performance, invigorate civil society, and pressure for state responsiveness. The success for ICT diffusion is not simply a question of using imported content or hardware, but an issue to help create an eco-system that can nurture a knowledge society culture. The challenge is for national leaders to foster a new set of attitudes, expectations, and values that encourage people to lean toward the creation and diffusion of knowledge. Thus by frequent contacts with them, I gain understanding how these IT leaders foster a knowledge culture that is organic and open-minded within a particular structural context. For example, China's showpiece Zhongguancun develops a special culture nurtured by leadership, institutional commitment, and availability of values, attitudes, and behaviors that can support China's Silicon Valley. Just as the indigenous local cultures of Santa Clara and Cambridge could be manipulated by IT leaders to support innovation, diffusion, and local ICT sustainability, the Internet creates a local ICT-enabling environment that draws on traditional and modern thoughts. This is a hospitable environment for creating a continuous application of intellectual energy, transforming it into knowledge, and distributing it and redistributing it again to more and more potential users. This is the great insight of Manual Castells (1998): the information

revolution is a process by which institutions, groups, and individuals interact to redesign the production and distribution of ICT services. These interactions cannot be mandated or forced but can be guided and facilitated with vision and leadership.

To enhance the reliability of my interview contents, I asked different people in the ICT sector the same questions to get a differing perspective. According to Karl Deutsche, truth lies at the confluence of independent streams of evidence (Putnam 1993, 12). Thus a wise investigator needs to rely on the diversification of his evidence to magnify his strengths. This diversification has two meanings: one that provides breadth and the other depth. Breadth means to continue to probe new pieces of information, fresh perspectives on an old subject, or a newly revealed dimension of an issue. In this dissertation, I attempt to cover individual, social, and temporal dimensions of these IT leaders as explicit as possible to probe their social origins, education, economic views, political behaviors etc. Depth implies the deeper analysis and evaluation of their potential impact on politics with two or three focused case studies. Therefore, Chapter 2 is more on the width of these IT leader, the beliefs, traits, and behaviors of these IT leaders. Chapters 3 to 5 are three case studies tracing the process as they influence China's ICT diffusion and possible political changes via their activities on ICT diffusion at the public, private and non-governmental organization level.

Case Selection and Comparative Methods

I employ both "method of similarity" and "method of difference" research strategies to compare cases across various ICT sectors and within each case study. For method of similarity method, I use it in contrasting different IT elites in different social backgrounds,

the public, private, and non-governmental organizations in order to find whether leadership is the most convincing variable that contributes to ICT diffusion. For the method of difference, I use it in testing which model (autonomous, parasitic, symbiotic, negotiating, and amphibious actor model) accounts most for different political outcomes of different leaders in similar settings. This is a method that I hold constant of most social background variables in order to locate the variables that differ which might be considered key candidates for investigation as causal or explanatory variables (Satori 1997; Pennings et al. 1999, 203).

I develop three cases. The first case concentrates on the role of the IT leaders in the public sector—how they strengthen the institutional performance in China. I look at the way they devise strategies to build national information infrastructure and break up China Telecom. The focus will be on their active efforts in introducing new norms of national information infrastructure and anti-monopoly efforts on competition and pricing policies on telecommunications service and regulations. I compare five important figures, Hu Qili of MEI, Liu Cai of MII, Edward Tian of China Netcom, Peng Peng of Railcom, and Gao Hongbing of Informatization Office by the method of similarity to find key insights over their successes and failures in the ICT reform in China. Through testing the theoretical models, their potential impact on the state will be discovered along a range of parameters. Within this case, a method of similarity is used to find how different political outcomes can be achieved even though they are all in the public sector. Some leaders were successful while some were not. Some achieved in some circumstances, but lost their political career. These are interesting examples for us to test the hypothesis whether they can and how much they can impact upon political system.

The second case study will be on the leadership in the private sector. I test the political beliefs and behaviors of entrepreneurs in the ISP, software, and e-commerce sector. I will focus especially on three IT entrepreneurs: Jasmine Zhang of Genesis Capital, Michael Wan of Net China, and John Wang of 8848.com. They are successful business men and women, but they took different political outlooks and achieved different outcomes.

The third case will be a test on the role of leadership in the non-government organizations, specifically the impact of the Internet on human rights and environmental issues. I choose three content providers: Liu Jun of sina.com, Shan Chengbiao of people.com, and Zhaxi of Tibetan Antelope Information Center (TAIC). They make use of the Internet to vent their voices over political injustices and environmental degradation. But some made big impact while others did not. Though these cases are only marginal for political change, we can still discern their subtle struggle with the state and the "ratchet effect" for changes at civil society.

Limitations of the Study

Nevertheless, there are limitations on my research. By merely listening to their account of visions and self-portrait of their capability to influence the political decision-making or civil society formation, it is still difficult to evaluate their true impact on political change. But there are many different voices being heard among the political elites, and it is hard to determine whether it was the IT leaders' voice that finally predominates. Thus although my interview followed the pattern from belief, behavior, to policy change, the causal mechanism is not easy to establish. For example, a director at

China Railcom complained that the real problem with his company was due to the inseparable link between business management and political intrusion. Although he recognizes this as a serious problem of China Railcom, he could not do any thing to rectify it. As we know, later China Railcom detached from the Ministry of Railway in mid-2004, but such a decision is unrelated to these beliefs or behaviors of these IT leaders. This is a serious challenge for my dissertation.

Another shortcoming of the study is that in the search for the correlation between leader attributes and outcomes, it is difficult to discern the intervening variables or condition variables that influence or constrain those outcomes of leadership. Even though these IT leaders were involved throughout the reform process of ISP market entry, their influence over the outcome should not be exaggerated. There are two crucial intervening variables—*bureaucratic politics* and *elite rationality* that may, for example, determine the final outcome of the private ISP licenses. Jasmine Zhang believes that the current telecom reform reflects the interest *replacement* between *old bureaucratic tycoons* and new *political aristocracies*. Previously Premier Li Peng controlled most lifeline industrial sectors such as electric power and telecommunications. Now President Jiang Zemin's son was behind the scenes of many telecommunications decisions and pushed for establishing new competitors such as China Netcom against China Telecom. Therefore, the new aristocracy of Jiang naturally replaced Premier Li's dynasty and succeeded in the market initiatives as the ISP sector as Jiang Mianheng was trained in the US with a market-oriented mentality. In addition, their views were acceptable to some liberal officials, but were music to the ears of incumbents. The choice of telecom reform may be largely based on *elite rationality* influenced by structural imperatives of the WTO

and other new outlooks as a result of their learning. Political elites themselves—both the old guard and the newly recruited, may or may not undergo a normative transformation.[21]

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Chapter 1 defines IT leadership and offers a theoretical framework of study.

Chapter 2 describes the traits of these leaders by dissecting their beliefs and behaviors into five dimensions: autonomous, parasitic, symbiotic, negotiating, and amphibious dimensions. Then it assesses their potential impact on political changes via studying their visions and capacities in pushing forward ICT diffusion.

Chapter 3 is a case study on the role of leadership in the public sector, especially their efforts at national information infrastructure building and dismantling monopolies. It emphasizes thevisions, craftsmanship, and courage of several IT leaders such as Hu Qili, Edward Tian, Peng Peng in designing national information infrastructure and setting up the first competitive carrieriers against the monopoly of China Telecom. Gao Hongbing's experience helps us gain an insider's view on the process of specific decision-making at MII and other senior posts. It is also an example of political coalition built upon achieving common goals of ICT diffusion.

Chapter 4 is a case study on the private sector--ISP market entry and e-commerce. This chapter focuses on private sector efforts for ICT diffusion. Three IT leaders are

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[21] Conditional variables (contextual variables or moderator variables such as work environment, group task or followership characteristics) also influence the effectiveness of leadership. Independent variables of traits do not easily translate from situation to situation. A leader like Churchill who was decisive, fearless and courageous on the battlefield may end up an utter failure in domestic elections. Jasmine Zhang was successful in mobilizing resources to set up the first ISP in China, but was forced to resign from the CEO position due to mismanagement. We are still uncertain why some people are leaders in one situation not another. The situational leadership approach attempts to resolve this. John Gardner, the founder of Common Cause, discovered that the type of leadership for a social movement is often different from the leadership needed for military action.

emphasized: Jasmine Zhang of Infohighway, Michael Wan of Net China, and John Wang of 8848.com are important examples of how ordinary entrepreneurs approach political issues and push for policies like the Digital Signatures Law.

Chapter 5 looks at content providers (ICPs) and IT advocates in the non-governmental organizations and discerns their impact on society. It focuses on Liu Jun, Shan Chengbiao and Zhaxi to trace activities by scientists, intellectuals, and NGO groups to establish online forums ICPs to express their own opinions and create a "second culture" and revitalize civil society. I also look at state strategies to control these online activities.

Chapter 6 summarizes key findings and insights of China's IT leaders and compare their importance with othere developing countries. It also integrates the China's IT leaders into a Communist transitions in order to test whether possible changes can start from the middle level as compared with the top-down or bottom-up revolutions as evidenced in the democratic transitions in East-Central Europe.

Chapter 2. The Amphibiousness of China's IT Leaders: an Overview of Traits and Behaviors

As politics is "a great and civilizing human activity", this Chapter addresses the autonomous, symbiotic, parasitic and negotiating dimensions of China's IT leadership (Crick 1972).[22] It uncovers their upbringing and background, both psychologically and sociologically, in order to understand their *autonomy* of beliefs and behaviors. Especially, the focus is on ways they organize themselves to take advantage of existingstructures and opportunities to involve themselves in the process of policy making as *symbiotic* and *negotiating* actors with the state. In this chapter we also look at how these leaders make use of personal ties within the state and exploit a comfortable parasitic relationship with the state for favorable deals. Finally, it discusses their *amphibious* character as both a bridge to link the West with China and as advisors, not challengers, of the regime.

The Autonomous Dimension : Traits and Beliefs

As a result of change and development in the modern world, society inevitably places a premium on new skills and talents. From this standpoint, China's IT leadership is a heterogeneous and independent group of social elites. First and foremost, timeless

[22] Juan Linz and Alfred Stepan have described the process in which actors press for change as political "crafting", which has three components: the *nature* of the crafters*,* that is, the political alliances that coalesce for and against change; the *process* of crafting, namely, the dynamics of contestation and decision making among these groups; and the finished *craftwork*, that is, the rules and institutions that all parties come to agree on. Political actors who grasp economic and political opportunities became crucial for changes at a time of transition (Linz and Stepan 1996).

and universal characteristics of leadership holds true for IT leaders.[23] Trait theory, represented by Bernard Bass (1997), searches for those traits of good leaders. Bass believes that leaders are superior individuals different from other people because of skills and capabilities that came to them through inherited social status or fortune. In the 1930s and 1940s studies were devoted to study those hereditary properties such as height or intelligence. These works tried to study the correlation between leader attributes and leadership outcomes.[24] Like leaders elsewhere, the stated or implied assumption is that leaders may share high educational or social background. Even the most non-quantitative, non-behavioral study of politics is likely to stress the importance of some social backgrounds facts such as: the old school tie in the British cabinet; the dominant role played in Israeli politics by Central European and Russian emigrants; the implications for future Chinese politics of the advanced age of the top leadership; the growing influence of technically trained bureaucrats in Communist systems; and the Alawite origins of Syrian Baathist leaders. For virtually every country, some similar insight based on social-background facts can be found (Quandt 1970, 181).[25]

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[23] The earliest study of leadership may start from Sigmund Freud's psychoanalytic theory. In his book *Group Psychology and the Analysis of the Ego* (1921), he highlights the strong emotional attachments between leaders and followers. Ideas are important for leadership and a colorful and forceful presentation may even be more helpful. Thus the leader enjoys prestige and influence because he helps his group to reach its goals. Later after World War II until 1975, trait theory, the behavior approach, and situational ethics dominated the research agenda of leadership. After that, power and influence theories, group relations, and constructivist approaches prevail.

[24] Stephen Covey's popular book *Seven Habits of Effective People* lists a number of attitudes, traits or goals that people should yearn for to become a successful leader.

[25] These 50 interviews are balanced into four broad categories.

1. Public Sector: Liberal officials such as Minister Hu Qili, Liu Cai and other functionaries of regulatory state organs, such as the State Information Office, and Moftec; managers of state-owned enterprises such Peng Peng of China Railcom; ups and overs, including Gao Hongbing (China Link), Zhai Jun (China RailCom), etc.
2. Private Sector: private entrepreneurs with domestic education, including Jasmine Zhang, Michael Wan, John Wang, and other ISPs; overseas Chinese who have overseas education or resources, including Charles Zhang, Edward Tian and Zeng, Michael Wan, and Wang Yan.
3. Academia: natural scientists or university professors at research institutions, including Prof. Qian Hualin of CAS,

Their autonomous character is derived from their good education and relatively high income compared with ordinary Chinese people. Of the 50 people I have interviewed, 52% have a bachelor's degree, 34% have a master's degree, and 14% hold a Ph. D. or will get one in the year to come. More than half of them experienced the tragedies of the Cultural Revolution. Their age ranges from 25-45, only 10% are above that age group.[26] These IT leaders belong to a rising middle class in China in terms of income, education, social status, and professional expertise. In January 2005, the National Statistical Bureau publicized its first clear numerical income definition of the middle class in China, "60,000 to 500,000 yuan is a standard for the middle income family household (three persons per family average)"[27]. Scholars like Zhang Wanli holds that "middle class" should not be only an economic concept, but involves social and political connotations. According to her view, education and professional standards, consumption for more spiritual needs, and impact upon public issues are vital for this definition. Even from this view, we can see these IT leaders belong to an emerging middle class that start to impact public affairs. It is also worthy to note that these IT leaders rise to prominence neither because of inherited fortune, like the "Party of the Princelings" (*Taizidang*)—children of senior cadres, nor due to speculation and profiteering like "oligarch" tycoons in Russia or "sudden riches" (*baofahu*) in China.

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4. Content providers and Non-governmental organizations: Liu Jun of sina.com, Shan Chengbiao of people.com, and Zhaxi of greenchina.com; media workers, such as Xu Zhiyuan, editor of Economic Observer who write regularly on the Internet development; NGO leaders who use the Internet for advocacy like Greener Beijing which has not officially registered as an NGO; and NPOs such as China Network Information Center (CNNIC), and China E-Commerce Association and China Internet Society.

[26] See Appendix I for specific names of interviewees.

[27] This standard is calculated according to the starting point of GDP of global middle-income class (World Bank) from $ 3470 to $ 8000. see *Huaxia Times*, Jan. 19, 2005, cited from URL: http://news.sina.com.cn/c/2005-01-19/02074875044s.shtml, such calculating method includes the conversion from US dollars to RMB, average GDP to average income, and the purchasing parity. The report projects that in 2020 the group of the middle class will rise from 5.04% to 45%.

Some of these new leaders were even from humble families.[28] Most of them base their business on providing a more connected and efficient technical and social service to the Chinese government or its citizens.

The upbringings and experiences of these IT leaders are primordial forces that shaped their autonomous world outlook, providing a foundation of their independent pursuit in the process of ICT diffusion. Robert Dahl stresses that some factors—exposure, prestige, and consistency with previous beliefs and experiences—that help determine particular beliefs of particular individuals during a specific time (Dahl 1971, 180). A person is likely to accept a certain idea if the idea has been formulated and diffused to the individual's environment. Most people acquire their beliefs when they are particularly *receptive*, e.g. youthful socialization. Whether they would accept an idea depends on what are thought to be its achievements.[29] An individual will acquire an idea if it is consistent with his present beliefs because the culture one is brought up in usually provides the conscious and unconscious assumptions against which new beliefs are tested.[30] The remainder of this section will elaborate on the experiences of IT leaders and their education to test the degree of their autonomy in the political realm. We will

[28] For example, Wang Jiangmin, No. 1 KV (kill-virus) software developer in China was born with polio. He could not walk well and his legs suffered another accident again. But he was courageous enough to try to take a bike, climb the mountain, and swim in the sea. As no company could hire him, he learned to assemble radios, wireless receivers and recorders when he was quite young.

[29] An example is that the American Revolution encouraged Europeans to think that the liberal ideas of the Enlightenment were successful. See R. R. Palmer, 1959.

[30] According to Robert Dahl (1971, 185-186), the chance that an actor will acquire particular belief during a period of receptivity seems to depend on:

----The amount to which the actor is exposed to the belief, which in turn a). requires that the belief has been formulated and diffused to the actor's environment; and b). depends on the amount of influence that the bearers of the belief exert on processes of socialization.

----The relative prestige of the belief, which depends on a). the personal prestige of its advocates and antagonists; and b). the successes and failures of the people, organizations, and institutions that symbolize the belief.

----The extent to which the new belief is consistent with the actor's perceptions of reality as these are shaped by a). the actor's present beliefs; and b). the actor's experiences.

see how their traumatic past, early curiosity, oversees experiences, missionary fervor, socialist blending, and political penchant shape their values, beliefs, attitudes, and their understanding of their own roles in the Chinese system.

Traumatic past

As many of these IT leaders were born in the tumultuous years of the Cultural Revolution, many of them cherish an ideal to find new paths for the development of China outside the governmental directives. Their individual understanding and independent pursuit of China's future constitute an important autonomous dimension as leaders. This makes them *a bridge between China's past and future.* Most interviewees were born into middle stratum families neither highly privileged nor greatly underprivileged. Their parents were often professionals, such as physicians, scientists or engineers, who tided over the ordeals of the Cultural Revolution. The Chinese who suffered from the Soviet-style plans for rapid development of heavy industry and collective communes understand well enough the problems of a planned economy. The 1958-1960 Great Leap Forward raised people's hopes for national transformation through rapid industrialization of rural areas. Despite limited success in small-scale water conservancy and irrigation projects, the Leap failed to reach its goals. It decimated China's forests, experts were ostracized, and uneducated peasants were put at the service of utopian projects. Eager to redress the backwardness brought about by the Cultural Revolution, a new fire of aspiration for rejuvenating this nation was lit after the Gang of Four were dethroned.

Edward Tian (Suning), Vice President of China Netom, is a n example of a person born in the Cultural Revolution. His first name, Suning (literally "remembering Leningrad"), reminds us of the years when his parents first met in Leningrad in 1954 at the Forestry Technology Academy. He let us know a poignant history of his family when he was young, which indirectly, directed him to pursue his future career. It was a time when relations deteriorated with the USSR, his parents were assigned to work in desert areas of northwest China. He then lived with his grandmother, a middle school principal. Then when the Cultural Revolution hit, his parents were denounced as "cow's demon and snake spirit". They were forced to the countryside for "rehabilitation through labor". At the age of five, the Red Guards came to his grandparents' house to force them to surrender their collection of world literature and set them ablaze on a bonfire in the courtyard. Panic-stricken, Tian ran up to a guard and tried to rip a book out of his hands. "These are my grandfather's books," he yelled, but the guard knocked Edward to the ground (Sheff 2002, 25). "Now, with broadband (networks), nobody will ever be able to burn up the network. These changes will make that impossible, I hope..." It seems that the broadband network is a new solution for his own country.

Overseas experiences

Overseas education and work experiences constitute another important aspect of their autonomy. This generation was encouraged to be educated in the West in order to remedy the nation's brain drain. Giovanni Sartori argues that political change is less likely in societies composed of people who have never been exposed to alternatives to compare with existing life styles. "Innumerable people cannot prefer something to

something else because they have no 'else' in sight; they simply live with and encapsulated within, the human (or inhumane) condition they find" (Sartori 1993, 103). These idiosyncratic experiences may play a decisive role.[31]

Charles Zhang, the CEO of sohu.com, is a "poster child" of globalization. He is a role model for young Chinese who wish to go overseas, return home and accomplish big things in China's tumultuous e-world. By1993- 94 Zhang was finishing his dissertation in materials sciences at Massachusetts Institute of Technology's Physics Department, and in l994 he won a post-doctoral fellowship. He pushed hard for the Internet in Cambridge and at home, but always with (almost) accepting the limits. He told many people that his success lies in his psychological understanding and that his roots are in China. At that time to come back to China was outrageous for many people, but Charles Zhang was quite clear on what he was doing. Similar to Zhang's zeal to bring the Internet back to China, Michael Wan, Wu Jianping (Tsinghua), Qian Tianbai, Qian Hualin (CAS) were also well aware of the benefits of the Internet. "We were so young and full of passion, but we did not realize that we have chosen a difficult opportunity and became pioneers", Wan commented. Edward Zeng names his company "Sparkice", implying a notion of courage against hardships with the enlightenment from the Internet cafes.

Missionary fervor

Psychologically speaking, the IT leaders have a strong missionary fervor and want to help their own country out of backwardness and underdevelopment. Nevertheless, they are autonomous from both governmental ideals and the parochial pursuits of

ordinary people. The leaders promote the general idea of the importance of the global information revolution to his or her followers – a promotional leadership.[32] Some leaders stake out a particular position on one or two ICT issues (such as distance education, privatization, access, or universal service). When they returned from abroad they were 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. They wish to bring some advanced Western concepts into the Chinese practice. Gao Hongbing, former vice director of Informatization Promotion Office of MII from 1998, was in charge of designing informatizing strategies, drafting policies and regulations, and assessing indices of informatization. He told me that his trip in 2000 gave him an everlasting impression over the operations of telecommunications companies in the US such as Qwest, Globalcrossing, Level3, Exodus, and Abovenent. He found that these companies had only four-year history, but their market value is very high. He realized that a hierarchical industry has become horizontal and the commercial value is created out of it. For example, AT & T used to do all businesses from transmission network, switching networks and applications, but the quality of service was poor. That it now only provides service for the customers by linking the customer with one trunk line. The other branches of the trunk lines are subcontracted to other companies. Thus it intrigued him to set up his own company, ChinaLink, as a data exchange center (IDC). This is a clear example that how globalization directly affects commercial models in China (Yamin and Mingli 2001, 28).

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[31] For example, the development of Gandhi's doctrine of Satyagraha ("truth force", nonviolent resistance) was due to his unique experiences in South Africa an a strike in Ahmedabad in 1918. See Erick H. Erickson, 1969.

[32] This is where vision enters to link the call to arms with broader needs and goals.

Their views on globalization and the Internet also demonstrate their autonomous beliefs. Xie Wen, General Manager of ChinaLabs.com who got his Sociology Ph.D. at Columbia University, is an example of an overseas Chinese who attempts to construct a new world through his Internet enterprise. Now General Manager of homeway.com.cn, the largest online stock trading company, he said: "Email system began to integrate with the world and reconstruct the world outlook of the Chinese people. The Internet brings forth a conceptual change. 'Virtual economy' and 'digital divide' are in President Jiang's speeches". He regards overseas Chinese and multinational corporations as the "third force" to push the milestone changes of China's IT industry. Foreign capitals and venture capitals started to influence the Chinese official policies. Accompanying this, foreign concepts come into the Chinese side. These large joint ventures require China to open its market and loosen control. Once, the government had required registration of encryption and IBM led the protest against this registration. As a result the government had to cancel this regulation. These influential multinationals started to exert influences to get rid of irrational problems. At the same time, the Chinese officials are learning the new models, new social organizations and rules of games from other countries. For example, they organized several official tours to Bangalore at India to study their software industry. He was quite optimistic that the globalization would have a "contagion" effect on the Chinese political system.

Socialist Blending

In contrast, their political beliefs are more conservative and less autonomous from their beliefs on ICT development and future China. These leaders also are rare blendings

between their innovative pursuit of IT business and traditional revolutionary ideals. The individual experience also parallels the larger story of the merger of two worlds: one developed over forty years along state socialist principles and one introduced practically overnight from the outside. The experience of this group in the new system provides a window into the conflict of a new value system and a deep-seated political culture. The best example of this is Liu Chuanzhi, former president and managing director of Legend Group Limited (now renamed Lenovo Group Limited). The firm was established in 1984 with funding from CAS, and quickly rose to a domestic monopoly on the Chinese character input. With the CAS name behind it, Legend raised funds in Hong Kong to join the international OEM market in 1988. With more cash inflow from CAS in 1994, Legend took a lead in building the e-government infrastructure in China. When the firm started its global Internet strategy in 1999, it chose the ancient city of Xi'an for the opening ceremony, indicating its commitment to link even a remote area of China to the world (Hughs 2003, 821).

It is not surprising why Liu was promoted to the top office at Legend. Born in 1944, he was trained at the Military Telecommunications Academy in Shaanxi Province in 1961-67. After his research on military defense in Chengdu for a year, he moved to CAS in 1970, after his hard labor at Zhuhai during the Cultural Revolution. He was later stationed in the cadre section of CAS and appointed to the National People's Congress in 1998. In short, Liu and his Legend was cultivated by the state as a showcase of powerful Chinese firms to be competitive in a global market after China joins the WTO.

He sums up a vision of his firm's development from a small IT enterprise, through a national enterprise, to a global flagship corporation. He also uses militaristic

metaphors, such as moving through three stages of "speedboat mode, ship structure, flotilla mode" (Hughes 2003, 822). He stated his "Three Factors of Management"—organize the troops, fix the strategy, lead the team. His language is reminiscent of the revolutionary slogans imposed upon his generation by decades of political indoctrination.

> Lenin himself would not have blushed at the idea of building a core of leaders who share common ideals, unite co-operate and possess the strength to engage in "struggle". Mao might well have recognized the call to "fix the strategy" by calling on cadres at all levels to be aware of the general situation, consider the long-term, then break down the main objectives into particular tactics while always being able to adapt. Deng Xiaoping would have approved of "leading the team" by creating a special culture for the enterprise, consolidating the strength of its personnel, creating an atmosphere of professionalism, cultivating leaders and establishing a firm base for the future. He would also have approved of Liu's belief that his thinking is distinct from foreign management theory due to its emphasis on *collective leadership,* consensus building and the need to enter into a kind of contract with the firm to prevent the extremes that might arise from either individual leadership or factionalism (Hughes 2003, 822).

Liu envisions his enterprise as flotilla sailing out into the world and constantly renewing itself in a competitive global market. He is constantly seeking a balance between hierarchy and leveling in his strategy to build a globally powerful enterprise through trial and error. Especially noteworthy is his efforts to try to establish a workable relationship between collectivist ideals and individualism, and to maintain organizational continuity through different phases of strategic restructuring. Liu's case demonstrates a shift of management style, a new relationship between collective and the individual, a newly fashioned world outlook and lifestyle in today's China.

Political penchant

Even though many IT leaders wish for a more transparent and democratic government, they are quite cautious about their personal involvement and collective

action because they worry that social disruption would undermine their business interests. The interviewees showed a higher degree of political awareness, compared with a high degree of political apathy or disinterestedness among ordinary businessmen. Compared with their liberal views of economic reform, they are active and mature in their thinking on Chinese political reforms. They desire formal channels of complaint and acknowledge the irrationality of *guanxi* personal relations , yet recognize its critical importance for business. Generally, they call for a detachment from political interference into their economic transactions and decision-making, but are uncertain how this could be achieved.

Following an awareness of closer bonds, some IT leaders nevertheless desire political participation. But their way of participation seems to be fine-tuning governmental policies, not directly challenging it. The newly educated business elites in Communist countries, having never experienced political democracy, nonetheless came to desire it. Liu Dong, director of Beijing Internet-Networking Institute and who was educated in Japan, told me that in the Chinese tradition, an educated person is supposed to do something beneficial to society. Zhao Wenquan expresses optimistic views gradually better-off people would choose freedom.[33] But this is based upon a projection of an ideal picture, not reflecting the immediate reality. As Deputy General Manager of the Beijing Blue Focus Co. Ltd., a leading IT consulting company, he believes that since reform, there has emerging *nouveau riches* class. But a real middle class stratum has not yet emerged. He believes that a strong potential of social awareness of these well-off

[33] He is also deeply involved with the *Yabao Net,* China's eBay. Zhao was a political science major from Beijing University. In 1996, he and other people of *Yabao* Net set up the Beijing Blue Focus Public Relations Co. Ltd. It is a public relations service provider, which provides strategies for IT companies such as CISCO, EMS etc. as well as governmental relations.

people may be translated into concrete participation in political actions partly because this is a group of rich people who do not really enjoy all the privileges their wealth may bring. And there are also two important reasons for them to participate in politics—one is the Confucian tradition to encourage successful people to go to politics and the other is that the Party is adapting itself to changing demands of the people

There is a Confucian tradition for people to go to politics. According to an old Confucian proverb-- "a person who is good at studies should participate in politics", more and more business and social elites are recruited into the Communist Party, thus gradually changing the legitimacy of the Communist Party. Since Jiang's theory of "Three Represents", the Communist Party has become a party with all kinds of people. The Party has a *corporatist* strategy to set up institutional links between state and the IT entrepreneurs.

In contrast to the Western emphasis on individual freedom and rights, they stress political stability and viable institutions with stories from the specific Chinese historic and cultural background. One interviewee remarks the feasibility of Chinese democracy through existing frameworks:

> Some American friends told me that the Communist institutions might be dismissed as tools of an authoritarian system, institutions that in practice may be cynically manipulated to serve the purposes of the state. But China appears to be an authoritarian system that is democratizing, and these institutions could well form the framework of a democratic system if the processes and practices of these institutions continue to develop along some of their present trajectories. We have, in fact, already evolved to a point where we are far more democratic than at any time in Chinese history. The government has come to tolerate and even encourage far more criticism through "official channels", such as the "walk and visit" system, direct elections at the village and street level, surveys of people's concerns, public opinion polls, official complaint bureaus, letters to the editors, wider media coverage of the miseries of the lower strata of society, and discussions in work unit meetings. [34]

[34] Interview by the author in Beijing on December 20, 2002.

In this regard, they are not naïve enough to transplant Western democracy to China.

Summarizing the findings, these leaders have fresh and autonomous ideas on future China's development. They cherish a revolutionary zeal to make China catch up with advanced countries in the world. But politically speaking, they are still conservative in pushing forward political changes. They are not, and do not intend to be, harbingers of political development in China. They are optimistic that with the introduction of the information revolution, the current regime will be more transparent in its decision-making and responsive to both global pressures of marketization and domestic demands. Yet they are quite cautious of possible turmoil that might entail their loss of business and create labor unrest. In addition, some of these IT leaders, like Liu Chuanzhi, were reminiscent of the collective rulership under Mao. Therefore, they feel comfortable with the current regime even though they believe this political regime needs reform. Therefore, their autonomous beliefs do not necessarily translate into concrete political behaviors. The following part will further elaborate on their personal ties with the state which create dynamic changes in the ICT reform without breaking the stasis of the hierarchical state-society relationship.

The Symbiotic Dimension: IT Leaders as Bridges

These IT leaders became important bridges to help the Chinese government promote informatization through their skills, attitudes, knowledge, experiences, and ethics fitting together in a mutually reinforcing "package" (Wilson 2004b, 860). These leaders believe that the Internet can transform the Chinese economy toward greater

efficiency, bolster its national security and simultaneously shore up the administration of the country, through a process termed "informatization" (Lovelock 1996).[35] Their symbiosis with the state lies in the normative perspective—the process they introduce new concepts to political elites and formulate new rules for the IT re-regulation. They realize the importance of state building in China. These leaders try to persuade the Chinese officials that high-tech and science, especially information technology such as the Internet, will lead China through prosperity and make China a strong power in the global economy. Peter Lovelock argues that the Internet became an essential component of the Chinese government's efforts to use information technology to decentralize decision making while continuing to control it centrally (Lovelock 1999, 19 35). In a March 2000 speech the Chinese President Jiang Zemin said, "Internet technology is going to change the international situation, military combat, production, culture, and economic aspects of our daily life significantly" (Lovelock 2000). The Chinese leaders seem to agree that, "for better or worse, Internet capability among nations has become a key element in calculations of political power, diplomatic power, and economic competitiveness" (Franda 2002, 4).

Active Lobbying

An important aspect of this symbiosis is to introduce this technology to the government for stronger national administration. For example, Wang Donglin, Chairman and President of the Beijing Scholar Corporation, contracted with the government on the

[35] From the infrastructure power, the Internet is deemed by the Chinese leaders to promote the administrative efficiency as well as check the counter-centralization local forces by streamlining management (i.e. Golden Projects) and providing prompt and adequate information for the Central government.

infrastructure of the e-government and helped them devised feasible strategies through direct business relationship. Wang is also Deputy Board Chairman of the Beijing Zhongguancun IT Association, General Panel of Standard E-State affair. On the one hand, he is an active contractor with the state on e-government, and on the other hand, he is willing to contribute to the building of a strong network of IT entrepreneurs of Zhongguancun. Ultimately, IT leaders use active lobbying and form coalitions to influence state policies.

These leaders make numerous attempts to try to persuade political elites to accept basic concepts of ICT reform— from monopoly to competition, from centralization to decentralization, from public ownership to private ownership, and from domestic operation to foreign ownership— to became accepted and ingrained in the mind of the Chinese political elites and ordinary people (Wilson 1998). The role of active political lobbying by these IT leaders is also exemplified in David Sheff's book *China Dawn* describing how Edward Tian persuaded Premier Zhu Rongji to adopt policies in favor of the IT entrepreneurs. He demonstrated a live videoconference, showed a sample of real-time IP-based television piped over the CNC network, and explained the limitless potential of bandwidth in Hangzhou.

> 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 (Sheff 2002, 268).

Zhu was quiet, intently listening, signaling that Edward should continue, "Premier Zhu," he says, "You can help this dream become realized in China by clearing the way

for three things to happen." First, he asked Zhu to reform the regulatory environment. Second, he asked 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 requested 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 said, "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 looked around and back to Edward. "I think we can do what you need." The premier extended his hand. "Thank you, I wish I could stay longer. I hope we have the opportunity to meet again soon" (Sheff 2002, 268-9).

Coalition Formation

These IT leaders forged networks and coalitions by themselves. Coalitions are groups of people who join together to achieve a particular purpose, usually a political one. The *big bang* of external forces and s*mall bang* involving internal actors have important consequences for the rapid diffusion of the Internet in China. There is closer and closer cooperation between the public, private, research and NGO leaders. They convince political leaders and social actors to obtain and deploy valuable material and human

resources that support legal, regulatory, organizational and other changes necessary for diffusing the information technology (Wilson 2004b, 859). Like Ghana, Brazil, India, the U.S. and other countries, they managed to work well across different institutions. They seek allies to push forward the liberal diffusionist agenda. In Brazil in the mid- to late-1990s, a small group of innovators actually called themselves the "gang of four" (Wilson 2004a). Their social network helped them design an array of policy innovations in the IT sector in Brazil, working across university, think tank, private and government institutions for two decades. In China, they are quite aware of this kind of communication, "*goutong*" (to use Ms. Yan Baoping's word, Director of CAS's Network Information Center).

In the introductory phase of the Internet we witnessed a close cooperation between academia and government. In the anti-monopoly phase, a lot more activities are found between "insiders" in the government and "outsiders" in business circles. During the competitive phase, IT entrepreneurs are more mature in pushing forward institutions and rules for regulations together with skilled liberal officials. Finally, in the consolidation stage, civil society organizations and NGO groups start to make the Internet an important platform for online communities and work out solutions for the "digital divide".

In the introductory phase, we find the symbiosis between academia and government. The early Internet networks were constructed by people who were technically trained and occupied overlapping professions in different institutions, thus the consensus on the list of the top three innovators was remarkably consistent. They were built among scientists and researchers such as Prof. Qian Tianbai, Dr. Hu Qiheng, and

Prof. Qian Hualin for the interconnection of the Internet within China and with the rest of the world. Individuals in the Information Network Center of the Chinese Academy of Science link with universities like Beijing University and Tsinghua University, special high-level bodies like the State Informatization Office, and international groups like the World Bank and US National Science Foundation. These early leaders introduced the Internet and rudimentary concepts of interconnection to help people to tap into the tremendous opportunities of the Internet for the country. On September 20, 1987, Prof. Qian Tianbai sent the first email from China "across the Great Wall and communicated with the world", and so began the Chinese Internet diffusion. At that time, Prof. Qian was head of the Chinese Academic Network (CANET), the first computer network in the country, and Prof. Qian is almost universally viewed as the "Father of the Internet" in China.[36] Then, with the support of Dr. Hu Qiheng, this initial academic enthusiasm spread from researchers gradually into government circles.

In November 1989, the Demonstration Network for Education and Scientific Research in Zhongguancun Area (NCFC, named by the World Bank) was formally launched in November 1989. NCFC is a high-tech information infrastructure project of the "Key Subject Development Project" of the World Bank, and supported by the State Development Planning Commission, CAS, the National Natural Science Funds and the State Development Planning Commission. The project was charged by CAS, and was jointly implemented by Peking University and Tsinghua University. The chief goal of the project was to consummate the construction of the NCFC backbone network and the college networks through technical cooperation with Peking University, Tsinghua University and CAS.

[36] http://www.cnnic.net.cn/internet.shtml

Later on November 28, 1990, Professor Qian Tianbai formally registered .CN - the country code top-level domain (ccTLD) of China in Stanford Research Institute's Network Information Center (SRI-NIC), and initiated the international e-mail services under .CN. From that day on, China obtained its own identity on the Internet. In June 1993, experts at NCFC reiterated China's requests for being connected to the Internet at the '93 INET Conference, and discussed such issue with the global Internet communities. After the meeting, researcher Qian Hualin attended the CCIRN (Coordinating Committee for Intercontinental Research Networking) Meeting, and won the support of majority participants in favor of bringing the Internet connection to China. The conference gave a great boost to China's connection to the Internet (*Appendix II)*. In the mean time, the government also sent out delegations or envoys to the United States to understand the impact of the Internet. Wang Daohan, the mentor of ex-President Jiang Zemin, entrusted Shen Jian to conduct a thorough survey on the information technology and American society. Shen Jian invited Gao Hongbing, an official at the Office for the Promoting Informatization, to visit the US and wrote a report to the senior leaders.

That article had three parts: The Sino-US Comparison of the Information Revolution, National Security under the Information Revolution, and the Government Strategies of the Information Revolution. He claimed that, "the industrial economy is changing into [a] digital economy." He argues that

> In international relations and international politics, during the transition from a bipolar world to a multi-polar world, information revolution will influence comprehensive national strength, national security, and the combat capability of national defense and the military. The democratic values of the globe will be spread at an accelerated pace (Shen and Gao 2001)

They also warn that the Chinese economic structure and social system is under the commercial model of industrialization, and is unable to cope with the impact of informatization. These were encouraging news that China must catch up with the information revolution in order to be advanced to a good society. When they returned to Shanghai and deliver the report to Wang Daohan, he greatly appreciated it and sent to the Jiang Zemin, the President[37]

In the commercial phase, the cross-sectoral symbiosis encompassing the government officials, private entrepreneurs, NGO leaders, and researchers are vital for the ICT diffusion. These fluid networks intersect with the more long-standing institutions in a variety of formal and informal ways. In China, the initial networks were relatively small. These people got to know one another when searching for advice on technical matters or attending promotional events. But they are always the work of both insiders and outsiders (those inside the government or outside the government). "Insiders" such as Minister Hu Qili (MEI) became known as bull dogs that aggressively pushed for competition and diversification.

Hu Qili was a powerful and prestigious member at the politburo before 1989 and a strong ally with pro-reform Party Secretary-General Zhao Ziyang. Many people in the ICT circle call him the "first reformer of the Chinese telecommunications sector." From 1982 to 1987, he was director of General Office, a member of the Secretariat and a member of the Political Bureau of CPC Central Committees. Then he became a powerful member at the Standing Committee member of the Political Bureau as well as Secretariat member of the CPC Central Committee in two years. When he was made the Minister of MEI, He successfully pushed the themes such as "informatization takes the lead on

[37] See detailed case study in Chapter 3.

China's industrialization". He organized experts, especially He Feichang, Director of Telecommunications and System Equipment at MEI, to study the phenomenon of China's telecommunications network. This group found that the 1.2 billion Chinese have a total number of telephones equal to that of Tokyo. In some places, the installation fee is as high as 6000 yuan (800 usd), thirty times that of New York City. The telecommunications service is poor and supply can hardly meet demands. He proposed several changes to senior Chinese leaders. First of all, there were already several mature telecommunications networks for railways, electric power, and military. The telecommunications capacity even exceeds the networks from China Telecom. Once these networks are adjusted, at least one quarter of these capacities can be transformed for civilian use. However, the civil telecommunications are monopolized for years and the public special lines cannot be excluded from civilian use. This is great waste of resources. Second, through their investigations of more than eighty manufacturers over eight provinces and cities, they heard that without a competitive environment and equal treatment, the national manufacturing industries had no hope because their life lines are controlled by China Telecom. Third, even though there is a huge market for telecommunications equipment, the domestic equipment only accounts for 30% of consumption. China's development and manufacturing capability lags behind developed countries for at least fifteen and twenty years. Much of the key equipment has totally different standards, causing a lot of confusion in the domestic market, even jeopardizing national security. Thus the Party committee of former Ministry of Machinery and Electronics entrusted Zeng Peiyan and Hu Qili to break the monopoly of China Telecom.[38]

[38] This is a "structural leadership" which seeks to redefine the rules of economic structures to make

At the same time, "outsiders" such as Edward Zeng help train the people from MII, officials start to learn about the Internet. He set up the first internet café, and later came the first physical framework , oicq (instant messages), email and first IP service provider. From then on, there emerged a macro platform for visions of a connected and developed China. These networks reflect the incentives for individuals encapsulated in their particular institutions to break out from their organization and cooperate across them to form mutually supportive networks.

The anti-monopoly phase, was a fluctuating mix of top down and bottom up initiatives. A greater influx of entrepreneurs, scholars, and liberal officials started to devise strategies to destroy the monopoly of China Telecom. Thus during this anti-monopoly stage, we see "Quad" cooperation work well, first between businessmen and governmental officials, then move to governmental officials and academic scholars. Economic and telecommunications experts wrote directly to President Jiang Zemin to open the telecommunications market and introduce competitive mechanisms in the telecommunications sector. These scholars include Ma Bing (senior consultant of the Development Center of the State Council), Zhang Xun (Professor, Shanghai Jiaotong University, senior commissioner of CAS), Feng Zhongxun (Professor, Tsinghua University), Zhang Fuliang (President, Chinese Academy of Electronic Design), and Lai Guozhu (Secretariat, China Society for Electronics, Telecommunications Branch). Later even municipal government officials such as Guangdong, Shandong, Jiangsu, Liaoning, Beijing, Shanghai and Guangzhou, People's Bank of China, Daqing Oil Fields, and China International Trust and Investment Bank (CITIC) offered explicit support for breaking

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information infrastructure fit current national needs. Such rules include whether ICT ownership will be a public or private monopoly or even in an open market.

the monopoly. During the same month (September 1993), Hu Qili directly reported to Premier Li Peng in order to alleviate the worries about China Unicom as a "Pandora's Box". On December 14, 1993, the State Council formally approved establishing China Unicom to break the monopoly of China Telecom in the form of State Decree No. 178 (a lucky number that sounds like "all get big fortune"). Thus China Unicom became an independently operated limited liability company that can operate long distance telephone lines, wireless, and value-added services. The preparatory committee of China Unicom composed three vice ministers: Lu Xinkui (MEI), Lu Yanchang (Ministry of Electric Power), and Guo Lin (Ministry of Railways).

In the competitive phase, these coalitions also promoted the institutional performance of the state. At the same time, the relationships among leaders become denser and contacts more frequent. People understood the ICT issues from grander national strategies rather than narrow departmental interests. The first example is that some leaders helped bring about a revitalized State Informatization Office in 2001. According to Jiang Qiping, chief editor of the *Internet Weekly*, many people opposed the downgrade of the State Informatization Office into the MII in 1998. From a state level sector to a department under a ministry, there is a fall of seven hierarchical levels. Song Ling was a leader of this group. She argued against Minister Wu openly and bypassed his approval by writing directly to the Premier Zhu in the name of a Party member. Then many other people raised this issue to Premier Wen Jiabao. But according to Premier Wen Jiabao's note: "The Ministry of Information Industries may not be able to shoulder the task." As a result, the Chinese government realized the importance of information technology not solely as an industry, but as a key instrument to restructure national

economy and streamline effective governance. On August 23, 2001, the State Informatization Leading Group was reestablished. Premier Zhu Rongji chaired the group.[39]

They also helped institutionalize principles of "competition and decentralization", buzzwords in the Chinese telecommunications sector. A major achievement of their cooperation is the establishment of new competitors such as China Netcom against the monopoly of China Telecom. With his success at AsiaInfo in 1993 as a system integration and Internet software company, Edward Tian gradually gained the trust of the Chinese government. When he was back in China in 1995, he helped the government construct the over 100 major networks, which became the backbone for the modern networks of China. Later, he was entrusted by the Chinese government to set up China NetCom, whose major shareholders are the Ministry of Railways and the Chinese Academy of Sciences. This company gained momentum with the support of Jiang Mianheng, the son of ex-president Jiang Zemin. With many young talents inside and outside the company, Tian successfully helped bring about the breakup of China Telecom.

During the consolidation phase, they form horizontal ties among interested groups of people from public, private, academia, and NGO groups. Non-governmental organizations step into the vacuum of emerging issues where the government has no control, or weak regulation, like human rights and environmental issues. They branch out to link the Internet systematically with the current economic environment, seek political transparency and support, attempt to change rules, and crave for a knowledge society. Sometimes they created forums of like-minded people; the founding of China Internet

[39] Personal communications with Song Ling on February 5, 2004 in Wanshoulu of Beijing.

Society is an indicator of group cooperation.[40] Some journals formed close-knit networks of advocates, some of whom came together to create a new publication that would serve the community. Individuals were socially aware of each other, met occasionally on IT conferences, but did not create an autonomous separate group outside their institutional homes. These are the people who were similarly situated in a variety of institutions and networks, who held common values, pursued common goals, used similar strategies, and acted in parallel ways to achieve their goals.

Some IT leaders work their way up through revolving doors—sometime they work at academia and later they become officials. It is commonplace to see these leaders shift from one position to another, e.g. Gang of Four in Brazil. Ivan Moura Campos moved from National Council for Scientific and Technological Development (CNPq) over to the federal Ministry of S &T, and Eduardo da Costa shifted from Softex to CNPq (or more accurately held both portfolios simultaneously) (Wilson 2004a, 137). In China, Ouyang Wu quitted his job at CASS and went to work for the State Informatization Office, and Jiang Qiping abandoned his role as an official at MII and went to work at CASS with Dr. Wang Xiangdong. They also publish independent works and books on the ICT diffusion and China's "New Economy" to enlighten people. Wang Xiangdong was also collaborating with Jasmine Zhang writing about the emerging "new economy" in China, a cooperation between an entrepreneur and a scholar. According to the "Report on China's 'New Economy'", promulgated by Genesis Capital Co., Ltd., and co-authored by Zhang Shuxin and Wang Xiangdong, they define the "New Economy" at the Internet

[40] On May 25, 2001, the Internet Society of China (ISC) was founded with the approval of the Ministry of Civil Affairs. It was established under the direction of the Ministry of Information Industry (MII), and was formed by over 70 relevant organizations, including domestic ISPs, ICPs, facility manufacturers, system integration business, academies and educational institutions.

era as "an economic entity that is under the background of information revolution and economic globalization, characterized by the development and application of the Internet and its related industries (e.g. e-commerce), depended on knowledge and talents, with its goal to improve the operating efficiency of macro and micro economy" (Wang 2003, 422).

During this period, we witness a close *symbiosis* between the state and these IT leaders. As the Chinese government crosses the river of reform by groping for the stones, it is wondering who can provide the "stones". These IT leaders are willing to be partners of the state, promoting regime goals of economic growth and political stability, but first they have to undermine conservative norms. They make use of *guanxi* to erode the hard-line ideology to achieve four balances. The Chinese government depends upon the IT leaders to provide it with clues for reform and modernization. Through cooperation, IT leaders gradually gained legitimacy within the government and have their voices heard and accepted by the political elites.

The Negotiating Dimension: A Constructive Process

These IT entrepreneurs and advocates have their own visions and capacities, but they cannot operate in a vacuum. Elite acceptance is key to a successful national IT policy. Thus, the approach for most political elites is to first rely on their traditional way of understanding—a method for national interest or economic calculation, e.g. to strengthen China through technological innovation. This is the first push for them to welcome the ICT diffusion in China. The Chinese leaders *instrumentally* believe that the Internet can advance their centralized control and the power of Chinese communists.

This is because a lack of information is the one of the central problems for the central government. Learning became vital for people to understand the full potential of this new technology. As ex-Premier Zhao Ziyang stated in 1983, "The new technological revolution or information revolution… may help China skip over some of the stages which have been experienced by other developing countries" (Hamrin 1990, 213). Chinese leaders gradually came to view IT as part of the necessary phases of political and economic development.[41] Then while they open their mind to a variety of expert advice, they are engaged in constant *communicative* understandings of China and the World. And the last phase becomes a natural process of the *internalization* of international norms of ICT diffusion and institutionalization for competition and decentralization in the ICT sector. This is a socialization and construction process, but once initiated, there is a "ratchet effect"—once liberal norms of competition, decentralization, and privatization entered into the dialogue of political elites, they gradually changed people's penchant and choices, and liberal practices will move forward, never coming back.

These IT leaders attempt to elevate academic or business interests to a national strategic restructuring level. They function like think tanks, sitting uneasily halfway between government and civil society. They can also articulate the instincts of dissidents in the language of the academy, and suggest ideas that bridge the gap between instincts

[41] One example of how they change the instrumental calculations of the Chinese policy makers is through the installation fee. The pretext for China Telecom's high installation fee (around 800 USD in Beijing) was that such amount was used to reinvest in the telecommunications business. Therefore, China Telecom claimed it did not put the money into its own pocket. Jiang Qiping told me that one IT expert told Premier Zhu the way to rebut Minister Wu's claim to use the revenue from installation for investment in the telephone service doesn't make sense. Premier Zhu Rongji cleverly told Minister Wu, "Since you used the money to return to the state, thus you know there was flood in China, why not use the installation fee to help those afflicted by the flood". The reason is that since everyone talks about national interests, there should not be any departmental interests. Thus Minister Wu had to back down from charging the exorbitantly high price of installation fee (interview on April 12, 2004 in Beijing by author, and this story cannot be verified).

for reform and policy. Thus during this period, leadership is essential to appeal to others to convince them to follow a route to a particular set of goals.[42]

As in the case that eight private or foreign invested ISPs were licensed in 1995, these policy initiatives represent a trying period of cohabitation as a response to uncertainty. In the face of the Internet challenge, political elites, the MPT, China Telecom and the ISP entrepreneurs all engaged in a learning process to understand policy and legal issues raised by the Internet. The interactions between ISP entrepreneurs such as Jasmine Zhang, Michael Wan, Charles Zhang and government officials, the Vice Premier Zou Jiahua and the state in general, was a social learning process in which both sides participated. Through face-to-face dialogues, they were engaging in learning collectively about "what to do." The seminars, symposia and meetings provided forums for exchange of information and opinions, precedent -seeking and initiation of new policy ideas. The ISP's direct bottom-up policy activities to reduce leased line charges led to the institutionalization of public pricing hearings. It significantly broke up China Telecom's monopoly over the long distance service.

These IT leaders gradually helped bureaucrats of MPT (MII) realize that open markets were necessary and inevitable. Thus they made ISPs' market entry possible. In addition, frequent overseas tours by these officials provided first hand opportunities for gaining insight of the practices in advanced countries. These advanced countries serve like “role models” for the anti-monopoly initiatives in China. Under these circumstances, policy-making was more of a social learning process. During ISP licensing, the bureaucrats of the Beijing Telegraph Bureau exercised discretion to issue licenses to eight ISPs that had direct foreign investment. Except their personal passion for the Internet

[42] *Personal charisma* contributes to their persuasive power to achieve their goals.

development, the new environment also contributed to this courageous and unusual discretion. In this new environment, a market-oriented approach became a dominant concept. However, they were aware of evolving policies as a natural and understandable response to the new environment.

Finally these government officials internalized the norms of competition and made an epoch-making policy that allowed the first generation of ISPs to enter the market was MPT's open market notice issued on September 14, 1993. It was the first attempt of China's effort to open the MPT monopolized telecommunications market to non-MPT entities. In September, the MPT opened nine telecommunications service markets to non-MPT enterprises, including radio paging, 800 MHz radio dispatch, 450 MHz radio wireless, VSAT (very small aperture terminal, a satellite technology), electronic data exchange, e-mails, videotex, telephone information, and computer information service (Cao and Liu, 2170). The notice established two regulatory methods: licensing and tariff filing, and two categories of services: telephony service and information service. This telephone/information service model was after the basic/enhanced service model initiated in the U.S. in the 1970s. This is the first attempt of IT leaders to persuade the state officials to accept private participants in the ICT sector.

The Parasitic Dimension: Patron-Clientelism and State Corporatism

Like other developing countries, the politics of ICT in China used to be the politics of patronage. It meant knowing senior people at the relevant ministry, relying on friends at the state-owned telecommunications company, and earning political patronage at the local branch office. Therefore, patron-clientelist or corporatist ties are important in

Chinese political culture. The state devise networked control over interest groups and society, and at the same time, members of these groups receive benefits for their loyalty by having greater ability to get their voice heard at the top level or decision-making process. However, their ties are not so strong as in the Western sense of patronage.[43] Even though there are associations like the China Internet Society and China E-commerce Associations, these associations are still heavily controlled by the state, not only their personnel but their budget as well. These associations sometimes help study and implement state policies. Such representative organizations serve a function for the regime by pre-empting the emergence of autonomous organizations. They do not really play an intermediary function between these IT leaders and the state.

In contrast to the totalitarian image of the Party, there are positive incentives offered by the state for compliance with its policies. This view is expressed by Andrew Walder's term "Communist neo-traditionalism"--- "the notion that, from the establishment of a Communist regime, political loyalty is rewarded systematically with career opportunities, special distributions, and other favors in communist societies are uniquely able to dispense" (Walder 1986, 6). Thus this is a clientelist system in which public loyalty to the party and its ideology is mingled with personal loyalty to the party branch officials and their clients. There are many cases were the IT elites seek favor from the governmental officials. They depend on the state to provide them with

[43] Bingshu from HiChina Web Solutions Ltd.,, argues that the reason that clientelism prevails is that, , China's IT entrepreneurs have not accumulated enough wealth to have direct and independent political impact through formal channels. Most of the fortunes and revenues are still from traditional Chinese industries. For example, PCauto Automobile Service Corporation *(yuefu)* hires thousands of employees while HiChina has only 200 employees. There is a huge gap of fortune. Therefore, wealth still predetermines the influence of the China's IT leadership. HiChina Web Solutions (Beijing) Limited ("HiChina"), formerly known as Civilink International Information Technology Co Ltd. (Beijing), is the leading web hosting and domain name services provider in China, having registered over 600,000 domain

favorable projects or support. For example, Wang Donglin sought favorable contracts with the state for e-government projects. He also voiced the frustration with the growing business elites. But politically speaking, they are fragile.[44] The real problem for the Chinese middle class is that there is no growing platform for the exercise of group power. Without an organized power, they cannot be an effective force to challenge the despotic power of the state.

Though many believe that a rational and legal institution is vital for China's future, *guanxi* is still vital for their daily business. *Guanxi* is essential to get through their career, from getting a license or renting a house, to get governmental orders and all sorts of business transactions. To understand the critical importance of developing *guanxi* through doing favors, giving gifts, and cultivating backdoor, one would have to experience frustrations of bureaucratic "red tapes" that entail collecting countless stamps or documents, standing in line waiting for yet another approval, only to hear that it is "not convenient" to deal with the issue at the moment or, more simply, that "I have to report it to the senior leaders for approval." One IT entrepreneur expresses this:

> You have to constantly invite those leaders from MII or Ministry of Railways to dinner, to overseas and domestic field investigations, and to travel and visit the Western companies. Sometimes you have to pay their children to go abroad to study. Even sometimes you have to give equipments to these ministries for free trial to gain their confidence in your product in the hope they would buy them in the future and regard you as a reliable partner. Who knows how much *guanxi* would cost, but that is for the sake of business.[45]

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names and currently hosting one fourth of all the web sites in China (interviews by author on August 2, 2004).

[44] There are many examples that business elites are put in jail once they touch the "thin red line" of the regime control. Yang Bing, a realtor who developed "Dutch Village" in northeast China, was sentenced to jail and he shouted at the court "It is a political conspiracy." However, he believes he can become the future Chinese president, just as Nelson Mandela Yang Rong, CEO of Huacheng Automobile Inc., was forced into exile.

The Amphibious Dimension: the Non-critical Nature

These IT leaders' amphibiousness stems from their work in both the state infrastructure and civil society. Actually, this word has connotes their dual character of being caught between a desire for a transparent and liberal political regime and a pragmatic dependence on supportive personal ties in the government to serve their self-interest. However, these two meanings are intertwined with each other.

This suggests their *dual character* – improving the infrastructural power of the state while they simultaneously help the community via the Internet. Some of them quietly encourage civic engagement, but this is at best a subtle challenge against the despotic power of the state. They help encourage online communities to vent their pent-up anger against the monopoly of the Communist Party. For the sake of their business interests, they dare not directly challenge the state power. Thus they belong to the "non-critical realm" of Chinese politics because they dare not directly pressure the government to encourage public involvement in the selection of political leaders and accountability over state policies and actions.

They desire a transparent and responsive political regime but also a dependence on this hierarchical system of personal ties to serve their own self-interest. This finding is in tune with the historical role of the Chinese business elites. The essence of the merchant-state relations pattern was "neither wholly autonomous nor state-dominated but instead sat, Janus-like, between state and society, and at times even blended socially with the official class and carried out "public" (*gong*) works" (Pearson 1997, 44). According to Duan Yongchao, a chief editor of China Computer Users affiliated to CIID Consulting Group, many people in IT (especially the run-of-the mill IT elites) are much more

[45] Personal communication in Beijing on July 20, 2004 by author.

interested in selling their equipments instead of concerning themselves with the public interest. There are many conferences each year held by MII, but those entrepreneurs are much more interested in promoting their own image as an economic entity. Duan told me, "There is no leadership in its true sense in China. China is still centered on feudal system of governance (hierarchy or *guanbenwei*)." In his view, everyone has to obey Communist fiats or orders to avoid risks. Their interest is the market shares of their telecom products.

Edward Zeng (Qiang), CEO of the Sparkice (ISP), is an example of this amphibiousness. His effort to push forward the state acceptance of the Internet café and e-commerce is also tangled with his motive for show-biz to attract business. Thus his initial contribution for political transparency and state responsiveness ended up with political shows for his self-image and business interests. Like other IT elites, Zeng gained his reputation as a successful bridge to introduce Western concepts to top political leaders. He first relied on his personal ties to promote state acceptance of e-commerce and institutionalize their support for the new technology, then spread his Internet cafes for social communities. His father is a doctor and his mother an architect. He got an MBA after he completed his undergraduate studies in applied mathematics from Tsinghua University in 1985. Then he worked for the State Planning Commission, where he gained personal contacts with senior Chinese leaders and served as a policy advisor. He helped establish a national macro-economic database, which intrigued him into information technology (Wilson 2004a, 246-251). He then moved to Canada to study at the University of Toronto, his first overseas stint. After gaining a master's degree in finance in 1990, and then working briefly for the Canadian government as a statistician,

he created his own company to link Canadian business with China. When he returned to China in l995, he set up Sparkice Information System Engineering Co. Ltd. He is an example of an overseas Chinese who wanted to make money but at the same time claims to help China join the new information and communications revolution. The individual education both at domestic and foreign universities combined with work experiences both at home and abroad prepared Zeng with a better insight to build up China's information infrastructure with a keen eye. He later created the first cyber cafes in China and offered lessons to senior leaders quite instrumental for the information revolution in China.

His allies were sufficiently wired to help protect him from the political-fall out for sharply criticizing the MII minister. Zeng has parlayed his knowledge of Internet matters into much appreciated advice to senior national political elite who are charged with setting national ICT policies. This apparently strengthened his networked "human capital" with the people who make the Internet rules. This positive contribution to China's ICT diffusion does not continue with his efforts for more political transparency and state responsiveness. After he is satisfied with political influence both at the state and society level, he is much more interested in his business instead of more political pursuit of liberalization. He then started the first cybercafes to provide individual service. With his efforts to construct alliances with new and existing social networks within ministries, SOEs, and transnational corporations, Sparkice was chosen by MII to be a state e-commerce pilot enterprise in May 2000. He even demonstrated to President Clinton his business model as a show of a successful ISP. Gao Hongbing later told me that he liked all kinds of "shows"—inviting people to exquisite dinners, summer resorts, and grand hotels. In order to attract more influence, he even invited foreign businessmen

or officials to a luxurious compound at the Fishing Terrace (Diaoyutai) State Guest House, which costs him more than 180,000 US dollars. He spent most 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. Thus we can infer that his ambition for a connected and transparent China is mingled with a motive for self-projection as a national savior or role model. Thus his political ideals end up serving his business interests.

Political Impact and Limitations of Their Efforts

In this chapter, I consider the possibility that these IT leaders' pressures yield more limited yet important changes in the discourse and behavior of the regime. These include—(1) placing norms of competition and decentralization on the regime's agenda; (2) causing the regime's adoption of a re-regulatory discourse; (3) changing monopolistic policies; and (4) changing political institutions, such as the creation of the State Informatization Office. The first two types of change do not result in any immediate improvements in ICT diffusion; however, it would be a mistake to dismiss them as insignificant. They place the current regime at the top of a slippery slope that can ultimately result in gradual change as these IT leaders hold the regime accountable for its statements (commitments) and regime officials implement some reforms (e.g. price hearing, transparent policy making process) to avoid charges of hypocrisy and empty promises.

But these IT leaders have *not* evolved into an independent social class against the despotic power of the state, although they are conducive to certain degrees of state

responsiveness and public contestation. They are characterized by their *amphibiousness* —they strive for transparency and openness at the state level for ICT diffusion, but for the sake of their business, they rely to personal ties with government officials for favorable deals. They do not have coherent ideologies on politics, nor do they have independent organizations that can serve as formal channels to reflect their interests to the state.

In addition, the *causal mechanism* of their impact upon the state is not so direct. There are so many intervening variables that may impact the state that the IT leaders might have a small proportion of that influence. There are lots of things being whispered in the party leader's ears from different people and groups. Who he decides to listen to changes from one point in time to another. It depends on shifting political forces, the political leader's understanding of the economic situation or other domestic needs, the changing international environment, his judgment on the quality of advice, or even his whimsy (Fewsmith 2003, 152). In addition, there are many different decision-makers and there appears to be considerably more consultation and bureaucratic input in decision making than in the past. The constellation of people and organs giving policy advice varies over time. Some people or organizations seem to have greater influence than others. Their role in political change still needs more studies. However, this does not mean that the study of leadership is meaningless. It is leadership that plays vital roles at a crucial point when market forces have driven political regimes to adapt to rising social demands for competition in the ICT sector. Combined with vision, craftsmanship, and courage, these IT leaders have made bold and wise attempts to make ICT diffusion possible.

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Political changes in the ICT sector do not have a unitary meaning but imply these three dimensions: establishing anti-monopoly *norms* governing the ICT diffusion, restructuring basic *institution*s on national information infrastructure (NII), and strengthening the *channels* for civic participation.[46] There is the possibility that these IT leaders' pressures yield more limited yet important changes in the discourse and behavior of the regime. By systematically studying their autonomous, symbiotic, parasitic, negotiating, and amphibious dimensions of these IT leaders, I find that these IT leaders represent an inchoate pluralist force penetrating state and society for a new direction of China's development.

This does not mean, however, that increasing activities of the IT leaders are a functional equivalent of rising contestation in the political arena. These IT leaders have certainly *not* evolved into an independent social class fighting against the despotic power of the state, even though they are conduits for bringing about a certain degree of state responsiveness and public contestation. In short, these proto-capitalists are not anti-Communist. First, they worry that radical political reforms might entail social upheavals. And because they seek economic stability, they are likely to disfavor movements that are likely to cause political strife. Second, they have personal ties that can link them with governmental offices to attain favorable business deals. Therefore, they rarely rely on formal channels to impact the state. Relatedly, the state has established corporatist links to pre-empt their independent pursuit of political aims. Yet, these IT leaders serve as catalyst for political change precisely because of their active engagement in the design

[46] Insights from Minxin Pei, pp. 69.

and implementation of state policies. Thus, they have an **amphibious** character[47]: on the one hand, they attempt to strengthen the power of the state by actively participating in the process of designing new rules and institutions governing ICT diffusion and do not challenge the fundamental legitimacy of the Party; on the other hand, ICT diffusion decentralizes power and moves it from the state to private individuals, where business firms and other groups can independently control resources away from state control. They help create some of the necessary conditions for political change, but they are not sufficient conditions themselves. Their relationship with the state can be summarized as neither close nor distant, but instead depends on their business needs and visions of China's future.

[47] According to *American Heritage Dictionary*, "amphibious" connotes a meaning of a mixed or twofold nature.

Chapter 3. Leadership in the Public Sector: Building the National Information Infrastructure and Breaking up China Telecom

In this Chapter, particular emphasis is devoted to the IT leaders' visions and their craftsmanship in devising strategies to break up the monopoly of China Telecom and their courage to fight against incumbents at the public sector. These leaders adopted a complementary strategy of "guerrilla attack" wherein some IT leaders "infiltrate existing political institutions to alter their purposes and procedures, while others hammer on the doors from outside" (Wilson 2004a, 140). Like their counterparts in Brazil, Jasmine Zhang and Michael Wan (Carlos Afonso and grassroots NGOs in Brazil) hammered from outside, while Hu Qili, Peng Peng, and Gao Hongbing (like Ivan Moura Campos in Brazil) scaled the wall from inside. In this way, they successfully battled against the monopoly of China Telecom and helped mobilize organizational resources for a freer market in the IT sector. Thus, in contrast to modernization/middle class theory, their autonomy is not derived from material resources or free social spaces, but their creative visions, crafty strategies for resource mobilization, and their courage against monopolies.

Their symbiosis with the state is also manifested in their individual and collective efforts to design rules and institutions for a robust national information infrastructure through behind-the-scene lobbying and bargaining. They provided new and different

perspectives. An important example is Minister Hu Qili. After he assumed office in June 1993, he started to lobby the senior leaders in China to build up alternative public networks and new telecommunications carriers. He also opposed MPT's argument that building another national network is "redundant construction, a waste of state resource." These leaders bring a new type of knowledge to the table, and thus have an impact on the way some top elites thought about problems. Like think tanks, they sometimes become top leaders' "kitchen cabinets" to help the politicians tide over ordeals in a period of uncertainty. In the synergy of these IT leaders and the state, some of these leaders gradually gained viable trust and got their independent views through to the policy makers. As in divesture plans to break up the monopoly of China Telecom, we can see that they have brought foreign elements into the state, grafted on to the evolving indigenous root, creating a hybrid program for IT reform.

The introduction of new norms by these IT leaders goes hand in hand with a shifting legitimacy of the State. These IT leaders are operating in an era when the Communist Party changed from a "revolutionary party" to a "ruling party". Since pragmatism and experimentalism characterized the current post-Deng solution of the Communist Party, the PRC leadership relied primarily on incremental "internal remedialism" when responding to problems in the state system. As "efficiency reforms" have grown quite strong within the CCP, the IT leaders have also attempted to negotiate with the state for more freedom. Thus the expertise of these IT leaders is welcome to promote marketization, privatization, and the integration of China into the international community and raise the standards of living.

On the other hand, parasitic elements are also found as the state started to incorporate these IT leaders into the political establishment. It is also a part of the state corporatist strategy to increase the number of "red capitalists" to prevent potential opposition from rallying popular support and threaten the regime. It also allows the Party to design institutional links between the state and the private sector, allowing for exchanges of ideas between government and business (Dickson 2003).

These IT leaders have also negotiated a path for their independent pursuit of an internationally competitive telecommunications carrier. Through the efforts of Jasmine Zhang, Edward Tian, Peng Peng and Jiang Mianheng, China Netcom came into being, which eventually helped bring about the break up China Telecom into two separate parts in the north and south. But their success is limited as demonstrated by the manner in which Party incumbents fight fiercely to protect their own turf and prevent their removal from current establishment. The demotion of Peng Peng from the presidency of China Railcom is a clear example that seeking too much independence is a risk to one's political life. This forces us to think about the leaders' amphibious nature, their willingness to help the state leapfrog to 1st world status and their reluctance and inability to challenge the authoritarian political system.

The Creativity of the Golden Projects

The autonomy of IT leaders in the public sector does not derive so much from a material basis or from freer social spaces, but from their sagacious visions for a networked and connected China. As a result of their overseas experiences and unique understanding of past, these IT leaders started to devise a blueprint for China's future via

information technology and pushed forward their visions in the political arena. Minister Hu Qili is touted as the first man in telecommunications reform in China and is undoubtedly an IT leader in the public sector. His two major contributions are the Golden Projects that consisted of the public networks for national information infrastructure and the establishment of China Unicom as the first competitor against China Telecom. After he became the Minister of the Ministry of Electronic Industry (MEI) on June 6, 1993, he initiated the Golden Projects and visited the United States. In 1993, Hu Qili wrote to the State Council that, "to promote economic informatization is a milestone strategic choice for the economic development in China" (Hu 2001, 413). In this report, he used the US "information highway plan" as an example for China to follow. Since the 1980s, the information sector has become the fastest growing industry with its development at three or five times faster than that of average GDP growth. The revenue of the electronic industry increases by 30% each year and the telecom revenue experienced a 40% increase. Thus the development of information industries became the focus of international competition on comprehensive national strength according to this report. Later his idea was endorsed by President Jiang Zemin, who was convinced that modernization is closely linked with electronics and information industries, and there is a pressing need to upgrade informatization to the strategic status.

On December 10, 1993, the National Joint Conference on Economic Informatization was formed. Zou Jiahua, the Vice Premier of the State Council was appointed chair. Minister Hu was made Deputy Chair in charge of daily affairs. This committee was composed of 24 ministries and departments, with a main task to have "unified design, joint construction, uniform standard, and combined expertise" as its goal

to set up "Three Gold" –Golden Bridge, Golden Card, and Golden Customs projects. These projects have greatly improved the telecommunications networks and national information infrastructure. At the same time, electronic products have found spacious markets. This has also readjusted industrial structure for high-tech and network technology centered on computer software. Hu also led the initiative to complete the Prospectus for the Development of China National Information Infrastructure (CNII). He helped design the "Regulations on the International Interconnection of Computer Information Networks of the People's Republic of China", which was promulgated in the State Council Decree No. 195. In the meantime, connections were established with Global Information Infrastructure Committee (GIIC) and Russian Information Policy Committee.[48] With the rapid progress of information industries, the Steering Committee for Informatization was established at the approval of the State Council on May 27, 1996. Its office resides at the MEI. What follows are personal communications with Hu.

NII Initiative

An important feature of these IT leaders is that they serve as bridges to bring Western concepts into Chinese practices. This is the first component of their amphibious nature. To Minister Hu's understanding, the American information highway exploits information resources to improve the competitiveness of enterprises in international markets and create new employment opportunities. By 1994, the telephone penetration into Chinese households has reached 93%, with an annual increase rate for EDI exchange

[48]The GIIC is a confederation of chief executive officers of firms that develop and deploy, operate, rely upon, and finance information and communications technology infrastructure facilities. Commissioners of the GIIC come from firms based in developed nations, as well as in developing and emerging market nations.

of 27%. The total revenue had reached 179.6 billion dollars in 1993. Through his visit in the US, he found four elements were crucial for American's successful National Information Infrastructure program. These were: communications network, computers, databases, and a large number of human resources (Hu 2001, 250). There were 10,000 or more telecommunications networks such as GEIS of General Motors, Advantis of IBM, and ARPAnet of national defense. The Internet of the scientific community has 5000 databases and 150 large-scale computers. There are also many specialized Internet networks for health, environment, education, government affairs, and national security. These networks are service-based and change the vertical society into a more horizontal one. Therefore, his main proposal was to establish Golden Projects to be the national information infrastructure for information exchanges and value-added services to the Chinese people.[49]

Quadrangle Courtyard Culture

In a talk with Dr. Ernest Wilson on October 26, 2004, Hu expressed the closed nature of the political system made Internet networking almost impossible. Thus courage is vital for leadership to break the rigid mentalities.

> You understand that Chinese culture is like the quadrangle courtyard closed in on all sides. This is a political system with unrelated jurisdictions of central ministries and local governments. In such a closed political system, mentality of the people is constrained and coordination is extremely difficult. As mentioned, in June 6 1993, the MEI was established. In just less than half a year, a new wave of

[49] In his report, Hu says :

Recently, the US House of Representatives had passed an act to allow competition so that cable companies and telephone companies can operate in each other's business domain. In addition, the federal government played key roles in regulating the ICT market. In the White House, there is a special working committee chaired by Secretary of Commerce Ron Brown. Thus the Joint Steering Committee for Informatization in the US may play a role in mediating relationships between government and enterprises (Hu 2001, 80).

> information revolution has spread from Europe and the US. I believe that information technology is quite instrumental for a large country like China. In December, NII published its report to innovate networked system. In contrast, MEI of China still is concentrated on the manufacturing sector. The Internet is still limited in research area. Thus we need to have some theories to adapt our system to the needs of the people.
>
> Although we have made some progress on circuit integration system and software, we are still quite concerned with networks. Then we realized the importance of computers. For example, in our banking system, we cannot just have POS or ATMs. We need to have electronic remission system. In the west, a credit card can resolve every problem. But in China, we pay with a suitcase of banknotes. Thus this leads us to upgrade our financial system for electronic remission.[50]

Thus we find that Hu had his vision for a developed country of China and did his best to make his ideal come true. This is an important dimension of autonomy not commonly found in the public sector.

Golden Networks

The Golden Projects is a success initiated by Hu's visions for a connected Chinese economy. These projects started a new era of public networks that serve different purposes for the country's development.

> So actually on July 2, 1993, I advocated to establish electronic systems and started a series of projects of integration. The Golden Bridge is one of the key projects linking 24 ministries together. We wanted to provide coordinated services between these ministries with unified standards service. Thus we started to have our EDI system. Without an integrated network, our products, equipments and software will find no market. This is endorsed by the Vice Premier, Zou Jiahua. Thus our Four Golden projects started involving thirteen ministries and commissions. Golden Customs involves seven ministries and Golden Tax four of them. The effect was substantial. For example, each year there were billions of tax evasions. Also many people cheated on the tax refund from Customs. This has increased almost 30 billion yuan for the customs, which pleased them a lot.[51]

[50] Interview on October 26, 2004 in Beijing Hotel by Ernest J. Wilson III.
[51] Ibid.

In 1993, under Hu's leadership, a series of Golden Projects to give the central government information on and control over the rapid decentralization of decision-making as it was taking place. It followed a move to a market economy in the ICT sector. The backbone for the projects, the Golden Bridge, connects ministries and State Owned Enterprises (SOE's) through an IP network and provides support for the other Golden projects. The Golden Card Project aims to promote the use of credit cards by providing a credit card verification scheme and an inter-bank, inter-region clearing system. The Golden Tax Project computerizes work unit tax receipts and enables the electronic transfer of funds, innovations that been around in the West for sometime. The Golden Gate Project aims to improve the import-export trade management by linking the Ministry of Foreign and Economic Cooperation, trade organizations, and the Customs Bureau. It uses EDI and provides access to statistical databases. These projects greatly improve China's business transaction and link efficiently the domestic market with the international market. They help drive China into a transformation of its economic structure (heavy manufacturing sector) into a high-tech based industry with much less environmental degradations.

Table 2. ***The Golden Projects***

Name	Participants	Purpose
Golden Bridge (*Jin Qiao*)	Ministry of Information Industry, State Information Center, Ji Tong Co	To build a public network backbone and international network interface capable of transmitting data, voice, image and multimedia information
Golden Customs (*Jin Guan)*	Ministry of Foreign Trade, Customs Department, Ji Tong Co	To establish networks capable of handling foreign-trade taxes, foreign currency settlements, domestic returns, quota management systems, an electronic data interchange (EDI) and an import-export statistical database

Golden Card (*Jin Ka)*	People's Bank of China, Ministry of Information Industry, Ministry of Internal Trade, Great Wall Computer Co	To establish an electronic-based financial transaction system and information service; to have 200 million credit cards in use across 400 cities by early in the next century
Golden Sea (*Jin Hai)*	State Statistical Bureau, People's Bank of China, State Information Center	To build a data network linking top government leaders with other institutions, organizations and offices under the direct jurisdiction of the Communist Party Central Committee
Golden Macro (*Jin Hong)*	China Export-Import Bank, Ministry of Finance, State Information Center	To develop a state economic and policy support system by setting up a database unifying industrial, tax, price, investment, resource, capital, energy, transport and communication information
Golden Tax *(Jin Shui*)	Ministry of Finance, Ministry of Information Industry, State Taxation Bureau, Great Wall Computer Co	To make use of computerized work unit tax receipts and direct bank connections to aid the flow and use of funds across China
Golden Intelligence (CERNET, *Jin Zhi*)	State Education Commission	To enable teachers and research professionals to have timely and precise information and to enable international and local communication and cooperation
Golden Enterprise *(Jin Qi)*	State Economic and Trade Commission	To design and build an integrated enterprise target (quota) and distribution system; to build a country-wide enterprise and product database

Source: Big Brains Limited, quoted from China Economic Quarterly, section 2, 1999, p. 26

Bottlenecks

Hu talked about the reason underlying these projects. Without these projects, there is no way out for manufacturers to sell their electronic products since China Telecom is almost the only consumer to decide what to buy

> Before these projects, enterprises had a hard time to sell their computers. For example, a factory called the Great Wall used to sell computers set by set. However, people have to come back and forth to learn how to use them. It is a waste of time and human energy to do business in such a small scale. Later we had Golden Tax project, one single order would be 2 – 3, 000 sets of computers. In 1990, we sold out 500,000 sets of computers. In 1995, that number reached 3.3 million. In recent the years, that number has increased ten fold to reach 30

> million. Our Internet users have also reached 87 million. Thus these golden projects are breakthroughs for our time.
>
> This led us to the competition of telecommunications companies. By that time, telecom users are slaves and China Telecom used to be the superior boss. Without breaking up China Telecom, there was no way out for manufacturing industries under MEI. I have to look for way out for my factories. In a word, we are cornered to fight against the monopoly of China Telecom. I understand this is a new task for technological development, and I personally realize that there is a great political risk, because at that time, nobody could openly challenge the monopoly of China Telecom.[52]

He made courageous moves to convince political elites on the importance of competition and networked society. This was at a time that many political leaders worried about the potential "bourgeoisies liberalization" accompanied by the information technology. Hu made sure to the political leaders that by national information infrastructure as a national system that is shaped by technology but that is chiefly a set of interlocking institutions that guide and constrain the behavior of consumers, suppliers, public officials, and citizens (Kahin and Wilson 1997).

> At that time, I advocated using informatization to lead industrialization. I had to do so because such an exorbitantly high price of telecommunications made us unable to achieve anything. Even for our manufacturing industry and equipment production, we felt that we must use the information technology to upgrade our traditional system. We wanted to make information industry our backbone industry. But the innovation of informatization needs public network infrastructure. The public network was provided by China Telecom and was extremely expensive. China cannot fail to catch up with the third wave of industrialization of the world. Therefore, we had another public network called the National Economic Information Network. The second public network met some of our demands. But for the way out of all walks of life, we need more networks for these golden projects.
>
> We finally realized that the current telecommunications network became the bottleneck of our development. For example, we had more than forty research institutes, but they produced little social benefits. We must have the specialized networks for application. At that time, 1.3 billion people had only one telecommunications company. The installment fee for a single telephone line is 5000 yuan, more than 700 USD. With all the "golden" projects, all the research

[52] Ibid.

> institutes started to work to study how to apply modern technology to create social benefits and lower costs. With the breakup of China Telecom and establishment of Ji Tong Communications, finally we have spun off the China Telecom's monopoly. I understand my political risks, but the social benefits are huge. I truly understand the needs of consumers. After eight years of practice, we have understood the interconnection of industrial sector, research sector, academic sector and application sector. We have developed our autonomous national information infrastructure.[53]

Hu was making bold moves to make possible free competition in the telecommunications market in China under the structuring plan of the state. He understood the roots of problems and now he began his efforts.

Globalizing Initiatives

More important, his vision embodied a strong desire and a sagacity to help China's informatization to keep pace with the world.

> The guidelines for China's informatization (e.g. informatization led industrialization) were actually learned from our 1993-1994 reports or talks. The Party's directives have a lot of words actually drawn from our previous documents. After many years search and practice, we have established so many golden projects with so many better off customers. For example, Golden Card has given the banks each year 2 billion yuan benefits. The Golden Customs have produced golden ports and EDI systems.
>
> We have also dramatically made information industry our key industry. Now electronic exports account for more than one third of our total exports. The total output amounts to 140 billion yuan. This first half year, there was also a 50% increase of products. The total revenue of electronic products has reached 1880 billion yuan last year. On the integrated circuit industry, we can produce products ranging from 0.13 minimeter to 0.18 minimeters. In less than ten years, our telecommunications income has reached 600 billion yuan. Our mobile phone users have ranked now No. 1 in the world totaling 300 million people.[54]

Under Hu Qili's aegis, the Golden Projects made a great success. The Golden Bridge project was implementing Vice Premier Zou Jiahu's proposal for a national economic information network on March 12, 1993. In 1996, the Golden Bridge started to

[53] ibid.
[54] ibid.

build a national computer network and value-added service system with satellite and Internet backbones. Ji Tong Communications Co., Ltd. was entrusted with the first task to set up EDI networks for foreign trade. By 1996, in thirty provinces and cities, the network was built up with interconnections with MPT. The Network Control Center was established in Beijing and the Internet started to connect with the world. The Golden Card project was also under President Jiang Zemin's request to deepen financial reforms. The joint conference on June 15, 1994 by Zou Jiahua approved the design of Golden Card. From then on, the commercial banks issued 277 million check and credit cards. There were also IC cards being sold to the public at a number of 230 million in 2000.

Table 3. **China's Main Public Networks**

CHINANET www.chinanet.cn.net	Operated by China Telecom, the country's dominant Internet provider and offering services in all major Chinese cities. At the end of 1999, CHINANET had a total bandwidth of 291Mbps (million bits per second), or 83 percent of Chinese connections to the global Internet backbone. Though China Telecom itself is the dominant Internet service provider (ISP) for CHINANET, a few small ISPs operate by leasing CHINANET resources from China Telecom. But China Telecom's high leasing fees have effectively prevented these small ISPs from becoming significant players in the ISP business.
CHINAGBN www.gb.com.cn	Operated by Jitong Communication Co., Ltd. In January 1994, the state-owned Jitong was founded to operate the network, but did not launch its CHINAGBN services until September 1996 (nine months after CHINANET). Jitong is also the main ISP for CHINAGBN and offers IP telephony and other Internet services.
UNINET www.uninet.com.cn	Run by China Unicom, China's second telephone operator. Has developed extensive cellular and paging services. In southern China, Unicom is using its IP network UNINET for IP applications such as Voice over IP and Fax on IP, but plans to offer Internet-access services on UNINET in 100 cities in 2000
CNCNET	Will be run by China Netcom Corp. Netcom is largely in the planning stages, but this new telecom operator will base its network on connections to existing broadcasting and railway networks, and it will offer wholesale broadband access as well as local Internet service in major Chinese cities.
CSTNET www.csnet.net.cn	The China Science and Technology Network offers its services to the public, but the majority of its users are provincial- and local- government agencies and state-owned enterprises. Though some of these enterprises have Internet access, CSTNET is not primarily a business-related network.
CERNET www.cernet.edu.cn	The Ministry of Education's campus network, linking China's major education and research institutes. Along with CSTNET, CERNET provides mainly scientific research and educational information.

Source: The China Business Review 2000, 21

Crafting the First Competitor—China Unicom

The establishment of China Unicom is a combination of both the autonomous and symbiotic traits of these IT leaders. Their initiative for a second competitive telecommunications carrier is no doubt an autonomous pursuit of these IT leaders in helping the state improve its competitiveness in the ICT sector. Again, Minister Hu Qili plays a vital role here. Hu wanted to create a second national network not for competition's sake, but for the outlet of electronic manufacturers and retailers for his ministry. Under the monopoly of China Telecom the products of MEI have difficulty finding markets. In addition, China Telecom only purchased foreign products. Under his guidance the national information infrastructure initiatives start to gain momentum. In 1994, he led the other two ministries – Ministry of Railways and Ministry of Electric Power (MOR and MEP) to establish China Unicom, which started to challenge the monopoly of the China Telecom. "MEI, lacking its own telecommunications lines or wireless systems, favoured the alliance with the Power and Railway ministries, both of which had substantial private telecommunications networks" (Harwit 1998, 189). The MEI coalition contended that the telephone penetration rate at that time was only 1.63%, and there were long waiting lists everywhere. By 1992, non-MPT ministerial networks were mature enough to be linked as a national public information infrastructure.[55]

The key issue in introducing competitive carriers is nation security. Hu's solution was to enhance encryption technologies and restrict the management of carriers to Chinese nationals. With regard to the universal service, Hu pointed to the fact that they were exactly covering the region which the public networks did not serve. The MPT

obviously lost. Zhao Weichen, Director of the Office of Machinery Export under the State Council (later made Chairman of the Board of China Unicom), argued monopoly was at odds with Deng Xiaoping's theory of socialist market economy. The MPT's monopoly became a bottleneck for national economy (Zhao 1994, 2). Both Hu and Zhao conducted field investigations in the United States before and understood the road to break up AT&T in America.[56] On September 16, 1993, two reports were completed: The Report on Establishing China United Telecommunications Corporation, and The Critical Situation of the Telecommunications Industries in China and Suggestions. On September 19, Zeng Peiyan and Hu Qili reported to Premier Zhu. Hu emphasized the contradictions under monopoly and surplus resources of other ministries cannot be used to meet the huge demand of telecommunications services. Hu remarked: "we need to pioneer and have a try in order to find new developmental guidance." Zhu agreed with Hu and expressed great interest in the proposal to set up China Unicom jointly by three ministries. He read carefully this report and stamped his support on it: "It seems to be good and contribute to telecommunications causes and ease the contradictions of interconnections of telephony services. Please invite Yanning (Deputy Director of the State Commission on Economic System Restructuring), Qingtai (Deputy Director of the Economic and Trade Office under the State Council), State Planning Commission, MPT, Ministry of Machinery and Electronics, MOR, MEP, and telecommunications regiment of the military to jointly discuss the way to set up a limited liability group under the supervision

[55] For example, MOR owned 35,000 km of open-air lines, 30,000 km of coaxial cable and 300 km of fiber-optical cable, and numerous microwave links. MEP owned 27,000 km of digital microwave links. See He Feichang, pp. 207.

[56] In 1974, the government alleged that AT&T had monopolized telecommunications markets (*US* v.*AT&T* CA No.74-1698). From 1984, the Bell Operating Companies for local telephone service , were divested from AT&. AT & T continued its long distance service. The Bell System, the backbone of American

of MPT." When he asked Hu's idea of his comments, Hu was excited and expressed great gratitude to Premier Zhu.

Then Minister Hu played pivotal role as an "insider" against the monopoly of China Telecom. According to the declassified document, the State Council held a conference between China Telecom, Ministry of Electronics, Ministry of Machinery, Ministry of Power, and Ministry of Railways in September 1993 (Hu 2001, 432). The objection from China Telecom for alternative networks and establishing China Unicom are summarized as three: (1) Every country allows only one public telecommunications network. As the monopoly of AT & T was broken in the United States, seven telephone companies purchased their own equipment and operated their own networks. Thus their profits could not be used for reinvestment, resulting in higher telephone charges. Thus, in the domestic reform, a unitary telecommunications network and the monopoly is vital. Legislature should ensure such monopoly. (2) All distance and one network characterize telecommunications. The co-existence of multiple networks cannot ensure an orderly operation and is technically unable to realize, jeopardizing national security and social security. (3) The proposal from MEI is even more "liberalized" than the US (reminding the serious political trend of bourgeois liberalization).

Hu Qili and other IT leaders such as Gao Hongbing had a systematic study of this and responded with three points. (1) The state keeps a unified management of telecommunications, but it does not mean such management must be implemented with monopoly. Monopoly is the largest obstacle for the development of China's telecommunications. Just because of monopoly, the telecommunication service is quite

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telephone service for a century, cease to exist. No single company could exercise the end-to-end responsibility that AT&T had long held.

poor. Its management is very backward and price is exorbitantly high. Therefore, the break up of the monopoly of telecommunications will only benefit all the people and promote a healthy development of telecommunications in China. (2) China lacks telecommunications resources, far less to meet the demands of national economy and social development. If we have proper allocation and management, redundant constructions can be avoided. (3) New telecommunications companies will follow the regulations of governmental organs in charge and adhere to unified technical standard. This will not result in "anarchy" of telecommunications industry. To break the monopoly of telecommunications is a significant measure of the telecommunications management system of the state under the unitary leadership of the state council and the Party (Hu 2001, 432-3). It is not telecommunications "liberalization".

In three years, Hu organized more than 30 briefings, and wrote 500,000- character reports to all relevant departments. He realized its risks and but the positive effect was so significant that he could not back up. On September 29, 1993, Vice Premier Zou Jiahua agreed to Hu's suggestion to have an alternative network, even without funding from the state. He was soon supported by the State Economic and Trade Commission. When he reported to the State Commission of Economic Restructuring, he got warm supports from Hong Hu and Gao Shangquan, Vice Directors of the Commission. They told Hu that some departments are against his suggestions not due to personal problems, but because of the long-term hackneyed concepts, problems of the old system, and departmental self-interests.

Hu's suggestion aroused the attention of Premier Li Peng, who ordered the creation of a task force to study his proposal for China Unicom. After heated discussions

with experts from the State Planning Commission and the State Commission on System Restructuring, the task force suggested to give scope to existing non-MPT communications networks as alternatives to existing public networks operated by MPT, gradually introducing new players into the telecommunications market, while maintaining a supervisory and regulatory role for MPT (He 1994, 209).

The success of IT leaders not only lies in their reasonable arguments and lobbying, but also in their way of wrapping up support from senior political elites. Officials supported Hu's proposal for China Unicom as another telecom carrier and MPT backed down. On December 14, 1993, in the name of "reorganizing state's telecommunications resource," the State Council approved the establishment of China Unicom. The terms were:

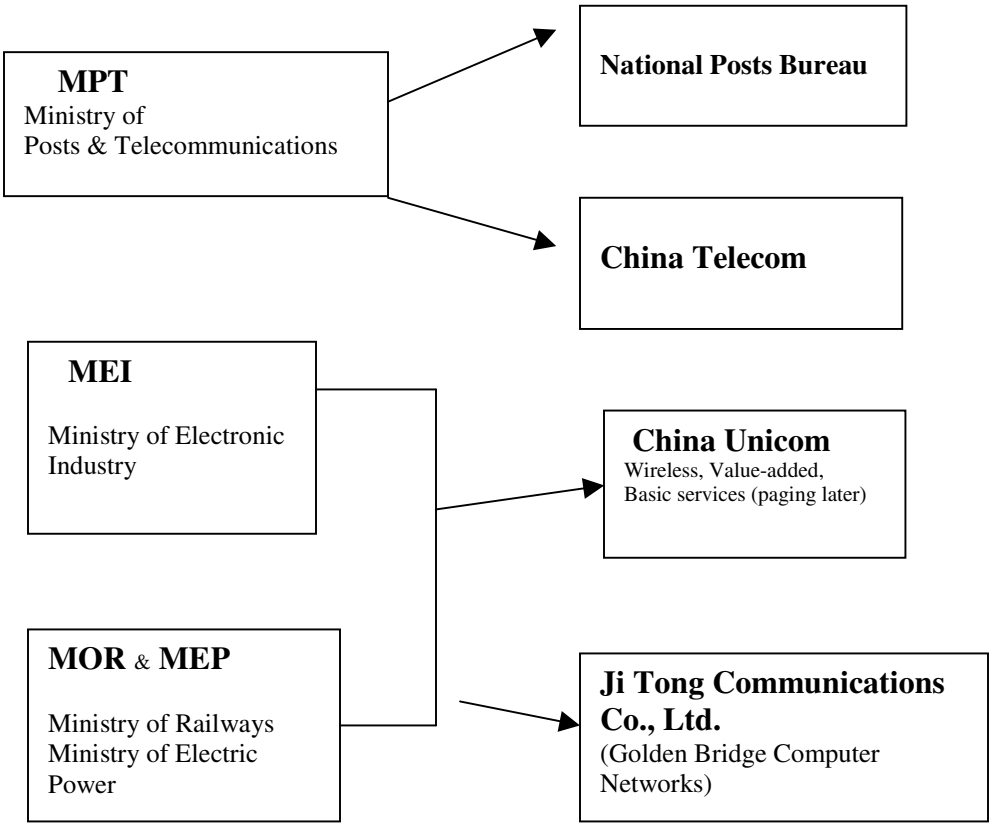
1. Upgrading the existing private networks of the Ministry of Railways and Electric Power to provide long-distance services to the public after meeting the demands of internal organizations.
2. Providing local phone service in the areas where the public switched telephone service does not reach or where there is a severe shortage of public telephone services.
3. Operating radio communications services, including public mobile services.
4. Providing value-added services.
5. Providing other services related to the main business.(Mueller and Tan 1997, 51)

This is a great leap forward for competition into the telecommunications sector. China Unicom is allowed in most telecommunication businesses, not just wireless and value-added services, but also the basic services: long distance and local telephony. Hu was touted as the first man against monopoly of China Telecom for his bravery at establishing China Unicom.

On April 15, 1994, Vice Premier Zou Jiahua presided over the meeting about the preparation of work for the establishment of China Unicom. The meeting decided that

China's telecommunications restructuring would be fully managed by the state, not through market. China would take a "phased competition" approach. Except for China Unicom, no new telecommunications carriers would be approved to enter the market. China would try a "duopoly" approach first in public telecommunications market. On July 19, China Unicom was formally established with RMB yuan one billion capital from MOR, MEP, and MEI together with other 13 investors.

Figure 7. **Functional Division of MPT and Entries of New Carriers in 1994**



Source: Kathleen G. Huang and author

The Compromise over the Spin-off of China Telecom

In the first divestiture of China Telecom we find that efforts by these IT leaders

were not always producing optimum outcomes, but were heavily fought against by conservative forces within the establishment. Thus the parasitic dimension of IT leaders is manifested through their initial setbacks and later through their loss of power within the government. During the second divestiture their efforts achieved great success partly because of their creativity and craftsmanship and also partly because of their support of Jiang Mianheng, son of the former president. The complex mingling of all the dimensions shows their amphibious nature towards politics: an expertise on innovative changes and a conservative stance towards political reform within the establishment.

There were some important preconditions for breaking up China Telecom. On December 10, 1993, the National Joint Committee of Economy Informatization had been formed. Zou Jiahua, the deputy Premier of the State Council, was appointed the chair. In January 1996, the Informatization Leading Group of the State Council and its executive office were established. Zou Jiahua, the deputy premier of the State Council headed the group. The former office of National Joint Committee of Economic Informatization was renamed the office of Informatization Promotion Leading Group of the State Council and in 1996 AT & T invited the State Planning Commission to visit the United States. Four delegations were sent to the United States within half a year to study the new edition of telecommunications act. The State Planning Commission, Information Promotion Leading Group, MPT, and China Unicom sent their respective delegates to study the telecommunications policy on regulating long-distance and local telephones as well as cable networks with telephone networks. In September 1994, the Chinese authorities on postal and telecommunications began to enter into the service of Internet. Two portals (exits) were established in Beijing and Shanghai. On June 20, 1995, the Internet service

began its full operation.[57] In 1998, The Ministry of Information Industries was established to combine MPT with MEI to strengthen a centralized management of IT resources for economic growth. This change had both intended and unintended consequences for the ICT diffusion in China.

In the 1998 breakup of China Telecom, the IT leaders started to provide solutions to unforeseeable problems in the highly risky reform process and helped the state invigorate a national information infrastructure that is crucial for the leapfrogging development of China. They provide new and different perspectives from those provided by bureaucracies and bring broad new ideas about policy directions, thereby having an impact on the way people think. There are broader structural reasons that influence such decision making, and there are also leadership efforts as sources of tactics and outside lessons. In the UK, broader forces certainly influenced the final decision to privatize, but the immediate source of the decision came not from the Treasury, the prime minister, or any private sector group—but from two civil servants in the Department of Industry who were working on telecommunications liberalization. In March 1982, they sent a memo to the secretary of state suggesting that privatization would be necessary in order to assure effective competition. Secretary of State Peter Jenkin responded to the memo by calling a meeting of a small group of civil servants involved in the telecommunications policy (Vogel 1996, 78-79).

The core problem facing the newly established MII was, as described in *People's Daily* by Su Jinsheng, was that there was no effective competition in the telecommunications sector because China Unicom, the only competitor of China

[57] See *China Computerworld*, Nov. 17, 1997, A21.

Telecom, was too small.[58] Wang Xiujun, Deputy Bureau Chief of the Telecommunications Management Bureau of the MII, used a metaphor to explain the need for the divestiture of China Telecom-- the 500,000-employee behemoth with $ 40 billion in revenues. In order to solve the problem of a lack of competition, the State Council and the MII worked out an *asymmetric management*policy. On the one hand, they would break up China Telecom to make the monopoly giant smaller. On the other hand, they would hand in some business to China Unicom to make the "child" bigger. But although China Telecom was divided into four functional companies, real competition was not yet emerging. The intended purpose of China Telecom's divestiture was to foster competition. By severing the network of China Telecom, these IT leaders were engaged in numerous debates on the plans to share the power of China Telecom. At the time the decision was made at MPT, Minister Wu directly reported it to Premier Li Peng. After Li Peng's approval, it became effective.

Liu Cai, the Director of Policy and Regulation Department of MII, devised a conservative plan to break up China Telecom according to different functions. He is both a successful and a tragic IT leader, which reflects compromise with the conservatives and finally, a sacrifice incurred because of his boldness. The Liu Cai plan was the least pro-competition because it kept China's monopoly over the basic service. Considering the MPT's longstanding position of keeping the network integrated, it was no wonder that Liu Cai proposed a plan with only limited changes.

He proposed to divide China Telecom by categories of services: fixed-line, wireless, paging, and satellite. The new company in each service market would be a

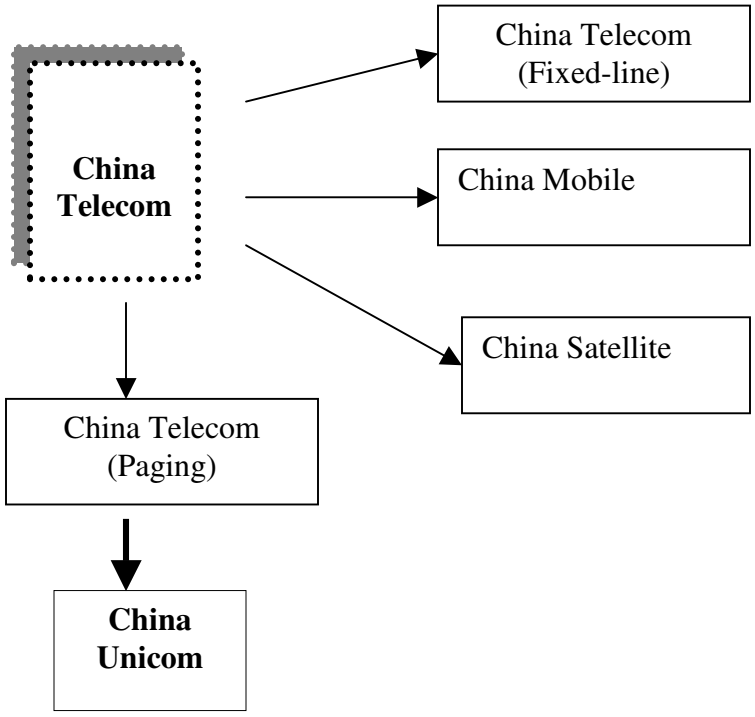
[58] See Su Jinsheng, Bureau Chief of Telecommunications Management Bureau, MII, "How does the Government Manage the Telecommunications Sector?" *People's Daily*, 24 July 2000, p. 11.

network operator as well as service provider. Although China Telecom would be smaller, the plan did not touch the source of monopoly power at all. Liu Cai's plan mirrored the longstanding policy position of the MPT: to keep the national network integrated. However, a couple of years later Liu was too bold to even talk about that cell phones should charge from one side in a chat room online. This caused a drastic fall of IT stocks on the Nasdaq, and Liu lost his position because he enraged Premier Zhu and Minister Wu.

Another IT leader's plan was not adopted because some political incumbents could not accept a Western approach. Dr. Kan Kaili, who got his Ph.D. in engineering from Stanford, was the main designer of the liberal proposal.[1] The Dean of the School of Public Administration and Management at Beijing's Posts & Telecommunications University, Dr. Kan, proposed further separation of network operation from service operation in fixed line services after China Telecom spun off its wireless and satellite businesses at the request of Premier Zhu.

Finally, Liu Cai's Divestiture plan was adopted. In February 1999, China Telecom spun off its paging, wireless and satellite businesses as the Liu Cai plan proposed. China Telecom's paging business was handed over entirely to China Unicom, including facilities, personnel and subscribers. This first divestiture represents a compromise between reformers and conservatives.

Figure 8. **The First Breakup of China Telecom in 1998**



Source: Kathleen G. Huang, and author

In the second breakup in 2002, IT leaders played vital role in introducing a new carrier. In this phase China Netcom was created to gradually compete with China Telecom. In May 2002, China Telecom was divided between its north part (China Netcom Group) and its south part (China Telecom Group), in accordance with the telecom restructuring reform plan of the State Council. It arose from three reasons: first, the first divestiture in 1998 was incomplete and did not introduce real competition. Second, China needed to increase its competition at the request of WTO and allow foreign investment in the telecommunications sector. Third, China Netcom could not survive by renting lines from China Telecom at a higher rate than the retail prices set by China Telecom. For the sake of its development and overseas financing, China Netcom

had a systematic study of the irrationalities and detailed calculations of cost-benefit over the charges of China Telecom. At the pressure of these three forces, the government set up a Group for Telecom Reform chaired by Zeng Peiyan (later vice premier), which was composed of leading members of State Planning Commission and the Office for System Restructuring at the State Council. This new division was largely the turf fight between Jiang Zemin's protégés and Li Peng's underlings. In the past, Li Peng took charge of all traditional industries, including MPT, MOR, and MEP etc. but Jiang used to be the minister of former Ministry of Electronic Industry in around 1983-1985. Under Jiang Mianheng's aegis, China Telecom was successfully broken up. China Netcom's market entry was an important case of leadership in introducing competition into the telecommunications market.

The Adaptability of Leadership over China Netcom

The creation of China Netcom shows how these IT leaders cooperated with each other to bring about the second divestiture of China Telecom. China Netcom was an innovative creation by the IT leaders to build an internationally competitive carrier. The vision and "Quad" cooperation between academia, public, private, and non-governmental organizations were apparent in the creation of China Netcom. China Netcom, the first experiment for a broadband high-speed Internet enterprise, gained momentum with support from senior political elites including President Jiang Zemin and Premier Zhu Rongji. The initiative took place in a beautiful suburban scene in northwest Beijing, the Fragrance Hills, in April 1998. The State Commission of Science and Technology held a seminar on broadband technology, which could provide high-speed

Internet access. Thus heated debates in search for a technical solution to converge the three networks started from science and engineering communities. Participants included scientists of the CAS and engineers from China Academy of Engineering.

One proposal from the conference intrigued Dr. Hu Qiheng, Vice President of CAS. A renowned physicist and a research fellow at the Institute of Acoustics from the Chinese Academy of Sciences Hou Ziqiang suggested that, "the broadband Internet is a short cut for China to develop advanced network infrastructures." His bold prescription for China to construct a next-generation Internet infrastructure is to found an independent enterprise charged with building a new network to promote competition like those companies at Silicon Valley (i.e. the breakup of Ma Bell in the US). Hou's report immediately attracted attention from Jiang Mianheng in Shanghai. He also found three other ardent supporters: Sheng Guangzu, deputy governor of MOR; Zhang Haitao, vice governor of SARFT; Yang Xiong, general manager of Shanghai Alliance Investment. Dr. Hu Qiheng sent a proposal to the State Council and then relayed to MII. But MII was not enthusiastic about this. With their support, Hou's broadband experiment made a success both in Beijing and Shanghai cable TV stations. Shanghai's successful application of this broadband technology attracted nationwide attention. The Ministry of Railways and State Administration for Radio, Film, and Television (SARFT) showed great interest. At that time, the Shanghai government proposed to build the Shanghai Information Port at the influential advice from Jiang Mianheng who was keenly aware of the market and social value of information and communication technology. The SARFT has an amazing number of subscribers of over 80 million as the possible initial user base. MOR was also interested in the great potential of this broadband technology because it can offer the right

of way along its rail system through its well established a national telecommunications network.

Then Hou was invited by Jiang Mianheng to Shanghai to set up companies to produce equipment that would serve the cable networks of Shanghai. It happened that CAS was ready to lobby the State Council for building a large-scale national experimental network. Then Jasmine Zhang and Gao Hongbing were invited to talk about the plan for product development. Gao suggested that equipment production was only for the near future. For a better future, they'd better build up a strong national network, China's national backbone network, integrating Beijing, Shanghai, Shenzhen, and Xi'an first. That aroused great interest in Jiang Mianheng. Then they reported to Lu Yongxiang, Chief Director of CAS, and got support from him on January 7th, 1995. Then they invited Peng Peng from MOR and Chen Xiaoning from SARFT to discuss the potential national backbone network. On Februrary 11, 1999 in the meeting with Premier Zhu, they systematically studied the feasibility of a high-speed demonstration Internet network in China. This marked the first attempt for the public, academic, and private sectors to jointly work on a national network.

In February of 1999, Hou reached Premier Zhu. At the end of their talk,Premier Zhu recommended that he set up a company to apply this new technology. Hou explained that IP services could solve the delays and poor quality of voice transmission through broadband transmission lines. In addition, he also explained how costs could be shrunk drastically if broadband lines were ubiquitous enough. "I don't want scientists to spend millions of dollars on experiments. If we can put it into practice as quickly as we can, why do we bother to wait?" After this meeting, the CAS quickly worked out a

proposal for a high-Speed Internet project. The four parties, the CAS, SARFT, MOR and the Shanghai Municipal Government invested RMB yuan 30 million (5 million USD). On March 18, there was a heated discussion over design and construction of this high-speed Internet project. Jasmine Zhang, Gao Hongbing, Lu Yongxiang, Jiang Mianheng, Yan Yixun (CAS), Yang Xiong (deputy mayor of Shanghai) attended the meeting, which laid the foundation of future Netcom.

At the suggestion of Peng Peng from MOR, the Board of China Netcom invited American trained Dr. Edward Tian (Suning) to be its CEO because the traditional route to hire a manager from inside the government did not work. Yan, Jiang, and Peng believed that the new company was a showcase of globalization, thus Tian's success at AsiaInfo., his American education, and ability to keep people focused on the task at hand. But Edward had his worries. The chief concern was the possible dooming fate in its struggle against China Telecom. The lesson was that China Telecom blocked the interconnection with China Unicom and denied its access to vital infrastructures. Real competition could hardly materialize when a competitor had 85% of the market. Eventually these governmental agencies impressed Tian by favoring him with a hands-off policy and Western-style management.

Edward Tian became a bridge between the West and China, and between past and present. He is also typical of a generation of Chinese young men who were called by Deng Xiaoping to study abroad after Mao's demise in 1976. At the age of 25, Tian left China and arrived in Lubbock, Texas. Later he joined a Ph. D. program in biology, and soon he changed to ecology. Soon after, the opening icons of Macintosh, a smiling face at Texas Tech's university computer lab, intrigued him. It was a revelation for him to

find other Chinese students on the network. "It was my first glimpse of the unifying world of the computer," he said (Sheff 2002, 31). He then started an Internet organization called Sino Ecologists Club Overseas with about 300 students online. After Tiananmen Square incident in 1989, he was dumbstruck. "We thought and thought after that: How could we sacrifice to help the people of our country? It became the central purpose in our life" (Sheff 2002, 41). He then thought of abandoning his education in pure science to do something that would have an impact. Edward Tian went to a speech by Senator Al Gore after he completed his Ph.D. in 1992. What stirred Edward Tian was Gore's claim that the information superhighway could transform a nation through elevated communication, knowledge, and education. Tian exulted: "Information! Access! That's what we never had." He suddenly felt that it was the Internet that China desperately needed. "Inherent in the technology is the most invaluable in a free world: a free flow of information… Information technology has the power to bring a renaissance to China" (Sheff 2002, 43, 45).

Their autonomous pursuit of China's development is also seen through a statement made by the CEO of China Netcom. In a brochure published by China Netcom, Tian has a "dream":

> We dream that bandwidth will not limit our communication: broadband will be as popular as electricity in our daily lives. We dream that good education will not be possessed by only a few. Only fortunate can achieve the top of an Ivory Tower and acquire aristocratic education. Broadband will extend quality education like Beijing University, Qinghua University, and Jingshan Middle School to the most remote rural and bordering areas, so that people who never left their hometown can take a look at the world and enjoy the best education. Our dream is that the best medical care is no longer the privilege of the urban dwellers. Excellent doctors will no longer face only one patient. The broadband networks will share medical care knowledge. People do not need trek all the way to hospitals in a big city, awaiting "final diagnosis" from the doctor.

> We dream that the life of the elderly will not be passed in lonely memory. The high quality pictures of broadband network transmission have eliminated distance, and make it possible for themto communicate with their relatives faraway and enjoy the heavenly love. We dream that in 2008, Chinese is the most commonly used language on the Internet. We dream that in 2008, PC will become a personal terminator. Its sales price is no more than 100 *yuan* (RMB), and every Chinese could afford it. We dream that in 2008 China can settle the controversies between development and environment. The land will have a blue sky and green field. Our field will no longer be under the pressures of transportation and pollution. Travel is only for enjoyment and all work can be done through the network.
>
> We dream that 2008 the Chinese "Silicon Valley" has produced the world-level high-tech enterprises. Thousands of the entrepreneurs of the broadband economy are developing advanced broadband operating system, broadband software, broadband interconnecting equipment, and broadband websites etc. In this field, we do not necessarily follow the bank at the opposite side of the Pacific Ocean. We have our own strategy, technology, and standard.[59]

The active role of the IT leaders to design the future of China in Edward Tian's words proves that there is an ambition among the China's IT leaders to use IT to enlighten people, transform the national economy, promote leapfrogging development, and to enhance environmental concerns by putting his CNC logo green.

> Green is a reminder that the Internet can help China's disastrous environment, which the industrial revolution has demolished. Bandwidth is clean, grassland, a pasture in which much can grow. In this pasture, countless new companies and countless new applications will grow—everything from commerce companies to systems that radically improve education and healthcare…. Broadband can do amazing things for China, and one of those things is to integrate us into the world in a seamless way. It will help to bring stories into China—stories to make dreams (Sheff 2002, 157, 161).

In April 1999, China Network Communications Co., Ltd. was established. The broadband high speed Internet unit of the Company was launched in November 2000. In August, only six months later, China Netcom entered the market. Yan became the Chairman of the Board of China Netcom. Hou became the chief scientific consultant of China Netcom. Jiang Mianheng, by then promoted to the Vice Chairmanship of the

CAS, also joined the board. A year later, China Netcom finished its phase I project: 8,490 kilometers of broadband backbone networks with bandwidth of 40G in the east of China. On October 28, it began operating in 17 cities.[60] A network with a 40G bandwidth is the technical solution for the convergence of three networks. Once Chinese leaders decided to embrace the Internet its development came quickly and several of the key figures became the nation's leading entrepreneurs.

When he recalled the dramatic establishment of China Netcom, Yan said: "I went there (the State Council) with a proposal to build an experimental network. I did not expect a company." Hou said: "I went there with full confidence in broadband technology. I was really surprised with Premier Zhu's proposal to form a new company for the technology. Premier Zhu was really sagacious." Yan also felt to be a historic calling for Tian, a chance to build technology that will help China leapfrog the West with a state-of-the-art broadband Internet backbone (Sheff 2002, 152). Edward Tian got this message and was enthusiastic about his broadband Internet.

> China's transformations all come down to bandwidth. CNC is going to be China's Sprint. The symbol for the information age is our fiber, with its invisible digital flow coursing at the speed of light…. Everyone knows that there are many people in China who do not have phones, never mind computers. Yet we will bring them high-bandwidth fiber. What good is it? They may not use email or e-commerce anytime soon, but ubiquitous bandwidth will affect their lives when we wire not only the cities but the villages—the clinics, schools, and libraries. A new China will emerge. Since the broadband Internet can be picture and voice run, illiterate people can have access, perhaps coming to them on the eight hundred million televisions in their homes. One day every school will be on the network. For people who were previously presented with one alternative for their lives, broad bandwidth brings a vision of other choices and the means to reach them (Sheff 2002, 152).

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[59] Publication from China Netcom in November 2002.
[60] See "China Netcom Enters Market," *The Weekend in the South*, 30 November 2000, p.22.

Thus the government set up committees inviting officials, professors, and entrepreneurs to jointly discuss the divestiture. As interconnection became key for different telecom carriers, state regulation becomes vital for their fair play. MII invited Jasmine Zhang and Ouyang Wu to set up the standard as the Western countries. The State Investment Commission issued a notice on interconnection. The Internal Department of the Commission was in charge of this issue. Experts and scholars from different universities joined these heated discussions. Zhang Weiying, Director of the Guanghua School of Management of Beijing University, Zhang Ping, professor from the University of Jurisprudence, and Chen Dingtai from the People's University joined them were leading experts then. Then the director of the Department would preside over these meetings and drafted these regulations. At the same time, they asked for advice from the relevant ministries. Then the Commission would reconvene. If time permitted, a delegation will be sent abroad to learn from experiences from other countries. A 1996 invitation by Lucent laid a firm groundwork for the Chinese officials to learn how to spin off these telecommunications companies. In Chinese, Yan Baoping calls it "*goutong*"--meaning communications, or get ideas through. After experts' research, enterprise calculation of cost and benefits in conferences again and again, ideas gradually emerged ("*chendian*").

The Parasitic Dilemma of China Railcom

IT leaders who made possible the market entry of China Railcom successfully created a new competitive carrier by using existing railway networks. However, its leaders faced a "double jeopardy". Once the company becomes too successful and large,

the incumbents at MOR would feel threatened and would resist its growth; once it becomes closely knit with the state, its leaders would lose their autonomy and innovative momentum. In order to guarantee the safety of railway transportation, the Ministry of Railways had been given the exclusive right of way to build private telecommunications networks along with the railways ever since the founding of the PRC. Each day, MOR operates 20 thousand passenger cars with an average of three million travelers, and 100 thousand freight cars. The railways would not work without telecommunications. MOR possessed 120,000 kilometers of communication wire, 70,000 kilometers of optical fiber cable, and a large amount of advanced communication equipment. It is the veteran in providing telecommunications services in China, with the second largest national information network with 70,000 employees.

According to Peng Peng, the ex-Bureau Chief of the Telecommunications Department of MOR, the backbone telecommunications network of MOR was so advanced that it could compete with the China Telecom's national network. The technical standards were almost the same with China Telecom, but a lot of new technologies were first applied to MOR networks. "We are the first in adopting coaxial cable, microwave, program-controlled telephone switches, satellite communicators, fiber optics cable, and even wireless phone. In 1958, MOR started to use mobile phones imported from Soviet Union (TU3 radio transmission phone). But China Telecom started to mobile phone studies in 1982."[61] He was also confident of the overall strength of MOR in building a robust national telecommunications network. In mid-1980s, Minister Han Zhubin tackled the thorny problems in telecommunications and initiated a three-year

[61] Personal communication, interviewed by author on January 31, 2005 in Beijing Telecommunications Museum

telecommunications upgrading program. During this period, fiber optical cable was first used in Datong-Qinhuangdao railway for transporting coals from the hinterland of China to the port in the east coast.[62] This wrapped up support from Premier Li Peng.

The MOR was active in participating in the MEI coalition for the market entry of China Unicom in 1992. From that time, the MOR had been making preparations to enter the public telecommunications market. It sent many groups to the US, Japan, Germany, France and Britain. In those countries, railway companies had successfully become competitive public telecommunications carriers. For example, in the United States, Phlip Anschutz purchased the undervalued Southern Pacific Railroad and lay fiber optic lines for his Qwest Communications. A key insight was drawn that legislature in Japan and a fair competition environment predetermined the way its Railcom to enter the market. Thus this strengthened the state's resolve in China to set up regulations first. Another important insight was the "Quad" coordination by the government to set up committees inviting officials, professors, and entrepreneurs to jointly discuss the plan for division. Like in Japan, the Second Provisional Commission (Rincho, established in 1981) was to discuss administrative and deregulation issues. Its fourth subcommittee included sixteen members from a diverse group of businessmen, academics, journalists, and union representatives. The pro-reform force chaired by professor Hiroshi Kato (Keio University) was a big push for the privatization and breakup of Japan National Railways (JNR).

During China Telecom's divestiture, the State Council was concerned about the slow growth of China Unicom. China Unicom entered the market as the second public telecommunications carrier in 1994. It only took a small share of the wireless market

[62] another line from Beijing to Zhengzhou was also the first to use fiber optics

after five years of effort. Therefore, the State Council decided to cut out the whole paging business from China Telecom and handed it over to China Unicom.

When MOR's proposal to enter the public telecommunications market reached the State Council, the State Council saw it as another opportunity to strengthen China Unicom. On the one hand, the shortage of fixed-line networks was perceived as the main problem hindering the growth of China Unicom. On the other hand, the MOR has nationwide fixed-line networks, which China Unicom did not have. The MOR was also one of the sponsors and the investors of China Unicom. For Premier Zhu, it would be a great match to combine the two. Meanwhile, China Unicom was going to get the whole paging business from China Telecom's divestiture. China Unicom would be greatly strengthened by absorbing both the network facilities from Railways and the paging business from China Telecom. A strengthened China Unicom should be able to compete with China Telecom. Therefore, using the words of the insiders, Premier Zhu personally "arranged a marriage" between the MOR and China Unicom. The MII, the State Economic and Trade Commission, Railways and China Unicom formed a coordination group and started the negotiations.

The negotiation stuck on the employee issue. MOR hired 69,168 employees in its telecommunications section, whereas China Unicom had hired about 8,000 employees. Railways' employees were almost nine times the size of China Unicom. China Unicom worried about being "eaten up" by Railways. Therefore, China Unicom suggested taking all the telecommunications assets of MOR, but not all the employees. MOR insisted that employees and the assets were a whole package, take it or leave it. The MII tried to persuade China Unicom to accept MOR's terms because it was embarking on the

initial public offering overseas. It definitely needed MOR's assets to win the investors' confidence. But China Unicom did not yield. The SETC's efforts also failed because neither side would compromise on this issue. The "marriage" was "arranged" by Premier Zhu. To reject the Premier's decision, the MII had to find a subtle way to turn down its superior. Therefore, MII minister Wu Jichuan conveyed his personal opinion instead of a formal report from the coordination group. Wu emphasized that continuing negotiations would end up in bitter conflict. He suggested starting an independent carrier to enter the telecommunications market. On December 26, 2000, China Railcom was formed. At the beginning, it owned a total asset of RMB 14.34 billion yuan, had a register capital of 10.3 billion yuan. Peng Peng, the former bureau chief of the Telecommunications Bureau of the MOR, became the CEO of China Railcom. He summarized the market entry of China Railcom: "Our market entry shows the road from monopoly to competition is not straight, but winding. We all need to totally renew our concepts and thoughts." Peng sang high praise for Minister Hu, saying that he is the No. 1 person pushing for the telecommunications reform in China. He also told me that the first "barrel of gold" for China Unicom and China Netcom was from the telecommunications network of MOR. But the development of China Railcom encountered numerous problems due to the oppositions from the incumbent ministers of MOR.

Peng got lots of support from Premier Zhu, Vice Premier Wu Bangguo, and Zeng Peiyan. According to Wu Bangguo's directive, China Railcom should become one of the key operators of telecommunications market. It should take advantage of the national network and make it large enough to compete with China Telecom and other competitors with a new management style. Peng was enthusiastic with this message and organized

delegations to study the experiences in the West. He discovered that almost 80% of the anti-monopoly efforts in the West were from the railway sector, Sprint, MCI, and Japan Telecom. These countries had a fair competition environment with a good monitoring program. Peng advocated inviting big consumers, cooperating with local vendors for marketing, and creating comprehensive information system to allocate resources. With his effort, China Railcom now has revenues of roughly 10 billion yuan compared with the 70 billion of China Unicom.

The parasitic nature of China Railcom soon doomed Peng's fate. As MOR strictly controlled China Railcom on every key decisions, China Railcom soon lost its edge as a competitive carrier against other telecommunications competitors. But Peng suffered from a setback with ministers from MOR. Minister Cai Qinghua was afraid that the outgrowth of China Railcom would be out of his control. He complained: "The total budget for annual construction of the railways is only less than 30 billion yuan, while you Railcom wants to raise more than 10 billion investment. It is ridiculous." Later, to cater to Minister Wu Jichuan, he raised the principle that "China Railcom only serves the railway needs, no competition with China Telecom, its surplus resource can go to the market, and the growth large revolves around the trunk lines of railways." Peng felt outraged and reported it to the vice premiers. This offended the conservative ministers of MOR and they decided to demote him from the CEO of China Railcom to the vice director of board. Thus Peng's vision failed to be realized. Peng's case shows that leadership vision was important for the initial designs and operation of their enterprises, but the political struggles were ruthless and many of them eventually lost power. Under the Communist system entrepreneurial decisions were controlled by Party members and

this ran directly against the market principles. "No separation of political interference into business" becomes the core problem of the ICT development. This demonstrates the parasitic dimension of IT leaders: their inability to challenge the bureaucratic turf fight. The fundamental cause of this stalemate is that these IT leaders were powerful enough to fight against incumbents. Conservative incumbents become the real obstacle for these IT leaders to grow.

The Amphibious Features of the "Up and overs"

The "up and overs" refer to those people who shift their jobs from the government to business or vice versa (*xiahai*, jump to the sea) in the ICT diffusion. They are crucial bridges between state and society, a symbiotic representative of both the formal politics and informal politics in China. The up and over phenomenon reminds us that these IT leaders may shift from their formal positions at the government to private sectors, thus building an informal link with formal institutions. This "up and over" phenomenon reveals a pattern of state-business relationship that is not hierarchically clientelist, but is more symbiotic instead. Chinese politics have witnessed a continual clash between informal patterns of behavior and emergent institutions (Fewsmith 2001a, 81).[63] One informal patterns of behavior is that the cadres' secretaries (*Mishu*) who go into business can indirectly influence formal institutions.[64] These secretaries used to play a role as adviser and office administrator, ghostwriter and servant, personal representative or

[63] Formal institutions and informal patterns of behavior can be mutually reinforcing, but it is difficult to develop formal institutions if informal behavior is destructive of stable expectations.

[64] The relationship between a *Mishu* and his leader is patron-client. The *Mishu* will figure out the leader's intentions and the Mishu will conduct business on behalf of his shouzhang (leader). It is interested in communication and coordination and dispute settling, to learn from the leader familiarity with the system, an ability to deftly manage personal relations and the value of discretion. There is a lack of any clear separation in the career paths of the *Mishus* and the principal political actors.

bodyguard, and policy coordinator. In the British telecommunications reform, Ian Ellison, as the private secretary of Sir Keith Joseph, secretary of state of UK, was a committed civil servant who support of Joseph's efforts to desert the equipment industry and focus on the needs of the wider community of telecommunications users. He controlled the minister's door, his appointment book, and his correspondence. He serves as a double agent: he presents the minister's case to the ministry, and the ministry's case to the minister (Vogel 1996, 73).[65]

This up and over phenomenon reveals that patron-client ties remain the *sine qua non* of Chinese politics (Gutherie 2001).[66] They move through the "revolving door" between the state and private sector. The up and overs' proximity to the state cadres help them easily have access to enlighten state leaders on the understanding of the global information revolution and its potential impact on China. Up and overs historically have been able to turn their proximity to power into official power and position. They outgrow the Leninist bureaucratic structures and provide new channels for fresh public opinion to reach the relatively close-door leaders. The central leaders have to use these ties to assess changing public expectations. In exchange for the resources from the Party, these IT leaders demonstrate their loyalty to the state via giving advice to the state for the administration of the information technology and promising a more stable China is even more important than democracy. In a word, the evolution of China's political development is transformed from within as an unintended consequence of adapting the

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[65] There are some resemblances in Japan. "Family" manufacturers (*amakudari*, "descending from heaven") refer to government bureaucrats going to lucrative private business after they retire. However, not all of them are contributive to liberalizations in the ICT sector. Some businessmen are against privatization (Vogel 1996, 153).

political institutions to demanding market initiatives. Thus these IT leaders serve as catalyst for these political changes by actively engaging in the design and conduct of the policy-making processes.

Thus "up and overs" are a good example of this symbiosis. Because of their experience in the government, they have the trust from colleagues or senior governmental officials that can grant them licenses easily. At the same time, they are able to give policy input to the government because of their commercial experiences. Gao Hongbing is a good example of a talented new ICT entrepreneur.

The example is Gao Hongbing, former secretary for Lu Xinkui, Vice Minister of Ministry of Information Industries. His task of drafting, handling, and filing documents related to the first-hand activities of conducting policy research, investigating the principal, and collecting data for IT diffusion. He provides inputs from critical sources like public opinion and the business community as he watches closely the Internet chat-rooms, letters to the editor, books and magazines as a barometer of satisfaction with government policies. In Brazil, one of the information revolutionaries "the Gang of Four", Ivan Moura Campos used to be secretary of the Ministry of Science and Technology (S & T) and then jumped to the private sector.

As an eloquent speaker, Gao drafted most of the speeches for Minister Lu. In one article he wrote:

> Premier Zhu says: "Informatization is a deep revolution, an important aspect of China's economic reform and also an important aspect of government reform." Why is informatization so important and what is its relationship with the economic system reform? And how does IT promote government reform? Nobody has done a deep analysis. President Jiang also says "four modernizations

[66] although it must also be recognized that rule and law-based procedures increasingly govern recruitment and retirement processes

> (industrialization, agricultural modernization, national defense and science and technology) could never detach from informatization." Modernization includes both the improvement of productivity and the readjustment of productive relationship. It is a historical transformation of social relationship. We need to pay attention to a new notion. New forms of modernization are economic globalization, capital freedom, industrial informatization, and information networks. Later it is re-categorized as global integration, political democratization, economic freedom, and social informatization. The informatization is called the fourth power to change China. Apart from power, market, and capital, knowledge will become a fourth decisive force which directs the flow of social resources and fortune distribution. It will be a creative force for productivity. [67]

Gao Hongbing is deeply involved in the government's decisions on IT policy. He also devised the three major components of the People's Daily network. These three components are Party news and policies, commercial short messages and advertisements, and bulletin boards. The Strengthening China Forum later became one of the most influential bulletin boards in China. 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.

The up and overs also reveal a new negotiating pattern in the post-Mao era. David Shambaugh concludes that under Deng, a consultative method is an important feature of rationalizing the decision-making process, as various advice is sought, pilot studies are undertaken, and feasibility reports are initiated. "Decision-making became more *consensual*, *consultative*, and *collective*" (Shambaugh 2000, 179-180). Deng Xiaoping advocated the purpose of reform is to "bring the initiative of the masses into play and to increase efficiency and to overcome bureaucratism." He "placed a priority on building bureaucratic coalitions, seeking expert advice, and involving other leaders in

[67] personal communications on November 24, 2002 in Beijing by author

policy deliberations" (Shambaugh 2000, 164, 180). The Chinese leaders, Zhao Ziyang, Jiang Zemin, and Hu Jintao have set up think tanks and research institutes in order to draw upon advice from them. In the United Kingdom, the Department of Information Industry also commissioned an economist from the London Business School, Michael Beesley, to write a report on the feasibility and to recommend how much competition to allow. He developed a radical plan that potential competitors could lease lines from the Post Office and then resell them with or without adding value (Vogel 1996, l75-6). His recommendation, similar to Gao and other IT leaders' recommendation, is that creating competition would have such a positive impact on the incumbent's productivity that this would outweigh any possible cost in terms of lost economics of scale .

A final product is a world IT infrastructure report jointly initiated by the Ministry of Information Industries and President Jiang's key advisor – Wang Daohan. In 1998, Wang entrusted his secretary Shen Jian to write a world report of IT infrastructure. Shen Jian searched all the people working in this area, and eventually decided to invite Gao Hongbing to write this report. He spent several months drafting the basic structure of the report. And then, together with Shen Jian, Gao Hongbing spent half a year in the United States, including the Silicon Valley, Los Angeles, and Washington D. C. They participated in the conferences held by The Global Information Infrastructure Commission (GIIC). GIIC has quite a few members from China, including Lu Xingkui, the former Vice Minister of MII and now the general manager of China Electronics Technology Group. Other two important members of the GIIC include Richard Li, Chairman and Chief Executive of Pacific Century Group and Edward Zeng, CEO of SparkIce. When they returned to Shanghai and delivered the report to Wang Daohan, he

greatly appreciated it and sent to President Jiang Zemin immediately. Here is an excerpt from his article. This article has three parts: The Sino-US Comparison of the Information Revolution, National Security under the Information Revolution, and the Government Strategies of the Information Revolution.

The first part deals with the urge to catch up with the world by developing the IT sector.

> In international relations and international politics, during the transition from a bipolar world to a multi-polar world, information revolution will influence comprehensive national strength, national security, and the combat capability of national defense and the military. The democratic values of the globe will be spread at an accelerated pace.
>
> In economy, industrial privatization is a manifest trend. Public ownership shall not meet the demand of a digital economy worldwide. Economic globalization, an open market, and the demand for a global market are speeding up.
>
> In the aspect of society, non-governmental organizations are gaining momentum. Any government is weakening the control of the Internet on the regulation of the Internet. The private sector is increasing its influence over the management of society.
>
> On technology, with the renovation of the information technology, digitalization has resulted in the revolution from atom to byte; it will bring lots of social issues for the biotech, generic engineering and cloning.
>
> Under the information revolution, it is necessary for us to reassess our national interests and national strategies (Gao and Shen 2001, 34).

On the second part, he compared China and the United States under the information revolution, and points out the gap (digital divide).

> The new round of information revolution, marked by the Internet, has come deep into American mainstream economy. Emerging e-commerce and dotcoms are making the economic transition and resulting in the quantum change of American industrial structure and economic structure. It is a new wave to push the American influence to the world to a new peak.
>
> The Internet users have reached 260 million world wide in 2001 compared with less 40 million in 1996. There are 110 million in the US, accounting for 43% of

the global users and Japan has reached 20 million. Major European countries have reached 46 million.

It is estimated that in 2005 the global online users shall be 765 million. Up to 2004, the global e-commerce volume shall reach 7290 billion us dollars, 50 times that of 1999, accounting for 7% more of total trade volume. A lot of capital, technology, and products shall concentrate in this area, and the global economy is increasing unusually and commercial model is undergoing great changes. The industrial economy is changing into digital economy.

The Chinese economic structure and social system is under the commercial model of industrialization, and is unable to cope with the impact of informatization. The executive control has its limitations in the global transaction through the Internet. Under the impact of the global information revolution, the senior Chinese leaders are facing two-pronged battle and dilemma: on the first front, the contradiction between agriculturalization and industrialization, the gap between the east and west. Without keeping a balance, there will be chaos. The second front, is the industrialization and informatization. The gap between China and the US is huge on technology, human resources, market, and management, a big pressure exists.

Therefore, in order to narrow the gap between Sino-American technology and civilization. It is also very important to maintain military capability, economic capability, and cultural information capabilities balances between them. The end of the Cold War demonstrates that the information revolution has broken the iron curtain and shaken the psychological trust of the Russians, leading to the collapse of the Soviet Union…. Therefore, China should systematically overhaul the political system…and locally produce its human resources, capital, and establish Silicon special economic zones (Shen and Gao 2001, 34).

Then he talks about the political consequence of the Internet,

With the Internet, information cannot be blocked any more. Control is not meaningful. This has a great political impact. Therefore, we can never treat informatization as an ordinary industry. The controversies and problems can be easily dismembered by interest groups if not paid enough attention to.

The core of the information revolution is the Internet, which is different from telecommunications networks. If only treating the Internet as a means of telecommunication, without the national digital nervous system, we are unable to cope with challenges if we do not put it as the strategic foundation of the economic and social development.… It will only take 20 years to set up an information society compared with 100 years of industrialization. This competition over the Internet for globalization and modernization, is broadened to economic, culture, political system and national values.

> Under globalization and informatization, the political party and the government must learn to accept changes, including the values and economic, political changes. It should find resolutions in a greater level of opening and change, adapt unsuitable policies and systems that is not suitable for economic development… (Gao and Shen 2001, 35)

Still, he criticizes the government policy failures.

> The promulgation of polices regulating the Internet should take full considerations of international environment and the images of the Chinese government overseas. News management of ICP, encryption software, speeches on the investment on the Internet by the MII, the information security reported by the Liberation Army Daily reflected a lack of deep understanding and analysis of the Internet. We should choose a favorable way of promoting China's images by inviting foreign investment and equipment. Though we should development highly independent and developed network economy by ourselves, we are in no way forbidding foreign companies and foreign advanced equipment from entering our domestic market. (Gao and Shen 2001, 36)

He strongly calls for getting rid of monopoly of China Telecom and introducing competitive forces into the IT sector.

> On government strategy, the monopoly of telecom sector has increased the cost and risk of the information application, restricted the application of the Internet. The application of the Internet cannot obtain effective telecom resources and services. The monopoly system has also increased the cost of enterprises and twisted the development of the Internet and the normal facets (Gao and Shen 2001, 37).

And, he points out the obstacles facing China's IT industry.

> Without an effective risk investment mechanism and capital investment, we should set up an ecological industrial chain linking technological development, enterprise establishment, risk investment, and investment bank operation together. The venture capital should have profit and retrieval mechanisms, or else such a venture capital system will not be established. We should get rid of the traditional investment and financing methods to use the planned economy for infrastructure building, technological renovation, and bank loans.
>
> We also lack IT senior management personnel. The core of a new economy is human resources. We need a huge chunk of management team who are familiar with technological development, international capital operation, financing management, and commercial models and strategic resource integration. IBM, Microsoft, Lucent have set up research institutes in China to attract local human

resources. We should attract overseas Chinese back to set up new technological firms.

We should also set up a steering committee of informatization chaired by national leaders, coordinate the construction of informatization and devise guidelines for the development to reduce the limitations of the government towards the Internet development.

We should also reform the telecommunication mechanisms to audit the monopoly enterprises and encourage fair competitions in an open telecom networking market. An impartial telecom management organ should be set up to introduce the telecom market regulation into the legal channel.

We should also conduct an overall study of the informatization strategies, set up civilian research organizations, and set up offices at the Silicon Valley to improve the interaction with the US.

1. we should promote the application of the Internet at the top level and encourage the public improve their understanding
2. we should construct infrastructure and encourage the private sectors to join in; and open basic telecom market to more and more operators and investors
3. expand the interconnection to infrastructure and service, online communities and low connection fee
4. introduce competition and lease international business
5. promote the production of local contents, and set up a legal framework to protect intellectual property and copy right provide a virtual email address and open to universities, libraries, and schools (Gao and Shen 2001, 38).

The most startling finding of their field investigation in the United States is that almost all route servers of the Internet (13) are located in the United States. That all route servers are within the US, including two at the military, indicates that all Internet post offices are in the US. This has posed unprecedented security concern for China. The US can easily intercept and decipher the Chinese messages if China does not have its own .cn domain name. This is a serious issue on the independence of a nation's information. In the future virtual warfare, the attacks and counterattacks will involve data control and traffic. Without an Internet center in China, it could not control its flow of information. Therefore, China must shape its independent industries with intellectual properties and

networks under its own control. Thus China must have its own domain name and establish its information infrastructure including PCs, .cn domain name, license center, and research and development centers. This is not just a clash of civilization, a conflict between the Chinese law and economic system, but another round of "Learning from the West (*Yangwu Yundong*)". In this round of reform, China is going to replace its old knowledge system with a new one. China should import not only just equipment from the West, but a series of understandings and concepts in the manufacturing and research sectors in China. Now online content in Chinese accounts for only 0.3% of all online messages. But now that China has 80 million Internet users it is quite possible that by 2010, China will have 200 million users and the content will become vital for the Internet development of the world. With the rapid increase of population, people need more and more information. Most of the information has only access to the US English-based websites. Therefore, China must establish its own information and control system. Thus the power struggle in the future lies in an equal strategic arrangement between the public and private.

It is quite possible that China will rise to be the world's No. 1 country in terms of the number of users is has. In their report to the president, Jiang Zemin, the next generation the international competition will revolve around the height of information. The possible information threat will pose great world dangers. In China the IT sector has brought about 15% of GDP growth each year. IT has brought the Chinese improved productivity, a new resource at hand, broadband consumption, and a virtual society. The Internet has become a multimedia, starting a new revolution. However, 90% of the Internet users go into the United States. 60% of key decisions of the Internet come from

the United States. Eventually, Gao's report aroused intense interest from the state and was countenanced by Mayor Wang and President Jiang. Thus these leaders serve as bridges between the West and China with an amphibious feature.

Assessing Political Impact

It seems that the symbiotic dimension most salient among all dimensions in the public sector. The autonomy of these IT leaders are demonstrated by their creative visions, clever skills, and unwavering bravery in pushing forward national information infrastructure and antimonopoly endeavors to break up China Telecom and introducing new carriers. The policy-making process in this case is characterized by negotiating, bargaining, compromising and non-compromising. Some IT experts were instrumental in the design and conduct of policy making such as Kan Kaili and Gao Hongbing. Some are courageous enough to design national strategies to challenge the monopoly of China Telecom such as Minister Hu. Some are able to use tactics against incumbents such as Peng Peng. Others are conducive to communications between the public and private or between academia with government such as Hu Qiheng and Jasmine Zhang. In this way, they are innovative forces for change in ICT diffusion. However, we cannot make a jump from their contribution in ICT diffusion to political development. The regime simply does not permit autonomous interest groups to operate. Instead, the IT leaders' interactions occurred in a series of special state commissions and joint research and ministry initiatives, with the state-owned ICT corporations and the state security bureau taking growing roles. Their impact on political development is still limited. They have

not institutionalized channels for civic participation to make the state more responsive to social demands.

On the symbiotic dimension, IT experts like Gao Hongbing, Shen Jian, Dr. Hu Qiheng, Dr. Zhou Qiren, and Dr. Kan Kaili actively participate in the process of policy making and focuson the unwavering principle of competition. They keep these themes alive in the public discourse, thus contributing to conceptual changes during a period of uncertainty in strategic restructuring of China's telecommunications industry. Compared with policy-making in the case of the MEI coalition breaking the MPT monopoly back in 1993, the voluntary participation of academia and private sector made the policy-making process more open and more transparent. A caveat here is not to treat the "state" as a unitary entity. There are some officials who are quite liberal in pushing for ICT diffusion. And there are also conservative incumbents against the liberal reform. Therefore one important contribution these IT leaders made is to mobilize support within the government. As the regime is reforming itself, political institutionalization heavily depends on those designers and trendsetters. Thus, the input of these IT leaders becomes crucial in enlightening people and choosing the right path to go forward.

On the parasitic dimension, not all of their attempts are successful. That Peng Peng was demoted from President of China Railcom is a lesson that these IT leaders may lose in power struggle with incumbents. This is an important case to illustrate that IT leaders are unable to challenge the despotic power of the state, the authoritarian hierarchies and its irrationalities against political liberalization. Qi Mingqiu, the president of Ji Tong Telecommunications Co., Ltd. (the company under MEI to undertake all Golden Projects), lost the power struggle and was excluded from the

leading group at the inception of China Netcom Group when Ji Tong merged with China Netcom. Prof. Zhou Qiren, of the Chinese Economics Research Center of Beijing University, contended that the state-run monopoly of network infrastructure have no incentive to stop charging monopoly pricing, nor any incentives to reduce costs through innovations. Unlike policy recommendation to use state power to monopolize network infrastructure or to maintain the status quo, Dr. Zhou's argument on the necessity of redundant construction to reduce social cost was not adopted by the policy makers, and only at best served as an alternative.[68]

Their political impact cannot be exaggerated because there is an important conditional variable (or prerequisite) for their political influence to become effective—the acceptance and support of central Politburo leaders. Apart from the economic potential of the IT sector for leapfrogging development, there are two pragmatic reasons for the state to initiate IT reform. One is the inefficient bureaucracy between a hierarchical rule of the Central communist government and the honeycomb web of informal horizontal ties at the local level. It is this fragmented authoritarianism that has given rise to China's building of a national information infrastructure. The other one is its ideological control. The state leaders view a strong information network may actually contribute to a better control of society. [69] President Jiang Zemin used to be the Minister of Electronic Industry and thus was enthusiastic about ICT agenda. He argues that IT, especially Internet technology, "is going to change the international situation, military

[68] see Huang 2002, Chapter 4.

[69] In a roundtable discussion in Shanghai (June 30, 1998), "Shaping China for the 21st Century," President Clinton remarked: "In your economic growth you will almost leap over a generation of economic experiences that older European countries and the United States experienced [so] you will essentially be creating an industrialized and a post-industrial society at the same time. And therefore, more quickly you will have to educate more people at higher levels than we did." See Bell, 1999, Foreword.

combat, production, culture, and economic aspects of our daily life significantly" (Lovelock 2000). The Chinese government felt that to promote ICT competition may help China leap frog development.[70] As a result, many Chinese officials and entrepreneurs go to Western countries or invite foreign experts to study the role of IT on national economy. These are factors instrumental for the ICT diffusion in China, which are *unrelated* to the IT leaders' effort.

There are other intervening variables that may have an impact on political outcomes. Most important are structural concerns by the top political elites may greatly impact their decisions on ICTs. In China, the decision to break up China Telecom may largely reflect broader concerns of joining the WTO. Thus the advisory roles of these IT leaders cannot be overstated. In Brazil, President Cardoza had staked his administration's reputation on implementing an aggressive and effective privatization campaign (Wilson 2004a, 139). This determined his support for the "Gang of Four" and privatization of Brazilian telecommunications services. In China, the policy makers accept some ideas from these IT experts in part to maintain a balance between *fang* (relax) and *shou* (control) -- to maintain political order while promoting economic growth. Thus these IT leaders helped fine-tune governmental policies to initiate a series of institutional adaptations to muddle through.

[70] J. P. Singh uses the term "leapfrogging development" to describe how IT can help developing countries accelerate their pace of development and connect with the world economy while also facilitating the development of social and political dimensions. 1.IT can help developing countries skip over the stages of development and become members of a postindustrial society. 2. Leapfrogging is used in "an engine of growth" sense that technologies can help developing countries accelerate the pace of development and promote sustainable development. 3. Leapfrogging is used in a technical sense to signify skipping over the technical frontier or product cycle, see Singh 1999, Introduction.

This chapter focuses on IT leadership in the public sector. The breakup of China Telecom and establishment of a national information infrastructure should not be interpreted as logical and rational elite behaviors in China, but as the key products of autonomous visions, symbiotic strategies, and negotiating behaviors of IT leaders. I leave room for agency in order to free us from the deterministic lockstep inherent in inquiries that begin with preexisting structures. It reveals that new rules and institutions in the ICT sector governing competition and decentralization at the state level are active pursuit of IT leaders instead of situational reactions to market initiatives. Thus political change towards better institutional performances as the state responds to civic needs is often an unintended consequence of men and women in pursuit of their collective interests for multiple national information networks through breaking up the monopoly of China Telecom. In so doing, leadership analyses allow the possibility that transitions will lead to innovative outcomes that break with habit and routine. Even though their primary motive is for the sake of the survival and interests of respective ministries, they based their career on a vision of more connected and competitive ICT networks. This autonomous dimension of IT leaders is vital for the ICT diffusion in China.

Their symbiotic relationship and negotiating tactics with the state reveals that they are fine-tuning state policies as innovators. Some IT leaders were active in the policy process, thus intervening in the specific design and conduct of the regulation in the ICT sector. Some are open to publicize their ideas, devising strategies to dismantle monopolies, and bargain with the government over key issues like pricing. They have, intentionally or unintentionally, helped create a more open, more legal-rational, and more humane government by engaging the state and society in a mutually constructed process

of learning and adaptation. And this ambitious group is willing to use their own authority and political skills to overcome and circumvent the resistance to reform, to bring bureaucrats in line and to lead public opinion by taking firm positions on contentious issues. This counts as an important step toward political change in China.

However, their failures also reveal that the patron-clientelism of the Communist regime can put an end of their political career if they go too far. The "double jeopardy" facing the president of China Railcom reveals that the strong resistance from incumbents at MOR may derail the reform process if the reform goes too far and challenges their vested interests; at the same time, if the IT leaders operate according to standard procedures, the new business will lose its competitive edge. Thus, with a weak horizontal tie and a strong hierarchical Communist regime, they are at best a non-critical realm of social elites. In the next chapter we will also find similar replication of this pattern in the private sector.

Chapter 4: Leadership in the Private Sector:

Internet Service Providers (ISPs) and E-Commerce Pioneers

This Chapter attempts to discover tactics employed by new private ISPs to establish their business and expand their spheres of influence and to explore our hypothesis that social background and experiences shape IT behaviors. The criteria I choose as IT leaders in the private sector is based on their influence and reputation to see whether they enjoy "autonomy". Jasmine Zhang (Infohighway, Genesis Capital), Michael Wan (Net China), and John Wang (8848.com.cn and 6688.com) serve as examples of the courage, craftsmanship, and creativity that these IT leaders have in pushing for the new market entry of e-commerce enterprises. They are well-known in the private sector as pioneers of ISPs and software industries in China. Compared with IT leaders in the public sector, their autonomous dimension is more developed. The IT leaders at the private sector were creative and courageous enough to introduce new concepts and technology for the masses. Some of them have also shown a high level of social responsibility by engaging in numerous environmental, charity, and humanitarian activities. While at the same time, however, they are symbiotic with the state and can receive favorable deals. For example, they negotiated with the state for pricing reform and they sometimes undertake independent research concerning online issues and report to state institutions. This may help the state gain a better understanding of civic needs, but these IT leaders are not vanguards of political liberty. Their primary interest is still

their business. These social inputs are mixed with their motives to be part of the establishment, not necessarily aligning with the civil society. There is no doubt, through their efforts, the state becomes more responsive and the rules concerning the ICT diffusion were made clearer than before. However, even though these IT leaders may sometimes channel social demands to the state, they are not, and do not intend to, establish formal links between state and society. Their amphibiousness character helps us understand their dilemma in the ICT reform process. On the one hand, they seek formal channels at state conferences and hearings to start their business. On the other hand, when they are frustrated by these attempts, they rely on personal ties for licensing and price reform. Their publication and advocacy yield limited, but sometimes noticeable, pressure for the policy makers to be more responsive to social demands. Coupled with the structural imperative of entrance into the World Trade Organization (WTO), the state has adopted measures to open new markets in the telecommunications sectors. In this regard, these IT leaders may be a catalyst for political changes towards a policy of transparency and accountability. The three examples presented in this chapter become windows for discerning changes in the state-business relationship during the transitional period in China. They represent the first attempts for private sectors to participate in face-to-face bargaining with the state *voluntarily* and *actively*. As one of the IT entrepreneur Michael Wan (ChinaNet Co., Ltd.) says: "Although we might be the first few ISPs sacrificed in the competition against the monopoly of China Telecom, we are willing to be pioneers."[71]

[71] Personal communications on December 10, 2002 by author in Beijing.

However, there are many private entrepreneurs in the ICT sector who are not interested in political issues facing the ICT reform in China. Their prima facie interest is still business. Even though they attend some symposiums organized by government, they only want to make some connections in order to sell their products. Therefore, the run-of-the-mill elites are not the concern of this Chapter since the dissertation is interested in those leaders who play roles in China's ICT diffusion so as to test whether they are instrumental for political changes in China. This is a "crucial case" study that only those influential IT elites will be studied here. My goal is to see whether social background affects IT leaders' attitude and behaviors; or putting it differently, how to explain why these people act differently.

This chapter will focus on three well-known ISP leaders: Jasmine Zhang the founders of Inforhighway, Michael Wan, CEO of Net China, and John Wang, President of Mt. Everest Software Co., Ltd. Edward Zeng, the founder of Sparkice and first Internet Cafés in China, was already studied in Chapter 2. They share similar traits, but they also differ in their political opinions and approaches. An example their creativity is that they use the internal calculation methods from China Netcom to provide convincing statistics against the unreasonable pricing of China Telecom. They used China Netcom as a way of balancing the demands of all social strata that wanted to check the possible corruption of China Telecom. Under intense social pressure from IT leaders such as Jasmine Zhang, the first public price hearing was held. At the same time the State Council also set up an investigation committee to study the pricing issues. Now the question here is: Are China's IT leaders emerging asagents of socialization and liberal reform in ICT diffusion, and does their performance in turn contributed to legitimating

the new system? Again, even though all of them achieved business success to a certain extent, their approach to politics and the final outcome were still different. Jasmine Zhang and Michael Wan were more active in pushing for the agenda of pricing reform, while John Wang kept a distance from politics. Jasmine Zhang and Michael Wan initially challenged the monopoly of China Telecom, but they ended up being satisfied with the personal ties for business interests. John Wang also got a favorable deal from the government at a time the government sought to cultivate some demonstrative work in Zhongguancun. Their symbiotic and parasitic dimensions eventually dominated and it remains to be seen whether these IT entrepreneurs would be vanguards for political changes in the Western sense.

The Autonomous Pursuit of Individual Initiatives

Internet access service in China started in 1995 and five different kinds of services emerged. The ISPs provided network accesses and affiliated online services to consumers via leased telephone lines from China Telecom. The first couple of ISPs were Infohiway and Net China, which were registered in 1995. China Byte became the first ICP (Internet Content Provider) on January 15, 1997. The first IAP (Internet Application Provider) on web hosting, WayX Net Solution, inaugurated its business in April 1997. With the advent of venture capital in 1998, more and more ICPs joined the fray to compete with each other. Some ICPs mushroomed such as Bookoo.com which sold books on CD-Roms and Fudao.net which provided online banking and financial services (ICPs will be discussed in Chapter 5). At the same time, more IAPs entered the market. IDC (Internet Data Collection) also came into being. They provide web hosting, web

solutions, and databases to government, business entities, and individual consumers. Finally, the first ISPs went to software businesses.

The First ISP Crusader

Two days before May 17, 1995, the International Telecommunications Day, Jasmine Zhang registered Beijing Information Highway Technology Company (BIHTC), the first well-known private commercial Internet service provider (ISP) in China.[72] This marked the beginning of private Internet service providers and content providers. Jasmine Zhang's story is that of a bright woman who made the first attempt as a private entrepreneur to challenge the monopoly of China Telecom. Brought up in a quasi-religious environment when "only science can save China", her growth is a result of her education in science, impulse to make a fortune, and a spiritual pursuit for self-actualization. She majored in chemistry at China University of Science and Technology in Hefei, Anhui Province (east China) in the early 80s. Leaders are always associated with transgressing accepted behavior and their lives are full of exciting moments. Zhang's story is no different. What distinguished her was that she was made the first ever Chairwoman of the Student Council of a top university in China. During her school years, she was active in social activities. Later she was sent to the graduate school without examination as an excellent student at the recommendation of his department in 1986. Upon graduation, she rejected a job offer at the China Youth League because she was afraid that to climb the ladder of hierarchical governmental establishment would sacrifice many precious things in her life. Instead, she chose to be a journalist at China Science Daily. Later she realized that newspapers were nothing but the mouthpieces of

the government. "The brain does not belong to myself," she sighed, "I was disillusioned then I got married and gave birth to a daughter."[73] Even though she spent three years at High-Tech Bureau of Chinese Academy of Science (CAS), she still felt that she had to release her latent energy. In 1989, CAS was discussing one academy with two systems. It was aimed to set up a branch that can apply research to production. Legend became the first successfulexperiment by prioritizing "trade" to "technology" and "industry" (*Mao Gong Ji*). When she witnessed the success of market initiatives at CAS, she decided to start her private business under the calling from Deng Xiaoping—"getting rich is glorious." Jasmine Zhang felt that she was not made to be a businesswoman, but the commercial circle proved to be the freest space for her to give full scope to her capabilities.

Getting Rich is Glorious

When asked whether China's business people are only interested in money, not politics, she disagrees:

> Not everyone is born a businessperson. When we went to university, many of us did not know if we would go to business. But our world outlook was shaped in earlier experience and we want to fulfill our independent pursuit. Thus we find that the commercial area has most free space, an area that can give us full scope to our abilities. Therefore, when we have made some fortune, we would seriously engage in further pursuit of life meaning. Thus, I go to traditional industries in order to try to find a way out to utilize the information technology to elevate productivity. I find this is a bright future for China, not just for the money's sake.[74]

At the end of 1991, she "jumped into the sea" (*xiahai*). By the time she left CAS, her official salary was only 122 *yuan* RMB (about 45 US dollars). She complained to her

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[72] Ying Hai Wei was named after the Chinese pronunciation for the term "information highway"
[73] personal communications on April 5, 2004 by author in Beijing

superior that the Communist Party had extorted her extra values. So the purpose for her to do business was simple and straight-forward: earn quick cash. She went into paging service first, which was the earliest open sector in the IT industry. But it did not last long because of the "red tape" with the government. At that time, paging service needed to go through two processes: one is interconnecting lines controlled by the Ministry of Posts and Telecommunications and the Frequency, which was controlled by the administration of wireless resources at the State Planning Commission.[75]

In 1994, Zhang visited Los Angeles, amazed by the BBS (Bulletin Board System) and e-mails, "my instinct told me that this way of communication had great potential." After this American trip, she sold their paging business. It was a new way of telecommunications to link millions of Chinese people. In 1995, she got seven million yuan (around 1.3 million USD) and registered Beijing Infohighway Communications Co. Ltd. The Internet was unknown to the Chinese then. Zhang was so enthusiastic as if she was bequeathed with a historical mission to bring the Internet to the ordinary people. She exulted, "We are doing something glorious for the future. I would like the Chinese people to enjoy a bright future unfolded by the information technology."[76] Thomas Jefferson's famous motto—"Enlighten the people generally, and tyranny and oppression of body and mind will vanish like evil spirits at the dawn of day."—has its modern application to the virtual revolution. She realizes it is not a separate domain but *a set of*

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[74] ibid

[75] During this period, she had also organized a recital for a rock star, Cui Jian, made some fortune. Cui Jian's recital was banned for three years since 1992 because in a song he covered his eyes with a red cloth--"with a red cloth, I can see nothing." This offended the Ministry of Culture and it suspended his popular concerts.

[76] Personal communications in September 4, 2004 by author in Beijing, She also agreed with Wilson Dizard Jr. that the networked society promoted by IT is a work of civilization, comparable to the great cathedrals of the Middle Ages or, in modern times, to the Panama Canal and the Apollo moon missions. See Dizard Wilson 1997.

changes that*pervade* all aspects of society and reorganize all older relationships.[77] With the Internet, venture capital came into China and played a pivotal role for the enlightenment of local venture capital and development.

Her ambition to "build up a network for common people" earned her fame as the first ISP crusader in China. "At that time we were so naïve," she complained that she had to spend lots of time persuading people to accept the Internet because nobody had heard of the word "Internet". But she did not realize that the real obstacle was the regulators. The decision makers on ICT issues were torn between categorizing the Internet as an information service or telephony service. Finally these IT leaders persuaded to categorize the Internet as an information service. The information service is open to market while the simple telephony service is regulated strictly.

With their efforts, the Infohighway and several pioneering ISPs entered the market as information services as identified in the MPT 1993 notice. Jasmine Zhang studied the whole industry. She sought to understand whether the Internet would bring changes in the quality of life and whether technological innovations would bring systemic innovation. She began to set up her own physical network and rented DDN and interconnecting lines from China Telecom. What Infohighway offered was a Chinese language software package that gave her customers' access to a variety of on-line information, including news, BBS, entertainment information and even online games. She also provided a range of services to her customers, including basic ISP services such as email, FTP, telnet and web access, and on-line services through her "Information

[77] The infrastructure industrial society was transportation-ports, railroads, highways, trucks, airports- which made the exchange of goods and materials possible. However, the infrastructure of post-industrial society is communication: cable, broadband, digital TV, optical fiber networks, fax, email ISDN (integrated

Highway Space" that included news, talk forums, financial quotations, education and even online games. In other words, it was a nearly full-service ISP and ICP with only 10,000 Internet users.[78] Then she bought routers from Cisco PC server from HP and all the software system. With these equipments, she sent her Chief Engineer to visit Bill Gates and set up a complete TCP/IP Internet system. She sighed: "we were just like peasants starting from sowing the seeds," sounding like Edison when he invented the light bulb.[79]

> The initial setup of Infohighway was a number of people with outrageous ideas. Bill Gates started with a different idea and persists on that and became successful. But in China we do not have that thoughtful and wise people. Everyone is only interested in immediate profits, and nobody seriously ponders what they should do in their lives. We started with BBS, because we believe in a closed society like China, people need interactions. So several people just started. At that time, we want to make money. But through the interaction with the Ministry of Posts and Telecommunications, I realized all the problems. And I started to push to a different direction. [80]

Thus the autonomous pursuit characterized the first generation of private IT entrepreneurs with their pioneering spirit.

Political Awareness

These private leaders have their autonomous pursuit of life through the Internet. After her initial efforts, she gradually felt as if doing something important, as if a historic mission was entrusted on her. They start to cherish broader concerns for the nation.

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systems digital networks, combining data, text, voice, sound, and image through single channel). See Daniel Bell, Foreword 1999.

[78]She set up an 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 saw this promising. Therefore, she restructured capital structure. *China Fortune Group* (Zhong Xingfa) had 66%. In 1996 she got 50 million *yuan*. She put up a fashionable slogan "how far is the Chinese to the information highway". Personal communications on March 2, 2004.

[79] ibid

[80] Ibid.

> Edward Zeng and Charles Zhang are not the real IT champions, because they only want to make money and fame. They do not know strategies and the roots of Chinese politics. Charles returned from MIT in order to make a fortune and it happened that the Internet becomes a fashion. He might be opening up another Hardrock Cafe if entertainment is a fashion. So these people do not know what China really needs and what their historic mission is in the Development of China.I have been on the cover of a famous magazine *Chinese Entrepreneurs*. I have known at 50 tycoons on the *Forbes* 500 riches. From what I know they are all cheating for money. Nobody really has any sagacity or resource to pursue a worthy life. Media is only interested in reporting or twisting what I mean. It needs some people to seriously think what we should do. [81]

She is wary of the broad socio- political context of information technology. "We did not realize thatthis industry needed a grand eco -system." She mentioned the "original sin" of China's ICT sector. China has not "informationalized" or reached the stage of the information society. For a country to reach the stage of information society, according to Zhang, economic liberalization, political democracy, and post-industrialization are three necessary components. "China still has many feudal traditions, so many aspects of society are controlled, how can China really reach the stage of an information society?" There are many inherent systemic obstacles for China to create an information society. For one, that China cannot leapfrog the stage of capitalism and as many as 60% of the Chinese population is poor. Also, there is no longer a unified ideology for the Chinese people that would encourage them to pursue a certain common goal, as was the case in during Communist revolution. In lieu of a unified ideology, people attribute everything to the "Chinese characteristics". She said: "President Jiang Zemin has vulgarized the ideal of Communism in the recent 16th Communist Party Conference by saying that to reach Communism is to get rich and better-off. Is this what Marx and Lenin pursued?" [82]

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[81] personal communications on April 5, 2004, Beijing by author
[82] ibid.

She believes that the whole process of political changes adapted for the ICT diffusion is like dancing the Tango-- three steps forward and two steps backward. One can make a fortune if she knows how to step forward, but if she does not stop when she should step backward, she will be endangered or even put to death. As political outcomes emanate from interaction and bargaining, implying a second-best compromise between state control and market liberalization. Sheunderstand s that the major improvements of the Chinese government is that it has been able to meet crisis with change, but change braced by stability, with an emphasis on administrative competence and a political culture of consensus and co-operation. However, the Communist Party's adversarial stance towards transparency and accountability is a challenge facing all new market entrants.

Joint Efforts for Licensing, Pricing, and Interconnection

The autonomous character of the private IT entrepreneurs is also derived from charismatic leadership because they have new concepts that would make things change in a positive direction. These leaders were persons of great *curiosity* throughout their lives. Many of these IT leaders also had a very *creative* mind when they were young. For example, Michael Wan has a talent for both technological complexity and social activities. In 1982, he got almost 100% in his mathematics college entrance examination and went to the Central China Institute of Technology. He was active at the Study Department of the Student Council and organized numerous discussion forums and salons. Later, he went to Tsinghua University to pursue his graduate studies in the Wireless Department. He became the Chairman of Student Saloon and could present a

speech before tens of thousands of people. His eloquence was not only due to his activities, but also because of his readings over all kinds of topics, including Nietzsche, and other social, economic, and political issues. He invited provincial governors to Tsinghua University and delivered speeches there, making his academic work quite a hit. At Stanford, he completed two years worth of courses in nine months. At the end of 1998, Michael Wan, together with Jasmine Zhang, struggled against the monopoly of China Telecom by establishing an enterprise alliance to work for the reduction of network service fee and achieved a success by starting the first telecommunications price hearing at the end of 1998.

Jasmine Zhang and Michael Wan referred the pricing issue to the Law of Price and finally the State Planning Commission agreed to organize such a hearing. Michael Wan was selected as the representative for the ISPs. With the endless bargaining, the monthly rent of 2 M data lines has been lowered from 4 million yuan to 430,000 and eventually reached 80,000. Thus the access fee for the Internet users has been lowered from 20 yuan/ hour to 4 yuan/hour. Now Michael Wan is nicknamed "Player King" by consumers because he was easy going and had an optimistic attitude against odds. He invited 50 million yuan in venture capital and owned 60% of Net China shares. His company also offered unlimited access to the Internet at an affordable public rate of about 35 dollars (RMB 300 yuan) per month. Michael Wan serves as an "outsider" example that opened external challenges against monopoly.

The Kafkaesque Sequences

The barriers blocking these private ISPs from getting licenses was revealed during a talk between Michael Wan and Ernest Wilson (Wilson 2004a, 239-240). First, a business person needed to apply for a license. Wan referred to this as only a "paper license because it doesn't mean anything; it's just on paper, not in reality. It doesn't entitle you to anything more than to go to the next step. But even here, you can never get even the 'paper license' on the first try, you need to go again and again. And this doesn't guarantee that you will get the next things that you need." One's company must also submit its business plan to MII/China Telecom. "This is ridiculous, since China Telecom is also in the same business as we are as an ISP retailer. This is like giving your competitors your whole business plan!" He added, "What they try to do is to force you to team up with them, then they either absorb you or run you out of business. They can undercut your every price, and then when you're finished, they raise the price again" (Wilson 2004a, 239). This marked the initial attempts by private actors to challenge the irrationalities of monopoly from external side.

The next step was for an applicant to get a telephone line. This cost $2,000 for installation, and then for ISPs a monthly charge of $300 (Regular commercial monthly cost is about $150, and much less for residential). Then one could apply for a leased line. In the U. S. a lease line was about $1,200 per month. In China four years ago it was $80,000 per month. Later, one must register with Ministry of Public Security. Finally, ICP/ISP then must also submit to content regulations, so managers must do a great deal of self-policing. As a result, the customer got bad service, slow speed, no content, and very high prices. Wan reported that such virtual harassment is the main reason that while

more than 500 ISP licenses have been issued, perhaps only 10-12 operated an ISP at the end of 1999.

After Wan established his Net China in 1995. He became one of the pioneers of ISPs in China. He started the 300 yuan/month rental service and provided free training to his customers. In 1996, Wan launched an enterprise coalition and requested to lower the network charges. He also started the structural adjustment of the telecommunications fees.

Dialogues with the Government

In all the countries where the Internet spreads rapidly there is a "*big bang"* from outside of the political system when, like an exploding universe, the perception of an information age spreads quickly and widely across all governmental institutions. There is also a *"small bang"* within the existing establishment when an implosion released years of suffocated aspirations for renovation and change (Cowhey 1990). This guided the efforts of private ISPs in obtaining the government's support for ISP from the State Council. It also coincided with the state's National Economic Informatization Initiative. The leader of this Initiative, Vice Premier Zou Jiahua visited the Xun He Group, the parent company of China Online in April 1997. China Online, launched in Shenzhen, became the second private commercial ISP. For the Internet commercialization, China Online in the South and Infohighway in the North quickly spread beyond their local areas with much broader national influence and reputation. But the free market entry of the ISPs did not last long. On February 1, 1996, the State Council issued an interim order on

Administration of International Networking of Computer Networks.[83] The order restricted the networks' access to the global network by requiring all networks to exclusively use the international channels provided by the MPT (Taylor 1997, 633). In the West, this order was reported as a government "crackdown" on Internet usage.[84]

In response to this, Infohighway sponsored many dialogues with government officials. They are what Wilson calls the "Quad" efforts— coordination between liberal officials in the public sector, entrepreneurs at the private sector, researchers, and non-profit organization actors who cooperate with each other have their input in the process of ICT diffusion. On August 17, 1996, they organized a Symposium on the Law and Policy Governing the Internet. They invited government officials from relevant governmental organs, including the State Council's Steering Committee of Informatization, the Legal Bureau of the State Council, and the Education Science Culture Committee of the People's Congress, the Intellectual Property Rights Office of the Supreme Court, the Legal Bureau of State Publication Bureau, the Ministry of Public Security, and the MPT. An official explanation for ISP licensing from Beijing Telegraph Bureau, is that the new order was to ease the free market entry of the ISP under the umbrella of information service rather than information control over the ISPs. It greatly relieved the tensions between newly emerged private ISPs and the government. The significance of this Symposium was a first attempt for direct contacts between *the private* sector with public

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[83] On December 11 1997, the State Council approved it. The Ministry of Public Security implemented this order later.

[84] According to a report from Reuters, "The regulations cover a wide range of crimes, including leaking state secrets, political subversion, and spreading pornography and violence." "China's Net Regulations Begin," *Reuters*, 30 December 1997. The U.S. Embassy in Beijing reported, "Chinese government sensitivities about control of information coming into China are reflected in the strict controls it maintains over publishing, broadcasting, and electronic communications, including the Internet." US Embassy, "New PRC Internet Regulation"; available from http://www.redfish.com/USEmbassy-China/sandt/sandt.htm; Internet; accessed 11 January 1998.

officials from the ministries, the legislature and the judicial branch. This symposium served as a channel for information sharing and opinions exchange on policy and legal issues.[85] As to the impact of the symposium, it contributed to closer private-public coordination. Liu Zhengrong, director of the Internet division of the Media Bureau of the State Council, acknowledged the importance of these interactions. "For everypolicy and regulation over the Internet, we hold discussions between the ISPs and us. We either went to them or they went to us. They can call me directly... We also study Internet regulations developed in the West as our references."[86]

Thus Jasmine Zhang and Michael Wan attempted to reduce the cost of the leased line from China Telecom. The monthly rent for an interconnecting line from China Telecom was 6000 *yuan* (800 US dollars), when she left the company was only 168 *yuan* (20 dollars). She told me the company was losing money all the time. She stormed into the office of Leng Rongquan, general manager of China Telecom and accused him of being the chief criminal of China's information industry. He laughed, saying that their financing was controlled by the Ministry of Finance.[87] The leasing fee constituted about 70% to 80% of the ISPs' costs. From 1996 to 1998, through media and direct lobbying, the ISPs repeatedly appealed for reduction of the leasing fee. The State Council's Steering Committee of the NII twice invited Infohighway to discuss the pricing issue. The MPT officials even directly asked for specific pricing numbers under which Infohighway could survive.

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[85] See "Briefings of ISP Discussion in Beijing," *IT Industry Weekly* 10, (1996), 16. (*Weekly* is an internal publication by Infohighway)
[86] In 1996, Lucent invited officials to study policies of ICT regulations. Personal communication, November 19, 2001
[87] personal communications on April 5, 2004 by author in Beijing

On December 29, 1997, the People's Congress passed the Pricing Act. Article 23 requires government agencies in charge of "utilities, or production under natural monopoly conditions" to hold public pricing hearings with consumers, producers and other relevant parties.[88] At the request of Michael Wan, the table for the hearing was round and included public, private, and academic groups along with consumers. Wan told every participant that it was a historic first for China to adopt a Western approach for price hearings. And he also proposed that a principle of "Democratic Centralism" would be applicable. This is to ensure a free and open discussion at the round table while disputes were kept from outsiders. In this way, the MPT officials had to act in a fair and just manner to implement reforms without losing its face to the public. At the request of these IT leaders, the leasing fees for the ISP were reduced several times in 1997 and 1998. Although the leasing fee is a narrow issue that only affects the individual ISPs involved, their lobbying efforts led to the institutionalization of public hearings on telecommunications pricing. This is an important public policy that has a broader impact in society. By raising questions and establishing direct communications with government officials, the ISP entrepreneurs contributed to a more transparent and consultative policy-making process on the important policy issues.

During the discussions, Michael Wan proposed to establish a trade association as a regular link with the government and he received a positive response. After the meeting, the first ISP association was organized in 1997. The significance of this very loosely organized and short-lived trade association cannot be underestimated. The *voluntary* nature of the association and its aim at promoting the collective interests of business companies made it a departure from previous norms. It started to report the

[88] See Pricing Act of the People's Republic of China (Beijing: Legal Publishing House, 1998), 9.

opinions of the ISPs to the government, who readjusted industrial policies and organized international exchanges. In 1999, he promoted Free PC, and advocated the development of Linux, which aroused the attention of the government. In 2000, he promoted the network security and application and joined the government networking project. Even though their efforts do not result in direct and concrete policy outcomes in every aspect, their autonomous and creative pursuit certainly helped the coordination between the public and private sectors.

Tapping New Turf of E-Commerce

Leverage for Traditional Industries

After early successes, these leaders learn from their past failures and start to move in new directions. Jasmine Zhang, suffering from a shortage of investment, quit her CEO position at Infohighway in 1996. She thought hard and turned to the capital market when she set up Genesis Capital in Hong Kong. As an investment consulting and venture capital firm, Genesis Capital's mission was to create a world-class Chinese enterprise, and growing with them. The focus of her business becomes the "New Economy".

> We think that it will be difficult to understand the Chinese "New Economy" if we do not put it in a broader social context—economic reform and development, market opening. This environment has been here for over 20 years now. The truth is that the development of "New Economy" in China has not taken a path that we have seen in the developed economies such as the US with a full-fledged linkage to the global economy. On the contrary, the transition to market economy and the efforts to become part of the global economy has not yet finished. As the biggest developing country in the world, China has a hard time to get rid of the residual shackles from transition. Building up a business in the Chinese "New Economy", one should not lose sight of such facts. Business models that are simple copies from those successful ones in the West do not automatically translate into success.

> The New Economy with the Internet at its core is a knowledge-based economy. It is characterized by worldwide deployment and applications of information technology and Internet, especially e-commerce. Amidst the development of the new economy, we have witnessed a steady improvement of economic efficiency and productivity. With the advent of the Internet and its widespread deployment, economic globalization has also deepened. An entity has to embrace innovations in order to keep abreast of the economic tide.
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> At the core of "New Economy" lies the further development of informatization. This line of development has taken a grand design (rapid growing size of fixed line telephone, wireless, cable, Internet, PC, and TMT sectors) in recent years and technology investment has become a key component of China's GDP. China has become a significant player of this sector in the world. The Chinese government in recent years has promulgated "Industrialization Driven by Informatization" and this has signaled a clear direction for the Chinese "New Economy". We are well positioned in going forward under this direction. [89]

The Chinese characters of Genesis Capital –Lian He Yun Tong reflect her core ideologies. "Lian"-- "Connect" by building an open platform and framework for partnership and cooperation; "He"—"Harmonize" by creating the best place for attracting the best people to excel: "Yun"—"Opportune" by capitalizing our accumulating resources; "Tong"—"Create" by providing a channel for "local & overseas, technology & market, capital & business, policy & economics".

Then she realized without a broader understanding of the information society, she could hardly make a difference. But she soon she found a way out of predicament. She points out how IT can integrate traditional industries to give scope to greater potentials of the "four modernization" of the Chinese development. Efficiency is manifested not only through its quantitative way of energy-saving in communications, but also in its qualitative change of initiating profound technological and social transformations. IT creates value-added services and increasing returns to scale and is often capital saving in the next substitution (i.e. fiber optics for copper), uses less capital and produces a more

[89] A brochure introducing this company Genesis Capital obtained by author in September 2004.

than proportional gain in output. "The real impact of the Internet upon Chinese industries is to enhance the restructuring current industrial system", she told me. The role of IT leverage is two fold: one is the information technology development itself, the other is the industrial restructuring and readjustment as a result of informatization. Advances in the information industry and traditional industry renovations are a mutually promoted and integrated process with social reform.

However, she cautions on the obstacles of the Chinese IT industry. "If we are to compete globally, we must apply ICT as a new leverage to upgrade all organizations and companies. But not everybody appreciates this need first. We had to go to industry and help them recognize the problem and to introduce new procedures and processes." Therefore, she realized the importance to penetrate traditional industries with the information technology.

> As you know the policy "informatization leading industrialization" is put forward in the Chinese national guideline. How to implement this strategy is a serious topic. The real issue is property rights. China is still a planned economy, most industrial resources are monopolized. Therefore, there is a potential increase from the emerging market. Many productive resources and factors are semi-closed and cannot free flow or be fairly restructured. Our traditional economy is not marketized, therefore, without a fair, open, free-flowing and orderly resource environment, the role of information for restructuring cannot be implemented. The most important issue for informatization or new economy is based upon the renovation of traditional economy. In the coming five years, most industries will position themselves in global economy. Informationization should become the core productive force in the traditional industries.[90]

[90] Personal communications in April 4, 2004 by author in Beijing. She is keen to make the Internet enlighten people. This reflects her feeling to catch up with post industrial society. She was quite aware of a roundtable discussion in Shanghai on June 30, 1998. In the speech, "Shaping China for the 21st Century," President Clinton remarked: "In your economic growth you will almost leap over a generation of economic experiences that older European countries and the United States experienced [so] you will essentially be *creating an industrialized and a post-industrial society at the same time.* And therefore, more quickly you will have to educate more people at higher levels than we did." See Daniel Bell, "Foreward 1999".

Zhang is an example of a private IT leader who constantly sought new meanings for her career and the future of China's development. Even though she is in the world of business, she is fully aware that business is only a free space for her ambition to make a difference in history. Thus she represents extraverted and outspoken IT leaders with autonomous beliefs and pursuits in the ICT sector. In contrast, John Wang is a more introverted, a down-to-earth software businessman who understands that politics must be approached neither too closely nor too distantly.

Local Government Supports for Software Industry

An early pioneer of e-commerce is John Wang, who organized the largest online wholesale transaction platform in China. In 1962, Wang was born in Fuzhou, Fujian province. Nicknamed Lao Rong "Old Banyan", John Wang, former CEO of 8848.com, believed it was a piece of cake to study Chinese and mathematics in late 1970s. He skipped the fourth grade at primary school and instead traveled throughout China at the age of eleven when he would only pay 1/4 of an adult train fare. This trip imbued him with the aspiration to become a great man. At that time, only students who were three years older than him could take part in the national college entrance examination. The principal of his high school consented to his taking part in the examination only if he could rank among top three of senior high school students. He was ranked first at the end of the year. People praised his "talent" and he replied, "Actually maybe I was gifted at first. But I do not think talent really makes that much difference. I feel that the most important factor for my later growth was that I was interested in almost everything. I wanted to understand everything if I do not know them

(Lao Rong 2003, 3)". In 1978, he went to Harbin Institute of Technology (HIT) to accomplish his bachelor's degree in the Department of Computer Sciences. In 1982, he got his B.S. degree and was assigned to a job at former Ministry of Aerospace and Astrology. He had to deal with computer and other network related technologies.

Silicon Valley

The overseas experience also contributed to his later of pursuit of e-commerce. Wang claimed that his experience in the Silicon Valley was quite instrumental later in life. He recalled that after he was assigned to work for the Ministry of Astronautics, he was sent to the Silicon Valley to learn computer technology and networking systems, possibly for the F16 fighter in 1987. He read quite a few books (especially the one named "Winning the Game") on the celebrities of information technology in San Jose, which stimulated his interests in opening up his private business. He named his company 8848, the height of Mt. Everest, to make sure that his company could become the most advanced e-commerce company at that time. Wang had a faith that IT can bring about leapfrogging development. Just because the Internet is from abroad, it became a testing ground on whether the government could control it or not. He said, "The most important issue is that the Internet is a new field and nobody in the government realized its full potential, thereby they did not quite care about its future impact on the Chinese society…. As it was a new field, there was no monopoly, and a group of people saw this space and nobody really thought highly of it."[91] MII started to talk about value added service of information, but it was Charles Zhang and Ding Lei (CEO of Netease e-commerce website) who really started to tap the commercial value of it.

He also investigated the software industries at Bangalore in India. Software production from companies in Bangalore yielded annual exports worth $300 million USD as of 1994. Approximately 150 of 600 Indian firms operate on global contracts, but before 1989 few Indian firms worked internationally. Now most of them have international business. Foreign companies like Citicorp, Microsoft, Oracle, and others now have the software operations in India. The same effect is also manifested in Chinese economy. The telephone lines in China increased at 21.3% from 1983-1993 annually while its economy was growing at 10% per year (Talero 1997, 28). Thus he believes in Joseph Nye's assertion:

> Knowledge, more than ever, is power. The one country that can best lead the information revolution will be more powerful than any other. For the foreseeable future, that country is the United States. America has apparent strength in military power and economic production. Yet its more subtle comparative advantage is its ability to collect, process, act upon and disseminate information, an edge that will almost certainly grow in the next decade (Nye and Owens, 20-26)[92]

In 1989, John Wang became a director of a joint venture in Shenzhen. In 1992, he became the largest salesperson in computer products and books, his annual sales surpassed more than a hundred million yuan. In 1993, he joined the chained organization of Lianbang computer networks sales. In 1998, he undertook the preliminary experiment to set up "software port" online to sell software. In 1999, he has become the vice president and CID, chief manager of e-commerce department at Beijing Union Software Inc. In July 1999, he assumed the position of the president and board director of Beijing Mr. Everest E-commerce Service Corporation (www.8848.net). In November, he

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[91] Personal communications in November 30, 2004 by author in Beijing.

[92] Arquilla and Ronfeldt also argue that two poles are associated with "information strategy"—one technological (cyberspace safety and security), the other political and ideational. "Information strategy is seen as a way to harness and express the 'soft power' of American democratic and market ideals, to attract, influence, and lead others"(Arquilla and Ronfeldt, ix-x).

became the Board Director and Chairman of the company. In March 2000, the company has signed to become the chief distributor for 3Com.in China.

His autonomous pursuit is different from others. "The main problem of the Internet enterprises is that many people produce the same thing as others. In the line of the Internet, you usually have something first, not second. Successful enterprises always think of what others are doing, or what other have said but nobody has achieved" (Hou and Kong 2001, 320). He hopes to compete with Amazon.com and other Internet companies. He does not cover his ambition to build an e-commerce empire. He speaks openly at Davos, aiming at becoming the first e-commerce enterprise in China.

According to his recount, the internal networks of sales were important for entrepreneurship. That is, those people who understood IT and loved IT helped them get the first barrel of gold. In the 1980's and early 1990s, fortune was accumulated through information asymmetry. At the preliminary stage, there was no Corporate Law. It was a time of enlightenment for the computers and IT sector. People at that time did not know how to use CAD. So it was quite lucrative. A computer would give a computer vendor more than 10,000 yuan profit (USD 1200). Then he cooperated with the User's Friend software and started chain stores to sell PCs. In a single year of 1995, he got a profit of 840,000 yuan. By the end of 1998, the United Software had 386 software chain stores. He then pushed for favorite policy together with other IT elites at conferences

Government Support for the Software Industry

Wang's case illustrates that markets require supporting institutions at the local level. This is emblematic of the parasitic dimension of these IT leaders. They definitely

need government support for property rights and tax favors. From Wang's case, we also learn that a symbiosis exists between the public and private sectors. "Much of Beijing's success was a result of the growing interaction between independent non-governmental entrepreneurs and local officials"(Segal 2003, 52). In April 1984, the Beijing government was ready to make Haidian District "China's Silicon Valley" because of its dense networks between state, private, research and university. "The local government trumpeted inter-organizational organization and entrepreneurial activity as the basis of 'innovation network' linking enterprises, research institutes, and universities to each other and to the local government" (Segal 2003, 58).

The early start-up companies were managed by fearless entrepreneurs who could risk safe jobs within the establishment. They wanted to establish a company wherein they could enter an environment in which one can develop oneself. Mutual feedbacks between these enterprises and the government became routine, even though discord appeared during interactions. Stone and Legend declared they were dedicated to the service of China and revitalizing the nation. These entrepreneurs presented to the officials ambitious plans. They wanted to globalize, move into the stock market, increase the scale of production, become conglomerates, industrialize, and financially diversify. In 1988, the Torch Plan sought to broaden the sources of funds for private start-ups. As a result of government support on tax break and tax holiday, these companies enjoyed golden ages of development from 1980 to 1992.

Thus Wang develops an attitude towards politics just like a Chinese proverb: *"neither too close nor distant.*" Though many IT entrepreneurs try to keep the government interference at arms length, he does not reject governmental communications.

He was glad that the Chinese government was actually approaching them actively. Just as Peter Evens argues, the success of developmental states depends on a balance between institutional autonomy and dense links to societal actors (Evans 1995, 49). Wang's success coincided with the state efforts to strengthen its software industry as a national strategy for leapfrogging development.[93]

Wang's case demonstrated that *local* government support helped enterprises overcome many market barriers, a symbiosis that characterized the new market with its incomplete information, undefined property rights, and price distortion. In many conferences, Wang got in touch with the vice mayor of Beijing, Lin Wenyi. Born in 1944 from Taiwan, Mayor Lin used to be a professor of physics at Tsinghua University. Beijing municipal officials relied on small enterprises and a hands-off approach to market coordination in the information industries. She helped to reduce the VAT to less than 5%, compared with a 17% of other manufacturing industries. This help from the Beijing mayor demonstrates that the state is willing to assist the IT leaders in achieving their goals, at the same time, they can strengthen national competitiveness and rule of the Communist Party. This is a cozy relationship between government and entrepreneurs, as they call it "good mother-in-law (*hao po po*)" (Segal 2003, 15). The best mother-in-law does not interfere with the internal workings of the enterprise, with the relationship between husband and wife, but supported the couple in raising their children. Of course,

[93] According to Ni Jianmin from the Policy Committee of the Communist Party, the government conducted several field researches in India. They believed that by adopting new technology, especially information technology, would help developing countries like China accelerate their pace of development and skip over stages of development in order to connect with world economy while facilitating economic and political structures at home. They found the effect of IT on leapfrogging development. Software production from companies in Bangalore, India, yields annual exports worth $300 million USD as of 1994. However, China's software industry was domestic oriented while India's was export oriented. They have also discovered that Hinduism plays an important role in their IT industry, an interviews with Ni, March 12, 2004.

even though no entrepreneur wants to many "mother-in-laws" to interfere with their businesses, they still prefer a mother-in-law to help them.

In addition, the government support for software companies like 8848 or 6688 has security concerns. China hopes to compete with American software industries such as Windows-related products by encouraging domestic competitors. At the same time, promotion of other operating system such as Linux may ease the state's fears of dependence on Microsoft and the United States. *People's Liberation Army Daily* covered an editorial on "information colonialism" in that China cannot have information security without its own software (Segal 2003, 167-8).

Thus the symbiotic dimension tells us that actors do not work in a political vacuum, their visions must be complemented with political capacities to transform their efforts into reality. Their "embedded" autonomy under the new era of political pragmatism and experimentalism in China is an interesting case. As is known that any possible change must be brought about by both external and internal forces, many policies are first designed by activists outside the policy circle, and then achieved by both the external and internal forces. There are two instances where Wang tried to influence the legislative and judicial systems. The first one involved software registration and encryption. Many people were displeased by the explanation from the Supreme Court of China on the right of software registration and protection. They pressed the case to Secretary Qian of the Law Committee of the National People's Congress (NPC). He mobilized more than 30 delegates from the People's Congress and the Political Consultative Committee to ask for revision of the legal explanation. Through outside protest and internal urgings, negotiations were held between the court and the delegates

from the software industry. Later, the legal explanation was revised by the Supreme Court. It is a rare case that a policy is successfully achieved by pressure from the bottom in China.

The second impact was that he also pushed for the draft and adoption of the Electronic Signature Law through his personal friend in Fujian People's Congress. The representative at Fujian People's Congress mobilized support from Mr. Qian of the Office of Legislative Affairs under the State Council. The proposal aroused heated debate and finally reached the central committee's attention. During the discussion period, the State Informatization Office and E-commerce association were also involved in it. The final issue was addressed at the National Congress. After several rounds of debates and revisions by experts, the act was passed in December 2004. This is a successful story of joint efforts to draft and enforce laws regarding business interest at the e-commerce. Even though this case does not have too much significance on politics, it was an attempt by these IT elites to push forward legal acts for their own sake.

Mechanisms for Political Change

Compared with the IT leaders in the public sector, the IT leaders at the private sector enjoy more autonomy both structurally and ideologically. They enjoy job mobilization and more free space with more monetary or material resources at their disposal. At the same time, they also have more social space to develop their own independent understanding of developing China and catching up with the world. Even though their ideological understanding of political change is liberal, their push for political change cannot be exaggerated. They heed the bureaucrats at MPT for their

inadequate understanding of social demands, but their efforts end when their business interests are satisfied. In addition, their dependence upon governmental deals also made them rely on personal ties for their business. Thus, their parasitic characteristic exists, making this group less democratic or liberal as expected by believers of modernization theory. We should also be cautious that these three examples do not represent all entrepreneurs in the ICT sector. They are the carefully chosen ones who are influential enough to impact upon politics. We also find their symbiosis with the state in the software industry, but the compromise from the state does not always prove that they are rising so fast for political changes in China. Instead, it is a comfortable state-business relationship that the state bound these businessmen into its patronage. However, this relationship also may point to a new negotiating pattern because some IT leaders may successfully evade state intrusion and work out something truly innovative for civil society. But their political power is still quite limited in that they dare not challenge the state because of their business concerns and the state carefully gives them benefits in exchange for political loyalty (Pearson 1997).

These IT elites are products of the Party's reform and ironically the proof of their success: their prosperity was made possible because of the market reforms under Deng Xiaoping (Dickson 2002, 170). They are not engaged in frequent collective actions for political change because they are beneficiaries of the reform. Thus they are more likely to be partners of the state, not challengers of it. They seem to help resolve one of the fundamental contradictions of Chinese politics: how to help the Leninist political system adapt to a thriving market economy. These IT leaders cannot be assumed to be harbingers of democracy because their *prima facie* motive is still their business interests.

Many of them approach political patronage purely for self-interest. Not all IT leaders can translate their economic advantage into political actions. As long as they are committed to social stability and maintaining the Party leadership, their own authority depends on the same hierarchies that generate this resistance. In addition, they were aware of the danger of being entangled in numerous political drives that would cost them their career or even lives. This apolitical stance persists in many of these IT leaders, thus they are cautious of promoting the structural power of the state, not the despotic power. At the same time, the Party starts to incorporate successful IT entrepreneurs as a show of representing all social interests. But they also believe, at least for the short run, the reform is still from the top down. There are many fears that if these businessmen do not follow the Party line, they are going to lose their business, perhaps even risk of imprisonment.

Even though they do not strive for collective action, this does not negate the fact they are seeking a collective identity as poster children of globalization. These IT leaders are political amateurs who, for a variety of reasons, decided to become active in the new market entry. They see new e-commerce opportunities as a means of self-fulfillment or for a modernized and civilized China; thus some of them will shoulder the risk of actively participating in the course and design of ICT diffusion. But the path of change largely reflects the efforts of these IT leaders to integrate China into the global system and compete with advanced countries for leapfrog development. However, these IT leaders were courageous at the initial stage of introducing new norms and business models into the Chinese practice. Later they heavily embedded themselves with the governmental and relied on personal ties to support their business interests.

This demonstrates their amphibious character. They were initially autonomous market actors, but later they became co-opted by the state. It is also an example of *situational leadership*. The leaders were brave enough to challenge the monopoly of China Telecom, but they did not have enough courage, power, and resources to challenge the *irrationalities* of orthodoxical Leninist state. They do not challenge the closed and hierarchical decision making system, the lack of competition between organized political parties, and the lack of checks and balances on state power. Yet they do make rule changes and institutionalize reforms for the representations of economic interests to the state.

The decline of regime legitimacy prompted the Party to switch from *ideological* legitimacy to *performance* legitimacy. Economic development and the politics of reform put a premium on economic expertise. It has produced vast growth in the number of professional economists and a growing acceptance of their role in the polity. This kind of state-business relationship is not necessarily confrontational or immoral. But, economic plans, production quotas, salary schedules, and government sponsored trade associations are imposed on business from the state; businesses are *involuntarily* and *passively* involved in this political change.

Another important phenomenon is that many IT leaders started to actively involve themselves in public life and make philanthropic donations. This is a way to fulfill their social responsibility as independent social elites. Bruce Dickson shows that China's private entrepreneurs make donations to the local community, but the motivations are unclear. Some might be attributed to governmental pressures for social welfare and local construction. But some feel a sense of civic responsibility, separate from tacit or overt

pressure from state or society (Dickson 2002, 117). Private entrepreneurs contribute 54% of community schools, 42.6% of community roads, bridges, dams, wharfs, 42.4% of social welfare projects, and 29.4% of student's scholarships. Jasmine Zhang was invited to be a member of the National Youth Association, an honorable position for people under the age of 40 with outstanding achievements. This association is a government-sponsored organization and serves as a channel for policy dialogues between government and youth. The members serve as youth representatives as well as exemplary models for youth. Showing her awareness of public contributions, she then donated some of the income from a recital to the China Cancer Foundation.

Some IT entrepreneurs also form a Society Entrepreneur Ecology (SEE) Fund in order to protect China's fragile environment in light of industrial development. The fund was created by one hundred entrepreneurs in an effort to check desertification in Northwest China. It is perceived to be the social responsibility of entrepreneurs to help prevent desertification in the Alashan area in Inner Mongolia, which is situated very close to Beijing. Others have also made ecological donations. John Wang is also a well-known soccer fan and an environmentalist. He spent millions of dollars to protect a kind of endangered fig tree in Fuzhou, his hometown. He also bought the courtyard of a martyr who sacrificed his life for China's reform during the Qing Dynasty (Tansitong) in Southern Beijing and protected it for future generations. These are important signs of an autonomous middle class emerging in Chinese society because social responsibilities are the ultimate concerns of humanity. Finally, these providers as well as retired functionaries of the state are keenly aware of the digital divide, "information asymmetry". Some Internet service providers addressed the issue of inequality over the

Internet for asymmetrical information accesses and divide between rich and poor areas. Some of them believe that IT will also contributive to poverty relief.

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Summarizing, the IT leaders in the private sector actively involve themselves in the pricing and legislation of ISP and software industries. Compared with IT leaders in the public sector, they have shown more autonomous elements as inchoate middle class as bridges between state and society in China. They organized symposiums to channel social demands into the state level, challenged the pricing issue of China Telecom, touched problems of social justice, and developed visions and strategies to achieve liberalizations in the ICT sector. They have started to push political deals collectively, albeit their attempts were not so fruitful in the ISP market entry. Their relationship with the state is "neither too close nor distant"—they seek support from the state at the time of business needs and at the same time, are cautious not to cross the thin red line of the Party tolerance. Furthermore, they have demonstrated social responsibilities and begin as role models for China's new development. Their role as bridges between state-society is more evident in the ISP market entry and software industries. So their impact on political changes is modest, but higher on policy and institutional changes.

Chapter 5. IT Leaders for a Burgeoning Civil Society

Internet Content Providers (ICPs) and IT Advocates at NGOs

This chapter presents those IT leaders who are **Internet content providers** and those who use the Internet to promote social justices in non-governmental organizations. These content providers help create numerous online communities, thus setting the trend for an online civil society. I focus on *three* content providers: Liu Jun, Deputy Director of content at sina.com; Shan Chengbiao, Director of BBS at people.com; and Zhaxi, editor for an environmental website-- Tibetan antelope information center. The reason I choose these three is because they are in charge of the content of the most *influential* online media. Generally speaking, their autonomy lies in their ways to use the Internet to exercise independent influences over social and state behaviors, accelerating entrepreneurism, enhancing transparency and promoting new ideas of participation, all interacting in mutually reinforcing ways. Their power is "soft", which lies not in resources but in the persuasive ability to change the behavior of others (Nye and Owen 1996). But, these content providers also have a parasitic dimension in that they have to be cautious not to cross the thin "red" line of the state control. Sometimes their symbiotic dimension is manifested in their cooperation with the state to report social issues such as Nandan Coal Mine accident before official media covered it and other environmental issues which could hardly be monitored by the state. Eventually their negotiating dimension is more salient in that they attempt to pioneer new ways for social interactions

via the Internet with state support and evade state control as much as possible. Thus their amphibiousness is clearly shown in their traits as sympathizers for social actors and supporters for the state.

These leaders may bring political changes through online information exchanges and activities. Even though these online activities create more transparent political atmosphere for public contestation, they do not necessarily produce concrete political changes without negotiations and compromises from the state. Thus, the reality of the relationship between the Internet, civil society, and leadership is much more subtle and demands a more nuanced analysis. These IT leaders may facilitate more dialogues through online communications. But these online activities remain *unorganized*. They do not pursue any coherent political ideologies or agenda. In addition, the government has strict control over online messages. At least four governmental organs are in charge of websites --the Propaganda Department of the Communist Party, Ministry of Culture, the Network Surveillance Department of the Public Security Bureau, and News Department of the State Council. The state allows some online complaints as a show for the respect of social voices, but in reality, it carefully monitors these online behaviors in order to gain a better control of the Internet. Thusthe role of these IT leaders cannot be exaggerated because they are not liberal democrats that can challenge the despotic power of the state. Rather, they are active people who encourage these online communications for a "second culture" of civil society. Their power hinges on introducing concepts such as digital divide and devising strategies to empower underprivileged groups.[94] But these

[94] IT revolution has blurred the difference between both material power and normative power in world arena with a stronger emphasis of the latter. Here material powers refers to conventional national capabilities based on measurable economic, military, demographical, and technological factors; normative

are only assertions if we do not consider the specific processes that produce concrete outcomes. How much autonomy do they enjoy? Are they creating channels for civilians to vent pent-up angers towards the abuses of government officials? Can they become bridges between state and society? How do they deal with state control? Are they willing to help the neglected social groups to advertise their activities on the web or to communicate with each other through the Internet?

Even though autonomous IT leaders in China are using the Internet to help publicize their causes, or try to draw new supporters for social justice, thereby strengthening their minority position, there is, however, another way to look at this. The use of the Internet provides the state with a method for monitoring the activities of these groups. Thus, even though the Internet may provide groups with a new form to communicate information with each other, it also provides avenues for the state to monitor their activities. Even though some IT leaders have negotiated with the state for more freedom, this does not negate the fact that the state still remains in control of the Internet and bind these IT elites into its patronage. To continue this avenue of inquiry, it is necessary to situate arguments more fully in the literature that deals with the Chinese state and its efforts to control or co-opt developments within society that may threaten its own power base. We find that the Internet has become an experimental ground for the state to understand social needs. This chapter specifically addresses the IT leadership as advocates of new concepts in society and addresses the ways in which they interact with the state and society to show their potential impact upon political change, e.g. state responsiveness and public contestation. .

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power (often neglected in the systemic approach) is the ability to define, control, and transform the agenda of world politics and to legitimate a new dominant paradigm.

The Autonomous Dimension of Content Providers

These IT leaders' autonomy can be seen through the way they enlighten people and create an "ethical root" of online culture. This will be tested through a case of Liu Jun, the Director of Content at sina.com.

Ethical Root

Hegel was the first to use the expression "civil society" to refer exclusively to this nonpolitical social economic realm.[95] Family and civil society embody the principle of subjective freedom. They play a crucial educative function, ensuring that individuals are not simply or narrowly self-interested in their relation to the state but already ethical in themselves and purged of their raw particularity. He refers to the family and civil society as the "ethical roots" of the state.[96] Therefore, civil society is not simply a realm of selfish individualism opposed to the universality of the state. Rather, civil society educates the individual to the universality. In civil society, the universal is an unintentional byproduct of the pursuit of individual self-interest and thus appears as "unconscious necessity," while in the state it becomes an end that citizens knowingly and willingly acknowledge. The state marks the *telos* (goals) of the dialectic of human

[95] The ethical unity of the family is the immediate one, based upon the natural feeling of love. When people enter society, they do not relate to one another as self-sufficient personalities as in family but as parts of a larger whole with which they immediately identify themselves. This is civil society, where all the individuality and self-sufficient interest that remains submerged in the family is liberated.

[96] Civil society represents only an incomplete actualization of human freedom and one that needs to be distinguished from and ultimate subordinated to the full actualization of human freedom in the state. In civil society, in contrast to family, "each individual is his own end, and all else means nothing to him (*Elements of the Philosophy of Right*, 181A)." Nevertheless, Hegel retains from his early writings a certain suspicion of unfettered economic activity and a desire to subordinate it to the higher, more universal aims of the state. "Civil society affords a spectacle of extravagance and misery as well as of the physical and ethical corruption common to both" (185).

freedom insofar as it is in the state that individuals finally make the universal their explicit aim and purpose.

These IT leaders play a role, in line with Hegel's view on civil society, to socialize people through the gradual "education" via the Internet. Some help people to know that the information revolution changes their way of thinking on social development, which represents not only a present condition but also a projection of a desirable alternative better life. Some interviewees at the foreign-sector express excitement about the "cultural revolution" brought about in China by the Internet. Liu Jun, the Deputy Editor at *sina.com* enthusiastically comments that the Internet contains key features that are corrosive to the rule of authoritarian regimes, namely openness, variety, and transparency. He expressed the difference that has been made by the Internet to usher in an "alternative comparison". In their opinion, the Internet sets the trend of a new way of thinking and an alternative life model, playing a role as a "transmission belt" of new values. One interviewee stresses that the Internet keeps a healthy political culture alive.

> The Internet gives us more clues to find our position and orientation in the modern world. The Internet is a global repository of banned texts, a forum of wide-ranging political discussions with unlike thinkers and a vast source of news and opinions accessible to any user. It has a great potential to create information pluralism in well-connected societies with easy links to ideological alternatives and socioeconomic comparisons. Internet forums call for the expansion of rights, for the defense of the autonomy of civil society, and for its further democratization. They keep a liberal political culture alive. [97]

He believes that the Internet is bringing about "positive freedom" for China through the interactions on the Internet.

[97] Personal communications on January 22, 2005 in Chongqing

Political Justice and the Case of Online Activitism: the Nobel Laureate

These entrepreneurs also express that it is impossible for the government to suppress the various ideas diffused on the Internet. This is because the content-saturated *ideational pluralism* characterized by the Internet makes multiple sources of ideas, images, and news is widely accessible to the public.[98] Samuel Huntington argues that authoritarian rule is unable to be sustained in societies where ideational pluralism exists and when less restricted flows of information alert its subjects to the success of pro-democracy movements elsewhere (Huntington 1993, 6-8). They use the old Chinese proverb ---"Paper cannot wrap up a fire" to denote that human spirit is irrepressible; the truth will reveal itself.

Not all online groups are essentially **reformist, gradualist**. Some groups are explicitly making more **radical** claims—such as to abolish Communist rule: open up multi-party competition. With Internet related services including emails, chat rooms, and Usenet groups, these IT elites encourage more political voices. For example, a famous singer, Li Guyi, went to the chat room of Daily Entertainment website (*tiantianyule.com*) to publicize her anger towards the corruption of *Orientation Ensemble* where she was working. She publicized nine "crimes" of the ensemble to reveal leaders' notorious embezzlement. Major news media like *Beijing Nightly News* dared not report it to Chinese people. The online news journal *Dacankao*, *wenxuecity*, and *bignews.org*. The purpose of this *bignews*.org is to promote political reform, break the information blockade of the Communist Party, and enhance the freedom of speech via new technology. Neither is *Dacankao* the only Internet-based newspaper that reports stories,

including investigative articles and wide-ranging opinions, that would otherwise go unpublished in China, where the Communist Party exercises rigid control of the press. The Chinese government employs intimidation and brute force to quell the human spirit. The Internet is an effective link with Western media outlets and spark overseas coverage of human rights issues at home. One interviewee made a comparison: For instance, during the 1978-1979 "Democracy Wall" movements in China, a number of liberal journals such as *Beijing Spring* were circulated to a very limited amount of audience. However, underground journals like *Mirror* and *Tunnel* can reach tens of thousands of people in the international on-line community. In a word, Internet is a double-edged sword-- a powerful tool to integrate and invigorate economic, educational and political resources, while a potential threat challenging the authoritarian rule.

Liu Jun told me a case of how some IT leaders use the Internet to encourage a different voice from the government. It is true that the IT leaders encouraged some online activities against the governmental control over news. However, their pursuit was still cautious and they were careful not to cross the "thin red line" of Communism. The case of the Nobel Laureate, Gao Xingjian, clearly demonstrated the dissident voices from civil society in support of the first Nobel Laureate over Literature in China. The dramatic effect was made possible by those IT advocates who sympathized with the greater demand for liberty.

According to Liu Jun, the Nobel Prize of Literature 2000 was granted to a Chinese dissident Gao Xingjian "for an œuvre of universal validity, bitter insights and linguistic ingenuity, which has opened new paths for the Chinese novel and drama".

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[98] Since authoritarian regimes often rely upon particular interpretations of Communist canon as the basis of their legitimacy, the presence of novel sources of information challenge the ruling norms and values call to

> In the writing of Gao Xingjian literature is born anew from the struggle of the individual to survive the history of the masses. He is a perspicacious skeptic who makes no claim to be able to explain the world. He asserts that he has found freedom only in writing. His great novel Soul Mountain is one of those singular literary creations that seem impossible to compare with anything but themselves. It is based on impressions from journeys in remote districts in southern and south-western China, where shamanistic customs still linger on, where ballads and tall stories about bandits are recounted as the truth and where it is possible to come across exponents of age-old Daoist wisdom. The book is a tapestry of narratives with several protagonists who reflect each other and may represent aspects of one and the same ego. With his unrestrained use of personal pronouns Gao creates lightning shifts of perspective and compels the reader to question all confidences. This approach derives from his dramas, which often require actors to assume a role and at the same time describe it from the outside. I, you and he/she become the names of fluctuating inner distances. (Oct. 12, 2000, Press Release of the Swedish Academy)

Gao's case is an example that civic voices could be heard online against authorities. These content providers became the first to publicize the news that Gao won the Nobel laureate of literature in 2000. The Chinese government remarks that the prize has lost its authority because it is judged from political motives. As Gao is the first Chinese who has won a Nobel Prize for Literature, Chinese people began to vent their pent-up anger towards the government and express their admiration for the Chinese writer through all kinds of Internet forums, including the Powerful Country Forum at the website of People's Daily, the most conservative Party newspaper. Gao, a writer of prose, translator, dramatist, director, critic, and artist, graduated from the French Department of Beijing Foreign Language Institute in 1962. During the Cultural Revolution, he was sent to a re-education camp and was obliged to burn all his manuscripts. Several of his experimental and pioneering plays-- inspired by Brecht, Artaud and Beckett-- were produced at the Theatre of Popular Art in Beijing: His theatrical debut with Signal Alarm

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the questions of their public accountability for their failures.

was a tempestuous success, and the absurd drama which established his reputation, Bus Stop, was condemned during the campaign against “spiritual pollution”.

In 1986, The Other Shore was banned and since then none of his plays have been played in China (that is why very few Chinese know him). In order to avoid harassment he undertook a ten-month walking tour of the forest and mountain regions of Sichuan Province, tracing the course of the Yangtze River from its origin to the coast. He settled down in Paris in 1987 as a political refugee. After the 1989 Tiananmen crackdown he left the Chinese Communist Party and severely criticized the crackdown of democratic movement. After the publication of Fugitives, he was declared *persona non grata* by the Communists and his works banned in China.

In the summer of 1982, Gao had already started working on his prodigious novel Soul Mountain in which-- by means of an odyssey in time and space through the Chinese countryside-- he enacts an individual’s search for roots, inner peace and liberty. On October 13, 2000, the Xinhua News Agency reported that the Nobel Prize of Literature was awarded to Gao Xingjian. Citing from a leader of China Writers' Association, it comments that Nobel Prize was biased to political motives, not determined on its literature merits. Therefore, it concludes that Nobel Prize has lost its authority. As this is the first Chinese writer who won a Nobel prize, this has aroused a heightened discontent among Chinese people.

Liu told me after the comment from the Chinese government was released, these Internet content providers let people vent their pent-up anger online against state census over media and publications. On October 12, Netease reported the whole exciting news from Sweden, earlier than the report from the official Xinhua News Agency. It praised

the "universal value, insightful clairvoyance and the agile mastery of language" of his works which, "paved a new way for the Chinese literature and drama." In the BBS Powerful Country Forum of People Daily Network on October 13, a person named "Sublime and Fearless" argues that Gao's works represent a milestone that Chinese literature is developing towards the most advanced direction of world. On fm365.com, a web site run by Legend on October 13, an article criticizes the hysteria of the Communist Party out of fear and urges the government to respect the decision by the committee members of Nobel Prize. On October 14, *sohu.com* had a heated topical discussion over the "political motives of Nobel Prize of Literature". People express all kinds of enthusiasm for Gao and despises against the Chinese government. "Wake up to the reality (members of the Writers' Association) of the new 21st century world culture in which you can no longer monopolize the freedom of speech."

> *Chinese Writers' Association* is just a puppet of the Chinese Communist Party. Stop whinning (sic.), your idiots. It is a pity that most Chinese in China have never heard of Mr. Gao. They would only let people read stuff they like you to hear. When do the Chinese people have real freedom?????!!! Listen up, the leaders in Chinese Writers' Association, with the next revolution in China, you will be punished for serving as a running dog for the Chinese Communist Party. Down with CPC (Communist Party of China)!!![99]

On the forum of *Sina.com* on October 14, people commented this event and said it was a pride for Chinese nation. These postings are **representatives** of most online messages, indicating an emerging online activism in China.

> All the members of Nobel committee must be well qualified to award the Nobel Prize and account for the world, or else they were nuts….Those people who always want to isolate Chinese literature from the world are frogs in a dark well, and criminals of Chinese nationality…. I know nothing about Gao Xingjian, but those people who label it a Western conspiracy are sycophants to the Chinese dictators. Shame on them! Gao's works has bridged the wide gap between

[99] BBS of sohu.com of October 14, 2000

> Chinese literature and the West. He has presented a Chinese banner on the alter of world literature. [100]

On Oct. 16, several articles continue to sing high praise of Gao and defend the humanistic values in his works on People.com.cn.

> It is for sure that literature is involved with politics. .. But literature is the product of freedom, transcending boundaries of religion and politics. Literature is the common wealth of human race, not molded by a certain political ideology. His works represent a human love that is manifested in most Nobel prize winners. We have understood that Chinese language has touched the highest authority of the world literature. It means human soul is transnational….If you listen to a doctor, there is no sanitary place in the world. If you listen to a military guy, there is no safe space in the world. If you listen to nuts, everyone is persecuting you. If you listen to the Chinese government, everybody is mean and evil. To criticize Nobel prize as a Western interference with Chinese domestic affairs, I do not know what strategic interests does China have for this tiny country--Norway. If such an award should be given to the most "influential writer" in China as the Chinese authorities stated, then the prize should be awarded to Chairman Mao for he enjoys the most readers in history of world. The Royal Academy of Literature of Norway is not a subsidiary of CIA… [101]

These content providers at sina.com and other ICPs are themselves quietly engaging people against the monopolistic control of information. Gao's own statement covered on *Le Monde* in France was quickly translated into Chinese was also put on the BBS of people daily net that day.

> Diaspora is the rebirth of my creativity. History and culture are created by man. People aspire for more lively, fruitful, and diverse images of contemporary heritages, not a perverted single memory of the past imposed by an authoritarian. The book One Man's Bible is a testimony of the spiritual oppression by the Communist Party as exemplified in the strict censorship of works by Chinese intellectuals. History cannot babble.[102]

Therefore, these content providers played important roles to channel these civic voices to communicate with each other. They attempted to convey their views subtly online. This

[100] BBS of sina.com.cn on October 14, 2000
[101] Strengthening China Forum on people.com.cn on October 16, 2000.

represents an inchoate pluralist social movement in China. However, though some of these IT leaders are helping online activism, they themselves are not necessarily leading the anti-government actions. They are quite cautious of the political risks involved, thus engaged in a subtle power struggle with the state. Another case may shed more light.

The Symbiotic Dimension of BBS Content Providers

Some content providers like Shan Chengbiao from People.com make the Internet a forum to address social injustices and help the infrastructural power of the state. The Strengthening China forum is also a testing ground for the government to monitor the social grievances and activities. Thus IT leaders are symbiotic with the state for support and at the same time, carry out social functions to channel civic demands to the state.

Shan Chengbiao, the Director of BBS at the People.com, told me the history of the *Strengthening China Forum*. Shan graduated from the Chinese Department of Beijing University. The Strengthening China Forum was started in May 9, 1999. Its predecessor was a trial sports forum. What triggered the launch of the forum was due to a bombing in May 8, 1999. It was the time NATO bombed the Chinese embassy at Yugoslavia. Initially called the "BBS Forum for Strongly Protesting the Savage Act by NATO", it became an instant attraction to politically conscious internet users. Between May 9 and June 19, when the name was changed to the currently used *Strengthening-China Forum*, more than 110,000 messages were posted on the forum. The normal click rate is 300,000—400,000 times a day, but during 9/11 there were almost 1 million. Therefore the forum was overburdened for a long time. At the initial stage, they wanted to make it a bridge to link voices of society to the central government. Surprisingly, the

[102] Ibid.

government was very supportive, according to Shan. The propaganda department gave lots of help and suggestions For example, some people criticized the Ministry of Foreign Affairs, yet the ministry is very willing to listen to these criticisms. The forum has so many comments on current issues, and many of them raised public awareness and to change governmental behaviors. During the spring festival of 2003, in Chongqing people could not get train tickets because they were sold to ticket peddlers for higher profits. Later the Chongqing Railway station changed its behavior because of this online report. Shenzhen municipal government also changed its low efficiency behavior owing to a report on the forum too. These IT advocates helped with a growing plural voice competing with government controlled media at so many e-forums. These active players had their initiatives to bring people's contending voice heard at the top level.

People may be surprised by the unprecedented degree of tolerance at the Strengthening China Forum. Shan also told me that the people.com is different from the People's Daily because the government wants to make it more flexible to social needs. It is an experimental ground for the government to obtain more information over social activities. As a result, at the end of October 2000, *People's Daily* network changed its name to People network. As a director from *People.com* says, the name change connotes that People's net will advocate China's policies to the world, but will reorient itself to serve the people with a more flexible management and operation. It attempts to use the influence of *People's Daily* but at the same time, to get rid of the inefficiencies of state owned propaganda machine in order to compete with other popular websites such as

sina.com and *sohu.com*. The government sponsored People Net is an example that the Party allows contradictions to evolve and new things to be experimented upon.[103]

Since the public has little freedom to discuss "sensitive" political issues openly, *Bulletin Board Systems* (BBS) has become a popular way of political participating via interactive political discussions online. The BBS provides a platform for web surfers to engage in a more improvised discussion, as well as a place for people to publish articles unpalatable to the official editors. Messages posted on the BBS can be surfed by any public audience. As any poster can join the BBS on the Internet from anywhere in the world, and are technologically difficult to monitor, the Chinese authorities have had limited success in censoring BBS sites. The content of the forum is extremely rich, ranging from breaking news from around the world, through critical comments on current government policies and nationalistic outcries on Sino-American relationships and on the Taiwan issue, to all kinds of rumors and personal attacks. Debates between the new Leftists and the liberals, the introduction of Western social theories (some even set up a link to *Collected Works of Vaclav Havel*), the promotion of nationalism, and the staging of historic and intellectual controversies in China are also posted. Some liberal intellectuals' works like Li Shenzhi can occasionally be found on the BBS. Like the special economic zones where market economies have been allowed to emerge in the last two decades, the forum has been labeled a "special ideas zone" in China by online

[103] Mao believed that only through contradictions can things evolve. Thus a degree of discussion and contention should be allowed within the Party. "Within the Party, opposition and struggle between different ideas occur constantly; they reflect the class contradictions and between the old and new things in society. If there were neither contradictions nor ideological conflicts through which the contradictions are resolved, the Party's life would come to an end." See Mao Zedong, "On Contradiction", 1968.

commentators because of the greater degree of freedom and tolerance in expressing political opinions that it permits (Zhou 2001).

On the forum, the state is competing with societal players to establish a relatively controlled public sphere on the Internet by selectively opening up some previously controlled space and channeling political discourse into directions it desires. In this new practice, the state takes initiatives that should not be seen as merely manipulative, but also **experimental**. Though control remains the ultimate goal, the process has become more flexible and the state does not always play a straightforwardly repressive role. Here we find a subtle power struggle online that the state frees up some space on the web in order to better monitor social trends and the people take advantage of it. Thus these IT leaders as content providers understand their roles as not only to give more spaces for social grievances, but also a conduit for the state to understand hidden social issues.

The Negotiating Dimension of IT Advocates at Environmental NGOs

IT advocates at environmental organizations are examples of negotiating with the state for more concerns over ignored species. At the same time, they evade "red tapes" of bureaucracies and wrap up support from international organizations and civil society. Online activities over environmental issues were also examples that these IT leaders set trends in civil society as a vanguard for environmental protection. These networks are forms of organization characterized by voluntary, reciprocal, and horizontal patterns of communication and exchange (Keck and Sikkink, 1998, 8).[104] Thus, even though these

[104] They are segmented, polycentric, and ideologically integrated networks. By segmentary it is thought to be cellular, composed of many different groups. By polycentric it is believed to have many different leaders or centers of direction. And by networked is meant that the segments and the leaders are integrated into reticulated systems or networks through various structural, personal, and ideological ties. The networks

IT advocates do not have formal organizations, they can still impact upon environmental issues and political concerns. An example of this is a local Brazilian NGO—the Brazilian Institute of Social and Economic Analysis (IBASE) bypassed the Telebra and created a new link with international partners.

With the help of some IT gurus, environmental websites are sprung up. Homepages of governmental agencies started to provide a good source of information, especially regarding environmental policies and regulations. For example, the homepage of the State Environmental Protection Agency (SEPA) has online "Environmental Newsletters."[105] Websites of non-governmental organizations are quite informative and technologically sophisticated. A recent example is the website of Friends of Nature[106] and The China Program Office of the World Wide Fund for Nature operates a content-rich website.[107] Green Globe, was put up on December 31, 1999 by a high school girl and has attracted quite a lot of media attention.[108] Electronic bulletin boards (BBS) or online forums are the fourth type. There are numerous online communities operated by commercial portal sites with environmental forums. For example, Netease.com has a "Green Forum to discuss issues to protect rights of indigenous people against exploitations of businessmen."[109]

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of civil society lie at five levels: the organizational level—its organizational design; the narrative level—the story being told; the doctrinal level—the collaborative strategies and methods; the technological level—the information systems in use; and the social level—the personal ties that assure loyalty and trust.

[105] See <http://www.zhb.gov.cn/sepa/sepa/index.htm>.

[106] <http://www.fon.org.cn/index.php>.

[107] <http://www.wwf.com.cn/>.

[108] <http://theglobe.ep.net.cn/greentea.html>.

[109] It has posted the following message that aroused national attention. Courtesy to Guobing Yang and Craig Calhoun.

> The protection of the three-river source must first involve the local people. The knowledge of the local people must be respected. .. For example, a very rich company wants to start ecological cultural tourism here. 99.9% of the profit will go to this company. What's there left for the local people? …We have lived here for centuries and we should have a say in these decisions. <http://knl.bj.163.com/cgi/main?guest=1>.

Individual IT advocates also spared no effort in protecting Tibetan antelopes and other endangered species. Zhaxi made the initial attempt for environmental causes. He got the support from the vice governor of Qinghai for his website to protect these rare species. He founded an Internet-based organization, The Tibetan Antelope Information Center (TAIC) in 1998. TAIC's online mission is to be an information and communication center on the protection of the Tibetan antelope and other endangered species. The website is maintained by volunteer IT advocates on rented server space with grant support from the International Fund for Animal Welfare, the Worldwide Fund for Nature, and Global Greengrants. In 2000, TAIC, co-sponsored by Greener Beijing, an Internet-based environmental group launched a "Save Tibetan Antelope Website Union" to enhance public awareness of the endangered species through the Internet. TAIC also uses its website to recruit volunteers to work in the Kekexili Nature Research on the Qinghai-Tibet Plateau. They tried to get the governmental support to make the Tibetan antelope safe, but the governmental bureaucracy can give them a little help. Therefore, they have to evade governmental rules and seek help from international sources.

A "boomerang effect" could be found on online environmental activities (Keck and Sikkink). Domestic issues online caught the attention of wildlife biologist George Schaller of the Wildlife Conservation Society in Bronx, New York. Schaller was alerted on the Tibetan antelope's predicament and pushed for the international community to reject shahtoosh woolmade from Tibetan antelopes. Funded by the Wildlife Conservation Society in New York and with George Schaller's support, the online report documents the endangered conditions of the species and the illegal operations of the shahtoosh trade. On January 20, 1998, the Wildlife Conservation Society in Bronx, New

York, had a news release on the report titled "Demand for Wool could lead to rare mammal's extinction."[110]This is an example of leadership in the digital age. These IT leaders have to adopt combative, strategic, and occasionally secretive behaviors to challenge the entrenched and influential industrial groups that benefit directly from exploiting consumers and environment. They have negotiated with the state for their new paths of environmental protection. But it is still too early to make the leap from describing emerging social networks of the IT leaders to concluding that this particular network configuration shapes political performance outcomes.

The Parasitic Dimension of IT Advocates

These IT advocates are not revolutionaries who wish to overthrow the Communist regime. They are not democrats naïve enough to instigate sentiments directly against the Communist Party. "We want to empower the people." One interviewee at the sohu.com told me, "but it does not necessarily entail a weakening of regulation or jeopardizing of market rules…. Yes, for Americans, it is ironic that we call for dismantling the state monopoly of telecommunications at the same time we want a strong and autonomous state. But we are actually strengthening the state power by diversifying its economy and strengthening its international competition." Others also express the similar view that they let people voice their frustrations in the chat rooms in order to redress the inefficiencies or irrationalities of the current institutions, but not to overthrow them. "To overthrow the government would entail social fragmentation", one interviewee at *Sinotrust* told me, "that is not what we want."

[110] <**http://wcs.org/7411/?art=8857**>

> We have to bear in mind the limitations of all kinds of social conditions that inhibit the smooth progress of democracy, especially a large uneducated population. Social conditions—the enormous size and diversity of the population and the country, poverty and the disaffection it generates, as well as a rigid mentality of central planning, and greater exposure to foreign influence—make control a critical issue for the government. These historic and cultural legacies will not disappear overnight. Therefore, the road to democracy should start from developing civic virtue, instead of overthrowing the government.

The common value these IT elites share is that they want stability, they do not expect big upheavals, and they want a gradual reform. They belong to the class that benefits from the system. The poor people are the most uncertain factor. The government and the middle class cooperate with each other to resolve these potential problems. Some interviewees are skeptical that Western democracy can actually work in China. They share a cultural relativism perspective, similar to "path dependency" theory in the West. They believe that Americans should put their feet in Chinese shoes, not in order to wear them as their own but in order to have some understanding (not approval) of why someone else might want to wear them. They reject a universal standard to judge other peoples and recognize that upbringing, culture, history and even customs affect how people think and act.[111]

Even though some leaders understand the core problem facing China—the monolithic control of the Communist Party, they are not, and do not intend to, challenge the Party themselves because they are afraid of all kinds of social upheavals that may result in the breakdown of their businesses. One interviewee told me the danger facing

[111] One interviewee argues that the problem of Western social scientists is that they tend to apply Western theories rigidly into the Chinese culture. They close down the range of options available for interpretations through a process of imposing order and logic. The process of political reform is messy, ambiguous, fluid, and complex, but a scientific path is to clean one's mind of all models to understand what people really need during a reform era. They need order, no doubt, but it is achieved through constant experiments, success and failures. The Western journalists only report anecdotes of human rights abuses. What they have ignored is a broad panorama and thorough understanding of the Chinese history, beneath which lies its own logic and process.

the Communist Party. "If it is true that a core cause of contemporary political problems in China is the aloofness of the political leaders from world development and their failure to see them as part of the people, seeing people rather as subjects external to be harnessed or overcome, then this period of ICT diffusion provides a significant warning about the dangers of such schismatic views and policies they generate." But he also believes that there is a "cushion effect" that they are satisfied with their economic status and wish to enjoy a stable social environment. They are afraid that political reform might entail social turmoil, as demonized in numerous drives and campaigns of the Cultural Revolution. Mao Wei and Zhao Wenquan expressed similar ideas over this.

Some of these IT elites are skeptics about the transformative role of IT in China, especially its impacts on politics (Drake, et al 2002; Kathilil and Boas, 2003). They acknowledge the positive roles played by the Internet for ideational pluralism and information transparency, but warn us that these activities are still under strict scrutiny of the Communist Party. They also warn that the application of the concept of "civil society" becomes a "teleological exercise: speculating whether or not China would achieve a breakthrough along an Eastern-Central European trajectory" (Ogden 2002, 27). However, it is not to suggest that the IT leaders are not interested in improving the system with the rule of law rather by*guanxi* and reshaping socialist institutions in a manner to advance their business and personal development. One interviewee from the China Railcom complained of the "executive interference" (*xingzheng ganyu*) with their free enterprise.

> It is much easier for us to deal with the horizontal relationships, such as the interconnection with China Telecom and China Netcom, equipment purchase with Huawei, and marketing our products. The most trouble comes from the Ministry

> of Railways. There are so many ministers to report that you have to treat them like emperors respectively. To operate a company, you need to have commercial secrets. However, once you do not report to someone, he will be angry and give you "a smaller shoe to wear" (*chuan xiaoxie*). You do not have enough power to hire or lay off people according to market law. If you complain to MII, the leaders of the Ministry of Railways would think you are actually indirectly accusing their incapability. Therefore, even the General Manager of this company is removed by the Ministry of Railway. [112]

The real issue is that, even though they realize the political problem underlying ICT diffusion, sometimes they are unable to solve it by themselves. The rigid bureaucracies can sometimes stifle their growing desires.

A key issue for content providers is the way they deal with **state control.** The state attempts to monitor development with refined measures of control (Zhou 2001, 19). While the development of dissident voices challenges the state stances, the government has not yet devised a clear and systemic policy in dealing with intellectual webzines (web magazines), BBS, and digital academic work archives. Though the government shuts down overseas Chinese liberal websites such as Literature City <*www.wenxuecity.com*>, Unusual Bookstore <*www.yifan.net*>, and Big Reference <*www.dacankao.com*>, Century China, and even more new websites emerge online. Even though a domestic website the Realm of Ideas <www.sixiang.com> was closed down, its founder Li Yonggang, did not suffer from disciplinary measures from the Nanjing University and was subsequently sent to Hong Kong as a visiting scholar since 2001. It seems that the state opts to exert indirect pressure on editors to conduct self-censorship rather than to close down the sites outright (Zhou 2001, 19). But a direct challenge against the state will not be tolerated. A student nicknamed Stainless Rat published an anti-government message online and was put in jail. Under international pressure, the girl was released

[112] Personal communications in Beijing on May 7, 2005.

after a one-year imprisonment without trial. The deputy editor of *sina.com.cn*, Liu Jun, told me he had to exclude certain sensitive topics such as religion, labor unions, party competition and other political complaints from his site. "Beijing New News has covered an online article 'China's Seven Disgusting Issues' and was force to close down", Liu told me.

From these stories, these IT leaders have made initial attempts for free voices and new ideas to redress social injustices. However, these activities remain spontaneous and unorganized. Furthermore, the state control made them parasitic to state needs and they are unwilling to sacrifice their business interests for the sake of political liberalization.

The Amphibious Dimension of IT Advocates

These "amphibious" people are affiliated to a certain state institution or enterprise, but are reluctant to stick to the old rules. They try to find more social spaces to give full scope to their capabilities. Wang Junxiu, an organizer of Digital Forum, is constantly invited to Lan and Fangshan Counties (poor counties in Shanxi Province, north China) to deliver speeches to local cadres on e-commerce and e-government. They are voluntary groups but not quite a lobby group because much of their effectiveness depends on their close relationship with the state officials. However, they are not part of the establishment either. Even people like Guo Liang who are working for the CASS, act independently—doing pretty much what they want. The China Internet Network Information Center (CNNIC), a non-profit organization under CAS, also does serious research on attitudes and behaviors but strictly using very aggregate survey data on the habits on the Internet of millions of people. Guo Liang, an expert on Hume in the

Department of Philosophy at the Chinese Academy of Social Sciences, did independent research on the social and political behaviors of adolescents and adults in major cities such as Beijing, Shanghai, Xian, Guangzhou, and Tianjin. He got most of his funding to do statistical analysis from UCLA and the Markle Foundation. This partly demonstrates intellectuals' determination to carry out systematic investigations and write reports that reflected both the real situation on the ground and a freedom from ideological cant. He also wrote an article to study the views and feelings on 9/11's impact upon the Chinese. Such a report aroused interest at the top level of CASS and other Chinese leaders. Duan Yongchao, a consultant at CCID (a consulting company affiliated with the MII), shuttled between a backward Shanxi Province and Beijing to study the "digital divide" in China. These groups are active in collecting first-hand unofficial data and are doing systematic surveys that report on the attitudes and behaviors of the "netizens". The most important one is the Digital Forum. Wang Junxiu from China Lab told me, "There is no leader in the forum, we just work together." It is usually held by Fang Xingdong, the Chairman of ChinaLab.com (also a Ph.D. candidate in hydroelectric engineering at Qinghua University). They have published quite a few books including the IT History, and held many discussions on China's digital divide. They have established an influential website, Blog China, as a virtual community for IT elites. In this online community, numerous researchers try to compare the Western concepts and developments of IT and bring them to the Chinese practice.

Some IT leaders undertook independent investigations of social issues online and provided their own policy recommendations. These efforts sprouted bottom-up like wild mushrooms with an innovative, grassroots logic of its own, totally different from the old

line Communist hierarchical top down ideological incarnation. These people attempted to persuade government officials to make China a civilized country, albeit a democratic one. When the driver of a BMW committed a hit and run against an ordinary citizen in Harbin, there was a strong anti-rich and anti-bureaucratic sentiment in the on-line public. Gao Hongbing wrote long reports to the central government to suggest how to quell the social anger unleashed by ever-rising online activities. They make the Internet an experimental ground, a link between state and society. Gao told me: "The Internet is like a big fire to cook food faster. But it cannot go too far to seethe." [113] In sum, these IT leaders as content providers start to form some horizontal ties at society even though they work for certain official organizations. Their amphibiousness lies in their attempt to bridge the shortfalls between the state and society.

Evaluating Influence

The political role of the content providers and IT leaders at non-governmental organizations is more indirect and less salient than that of the public and private sectors. The autonomy of these content providers lies in their encouragement of online activities against social injustice. Their negotiating dimension is shown through their bargaining with the state for more online freedom. Their symbiotic dimension is salient since they keep BBS alive and make it an experimental ground for governmental census. They are also parasitic to the state in exchange for state permission for their forums. Their amphibiousness lies in their roles as bridges of new ideas, but remain silent to directly challenge the irrationalities of the Communist system. These IT leaders are trendsetters

[113] Personal communications on August 3, 2004 in Beijing

in that they are active in the pursuit of an independent virtual social space for the burgeoning civil society in China.[114] They started numerous forums online for information exchanges and some social activitism over human rights, environment, and anti-monopoly issues. Their activities coexist with a more or less tolerant government and global penetration of knowledge society, but they only play a catalyst role, not the dominant role in pushing China's political development towards public contestation and state responsiveness. They do not possess so much material and normative resources, but provide a platform for these liberal practices at civil society and share a vision of an ever open and transparent future China.

These IT leaders have power via the Internet—not the *power of coercion* (i.e. military forces) but the *power of persuasion*. Their power lies in the "capacity to acquire and generate knowledge in all its forms, including recovery and upgrading of traditional knowledge"(Bezanson and Sagasti 1995, 5-6). They make people understand that the current information revolution is not just a technical revolution, but a social and political transformation too. Daniel Bell argues that "technology was more than making things in a reproducible manner. It was a rational ordering of means-ends relations, a rationalization of work and even of sectors of life" (Bell 1999, xii). At the same time, they have changed the traditional *realpolitik* to *noopolitik*, a new concept in international relations

[114] The term "trendsetter" is borrowed from David Goodman in that wealthier people set the trend by driving limousines, wearing extravagant clothes, and building spacious houses . He undertook a field research in Shaanxi province to study those cadres who got rich fast through reform policies (*baofahu*) and concluded that this middle class lacks social pluralism because "the party-state" or patron-clientism prevail. He categories middle class as simply wealthier people, namely private entrepreneurs (owner-operator in Goodman's term), managers of state owned enterprises (who can take advantage of loopholes in state policy and reallocate resources to its personal gains), and service providers or professionals. The conclusion is that these wealthy people get rich because of their "*guanxi*"", therefore their relationship with the existing system is parasitic, not competing. Their existence lies under the mercy of the Communist Party therefore, economic status does not imply political democracy in China. Intense parochialism characterizes majority of Chinese middle class (Goodman 1999).

in digital age introduced by Arquilla and Ronfeldt. They argue that two poles are associated with "information strategy"—one technological (cyberspace safety and security), the other political and ideational. "Information strategy is seen as a way to harness and express the 'soft power' of American democratic and market ideals, to attract, influence, and lead others"(1999,ix-x) We are changing our realist paradigm of political science to broaden our visions from statist national interest to global interests "in enhancing the transnationally networked 'fabric' in which the players are embedded. While *realpolitik* tends to empower state, noopolitik will likely empower networks of state and non-state actors. *Realpolitik* pits one state against another, but noopolitik encourages states to cooperate in coalitions and other mutual frameworks

The study of their trendsetting role of these IT leaders is a step from the failure of political scientists to predict the collapse of Communism and the sudden end of the Cold War. Such a failure has challenged political science to explain how just imperceptible, historical processes could culminate in dramatic instant change. The diplomatic historian John Lewis Gaddis writing about the sudden and unexpected end of the Cold War notes that in the physical world change does not necessarily come about gradually: "Metal fatigue reveals its effects all at once: bridges do not collapse gradually, nor do airplanes decompress unhurriedly. Faults in earthquake zones lock themselves into place for decades at a time, releasing accumulated strains rarely but, when they do release them, very dramatically" (Gaddis 1992, 3). And so it is at times with change in social and political systems. The strains in China may have been there for decades, and hence the explanation of cause becomes tricky because the relationship between the long-run imperceptible processes and the immediate dramatic events is hard to fathom. Therefore,

to study the role of the IT leaders in China is a new start to discern the long-term imperceptible process for drastic social changes.

However, there are also serious limits for these IT leaders to press for political changes in civil society. A clear weakness is that they are strictly following governmental instructions not to put bellicose and anti-governmental messages online. In order for their business interests to succeed, they are quite obedient and cautious in following the government's guidelines. In addition, their organizations are loose without a coherent political ideology to pursue in the development of China. They may constitute some necessary conditions for political freedom in China, but their power to influence the political structure is gradual and incremental, to a certain extent, latent.

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The concept of a civil society juxtaposed to the state figures prominently in Hegel's *Philosophy of Right*, Marx's *On the Jewish Question*, and Gramsci's *Prison Notebooks*. It has several important connotations. First, it refers to the relationship between state and society, regarding them as separate and distinct spheres roughly to be equated with the *public* and *private* spheres. In this sense, through numerous websites, these IT leaders keep a "second culture" alive for private people to exchange their ideas and enjoy closer social bonds. Second, it implies a certain *power* relationship between state and society such that there are limitations on the state's capacity to pervade and control society, and a certain power on the part of members of a society to insulate themselves from, and exert influence upon, the state. Thus, IT leaders contribute to the empowering the underprivileged groups and help them contend for power against state

control through all kinds of online activities. Third, in this realm of autonomous social power and space, civil society denotes an associational realm in which autonomous organizations are formed through voluntary association to represent the interests and aspirations of members of society. Civil society reflects the desire to curb the power of overweening states through a sphere of social organizations enjoying more or less autonomy from the state. It is true that these IT leaders form associations, such as ISP associations, E-commerce associations, the Internet society, e-forums, and some online communities such as Blog China. But some of them are parasitic to the state and directed by retired governmental officials. Even though there are some online forums, these forums are largely reflecting some personal views on reform, and are not formal ways to organize autonomous social forces against state control. However, IT advocates and Internet content providers have started to arouse public participation and interaction in social issues, such as human rights, environment, and social justice issues. Their autonomy lies in their way to provide platforms for online dialogues and discussions, an inchoate development for mass involvement in politics. They are also negotiating with the state for more freedoms online. Their symbiosis lies in that the state also wants to make the Internet forms an experimental ground for monitoring social grievances. Their parasitic dimension of these leaders lies in their unwillingness to challenge the state directly, but engaging in a subtle struggle and cooperation with the state. But it is quite important that these leaders at the civil society have introduced "ideational pluralism" and "alternative comparison" to the Chinese people for them to search for a better life.

Chapter 6. Conclusion:

Leadership as a Spark during Uncertain Transitions

In the last two decades, the trend of telecommunications liberalization has swept across developed countries and developing countries alike. There was a process in which the telecommunications sector shifted from monopoly to competition, from centralization to decentralization, from public ownership to private ownership, and from domestic construction to international participation. Eli Noam summarizes the global trend from monopoly to competition as "a **paradigm shift** in the concept of public telecommunications" (Noam 1987, 30)[115]. The information revolution is not just a technical revolution; it also involves lots of bargaining and compromise at the political stage. Therefore, there is a need to study the strategic group of reformers who pushed forward such changes behind the ICT diffusion in China. In addition, their potential role for the political change in China is also worthy of studying. Thus the core research question of this dissertation is: are China's IT leaders an independently innovative force that pushes for political changes in China?

Hugh Helco argues that politics finds its source in "uncertainty-- on men (and women) collectively wondering what to do" (Helco 1974, 305). Agents make conscious, contestable choices about whether they should open the ICT to competition, how to allocate resources, and how they organize themselves to push for these changes in the

[115] See also Peter L. Smith and Gregory Staple, pp. 24; L. Keta Ruiz, pp. 15.

political realm. Thus it is important for us to know who the IT leaders are, what values they hold, how they attain positions of influence at state level, and how they respond to a burgeoning civil society—the answers to these questions have important implications for the political future of China.

Research Focus

In this dissertation, those who guide and hold sway or set the trend in the current IT infrastructure restructuring, application, and policyreform were termed I T leaders. They are pioneers in the ICT sector who play positive roles in the ICT diffusion in China, including those who promote infrastructures in the ICT sector (i.e. Hu Qili for breaking up China Telecom, Edward Tian for Netcom,and other Internet Service Providers), and those Internet content providers who use the Internet to promote social justices (i.e. Liu Jun from Sina.com, Shan Chengbiao from People.com). They are the most influential figures in China's ICT reform. A common thread runs through all the definitions: their **visions** for a connected and advanced China, their **capabilities** for involving themselves into political deals, and their **courage** against conservative incumbents. In other words, the concept of leadership involves the analysis on the vision, capacity, and authority of a vanguard strategic group (less of a social stratum) in the ICT diffusion and its political implications. As a result of change and development in the modern world, society inevitably places a premium on new skills and talents; the new social values give rise to new criteria for allotting status rewards, and a new leading group emerges. From this standpoint, China's IT leadership is a broad and heterogeneous group; some are in the public sector, such as Minister Hu Qili, Peng Peng of China Railcom; and some are

private entrepreneurs (digital leaders) with prestige in providing Internet services, such as Edward Tian, Charles Zhang, Jasmine Zhang, Michael Wan, John Wang. Also included are leaders of the digital age who are advocates and activists in non-governmental organizations areas who use ICT for public causes such as Liu Jun of sina.com, Shan Chengbiao of people.com, and scientists, intellectuals, NGO leaders; all of whom together constitute a reservoir of skills, talents, and influences.

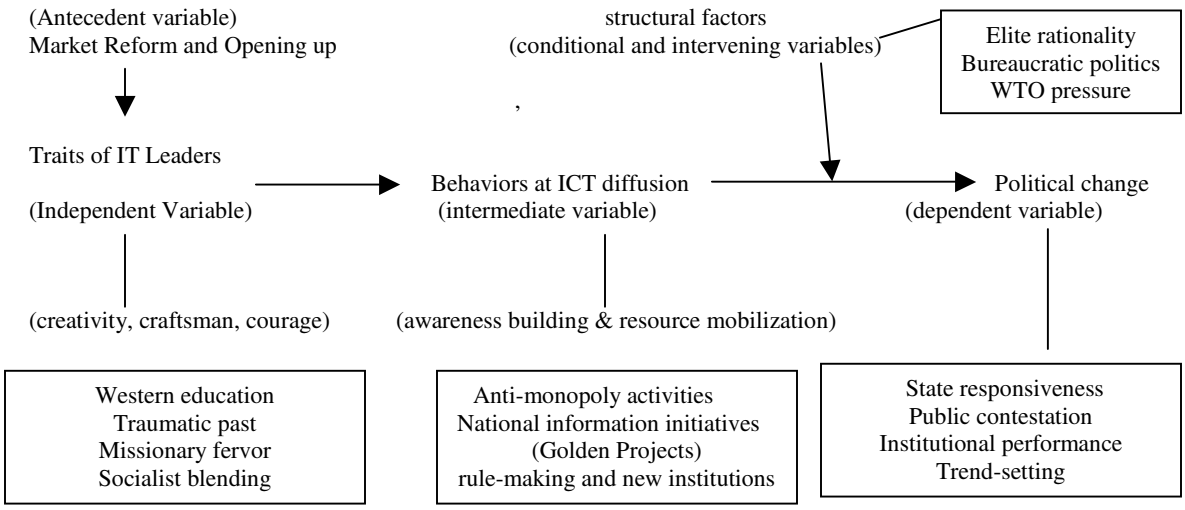
I choose these IT leaders who play proactive roles in the ICT diffusion in China because they are the pioneers of the IT reform, thus the value to test their potential impact upon politics lies in the "crucial case" study to discern these vanguards' role in politics. Therefore, I do not choose Party leaders, MII leaders, and other leaders in formal positions in the government or other conservative IT elites because they are followers of old lines and the value to test their potential role for political change is low. This definition must not obscure the fact that it is the leaders as a whole with which this analysis is ultimately concerned. Thus this study is not only on the individual traits and behaviors of IT leaders, but also the coordination between the public, private, academia, and non-profit-organizations. In order to study this strategic group and assess its political impact, its five dimensions are studied in order to dissect their traits and trace the mechanisms for change. These dimensions are the autonomous dimension, symbiotic dimension, parasitic dimension, negotiating dimension, and amphibious dimension. In the public sector, the symbiotic dimension is more salient than the others, while in the private sector the autonomous dimension is clearly shown to be dominant. In the non-governmental organizations, the negotiating dimension is strongly demonstrated. In all

sectors, the IT leaders were also characterized by their parasitic and amphibious dimensions.

In the process of ICT diffusion, there are many factors driving this change. The reason I chose to study leadership is that in times of reform, changes are always brought about by courageous, shrewd, and sagacious men and women who can guide people over uncertainty. I do not deny that structural factors such as elite rationality, bureaucratic politics, or WTO pressures may yield political outcomes in ICT diffusion, but it is leadership that provides the first cut of the bold and treacherous reform in the muddled water of ICT diffusion. Therefore, these actors are behind all structural changes in ICT diffusion and are worthy of careful studying because their initiatives for political changes are hardly captured by structural analysis. The independent variable for the dissertation is the traits and behaviors of the IT leaders, and the dependent variable is the political change measured by state responsiveness and public contestation. However, there are intervening variables that contribute to changes in the ICT sector, which are unrelated to efforts of these IT leaders. The first variable is elite rationality—political elites themselves can learn to improve the competitiveness of the ICT sector. The second intervening variable is bureaucratic politics—these ICT diffusion policies may also be a result of power struggles between different departments. The third intervening variable is the pressure facing WTO requirement that the Chinese government has to yield to international pressures for competition in the ICT sector. Even though there are intervening variables such as elite rationality and bureaucratic politics, the study of leadership is an attempt to trace the trajectory of novel ideas for change in the ICT

diffusion in China and the way they are implemented by IT leaders. Their specific traits and behaviors will be elaborated in the following section.

Figure 9. **Variables and Parameters of the Research**



Source: author

Functions of Leadership

Leaders produce enticing **visions** for a developing country like China. Robert Michels felt that the most important factor in the rise of oligarchic leadership was the inability of the masses to give direction to their own movement. Because of the apathy and general lack of political skills among the masses, leadership was not only inevitable, but also necessary; "since rank and file are incapable of looking after their own interests, it is necessary that they should have experts to attend their affairs. From this point of view it cannot be always considered a bad thing that the leaders should really lead" (Michels 1962, 112). Many IT leaders share common values and backgrounds. Most early innovators were educated abroad, often in the US and other countries. They were

exposed to these new applications in a cultural and institutional context that encouraged and rewarded experimentation and change. These individuals were also trained in technical fields like electrical engineering and computer science. They returned home driven by a compelling sense of duty and they recognized unique opportunities to do something socially important and personally rewarding. The visionaries like Edward Tian, Charles Zhang, and Jasmine Zhang were enthusiastic about the broadband networks that connect China and enlighten the Chinese people. Their advocacy of the "green revolution" of a networked knowledge society in China imbues most people with the hope for prosperity and freedom.[116] It seems like the Great Leap Forward—one step in Commune, another step in Communist a utopia; one step in broadband networks, and another step into an advanced and bright China. Their charisma establishes a powerful emotional and personalized bonds between the leader and his followers, becomes the perfect bridge between the old and new systems.[117] They are bridges between West vs. China, past vs. future, and state vs. society. They bring international norms of competition and decentralization into domestic practice. By educating officials at the central government, they attempt to help the government heed its commitment to globalization and make changes in accordance with international principles. The IT entrepreneurs such as Edward Tian, co-founder of AsiaInfo, the country's first homegrown Internet infrastructure company, Michael Wan, and Edward Zeng, have shared visions that the Internet could set an unceasing trend of development for China.

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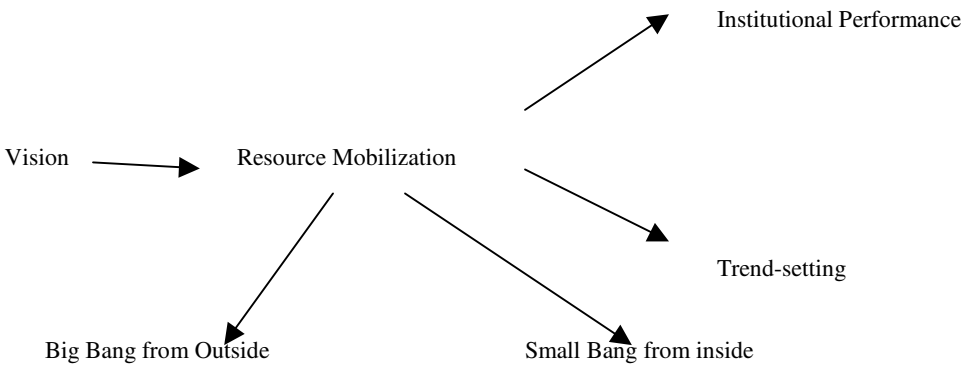
[116] President Bill Clinton remarks on March 8, 2000 in Beijing
"In the new century, liberty will spread by cell phone and cable modem.. we know how much the Internet has changed America, and we are already an open society. Imagine how much it could change China. Now, there's no question China has been trying to crack down on the Internet—good luck. That's sort of like trying to nail Jello to the wall."

[117] Leadership produces a temporary authority structure that unifies the society around the few charismatized figures and establishes the legitimacy of new institutions (Glassman 1992, 245).

They have helped construct the backbone of the country's national and provincial networks. In other words, they possessed a mix of altruism and idealism.

Figure 10: **The Working Process of Leadership**



These leaders also **mobilize resources** both from inside the state and outside of it. They were not just a one-time, coincidental collection of occasionally interacting individuals, but a group of people who remained in close contact over the years, trading professional positions, providing ideas and advice, doing political deals, and pushing forward novel ideas of development via the Internet (Wilson 2004a, 68). Their interactive, feedback relationship between these leaders and the state gave agency a prominent status in the study of China's ICT diffusion and political changes. Some reformers at the state level infiltrated existing institutions to alter their purposes and procedures, while others hammer on the doors from the outside. Thus, two developments—first, creating a community of like-minded reformers within the main ICT sector with access to political and organizational resources and then successfully venturing against monopoly of China Telecom from outside—reveal the ways in which strategically placed individuals deliberately structured the reform process. Dr. Hu

Qiheng, Prof. Qian Tianbai, Director Song Ling created alternative institutions like the State Informatization Office and CNNIC alongside inherited state institutions to serve the Communist ideologies and state efforts for development. Others, like Gao Hongbing, Jasmine Zhang, and Wang Juntao, scaled the walls that took over at the top. Leaders such as Hu Qili, Peng Peng, Gao Hongbing made initial bold moves to build a robust national information infrastructure. Edward Tian, Jiang Mianheng, Hou Ziqiang and Kan Kaili helped design the breakup of China Telecom and establish new market entries of competitive telecommunications carriers such as China Netcom and China Railcom. Shen Jian, Hu Qiheng, Jasmine Zhang, and Song Ling were engaged in rules and regulations of the ICT sector. Both groups were engaged, in complementary ways, in political changes at the ICT sector. They pass on up-to-date information, diffuse new norms, and attempt to convince the populace to act in certain ways, as well as to support particular ideas and policies. Different from transitions in Eastern Central Europe, the Chinese case is interesting because it starts with political institutionalization. Thus they became new political players like Jasmine Zhang and Gao Hongbing's design for China Netcom. Thus the "Quad" cooperation between the public, private, academia and social organizations is essential to meet social demands for pricing reform, anti-monopoly desire, and wide diffusion of the Internet service to the state level.

Their role in **institutional performance** is also salient. Leadership is not solely a matter of policy direction; it is also a matter of building, maintaining, and modifying a governing rule or regime. These IT leaders are helpful not only for the laws and regulations they created in the e-commerce sector (i.e. Electronic Signature Law), but were also instrumental for state responsiveness. For the first divestiture of China

Telecom in 1998, real competition did not come into fruition. As the general manager of China Unicom used to be deputy minister of MPT, China Unicom did not oppose China Telecom systematically. Jasmine Zhang, Gao Hongbing, and Hou Liqiang designed China Netcom, which eventually led to the breakup of the China Telecom regime, and created the rules of the political games that would determine the distribution of power. These rules prescribe who may engage in politics and how. These rules may be codified in constitutions or other legal statutes; or may be informal, embodying customs and habits to which all participants are attuned (Bratton and van de Walle 1997, 9-10).

During an interval of political uncertainty, leadership input is crucial for the shape of the new institutional dispensation. They helped political elites to recalculate their interests in the ICT sector. Then they engaged public officials to engage in numerous dialogues and discussions to change their understanding from monopoly to competition in the ICT sector, and finally decision-makers accepted their idea and make decisions favorable to the ICT diffusion. As a result, Shen Jian and Gao Hongbing wrote a report in 2000 on the impact of information technology on American society to President Jiang Zemin's mentor, Wang Daohan. This report became an integral part of the Tenth Five-Year Plan in China. Openly acknowledging necessity for this post-industrial revolution, the 10th Five-Year Plan calls for information technology to take its place along side other industrial sectors and take a central place along side other industrial sectors and take a central place as a "pillar" in the economy, and according to planners, the sector is expected to grow 30 per cent a year (Harner 2000). Thus leadership is an important step towards a harmonious state-society relationship. The attempts of these IT leaders may serve as bridges between state and society. Their cooperation with the state partly solves

the contradiction thatthe state's desire to encourage domestic and foreign competitive pressures in the economy while preserving its unchallenged political authority: to what extent to allow market reforms to co-exist with the continued dominance of the party-state. They helped build a strong ICT infrastructure and institution that are key to ameliorate state-society relationship in time of uncertainty.

They also **set trends** in civil society by creating online communities and encouraging civil engagement. They make Chinese people susceptible to global factors such as the increasing importance of technology, the arrival of the information age, and the specialization of knowledge and interests. Even though they have not fueled the engine of revolt against Communist morality, they sow the seeds for a new world culture among people. The international youth culture, as linked to high-tech consumerism, is important to direct people's world outlook. These trends become one of the factors for government to yield to global pressures and conform to global standards. In an era when the Chinese government is "crossing the river by groping for the stones beneath the river", these IT leaders have stepped into the vacuum to help the self-help function of civil society and become vanguards for fresh ideas from the West. They play a subtle role in the process of trend-setting and crafting the blueprint for future development. The following table is a summary of their activities. The first kind of activities is their attempt to influence the above—political bargaining at the state level. The second kind consists their endeavors to educate both political elites and grassroots to accept the Internet, thus playing a role of state-society bridges. The third kind of activity is their social responsibilities for alleviating environmental and other tensions at society.

Table 3. **Activities of the IT Leaders**

Activity	Leader	Position
Political Bargaining		
Lobby for price hearings and ISP licensing	Jasmine Zhang Michael Wan	Infohighway Net China (ISP)
Design and implement national information infrastructures	Hu Qili	Ministry of Electronic Industry
Plan divestiture of China Telecom	Liu Cai Kan Kaili Zhou Qiren	MPT Univ. of Posts and Telecom Beijing Univ.
Proposing new legislature	Wang Juntao Song Ling	8848.com E-commerce Association
Socio-political Education		
Organizing symposiums and workshops on licensing and prices	Jasmine Zhang	Infohighway Co., Ltd.

Educating policy-makers on Internet Café and broadband networks	Edward Zeng Edward Tian	Sparkice China Netcom
Field investigation for political leaders	Gao Hongbing Shen Jian	Cnlink Shineworks
Establishing online forums	Shan Chengbiao Jiang Yaping Web Bo	People.com Green China
Policy consultation with political elites	Gao Hongbing Edward Tian	ChinaLink China Netcom
Organizing overseas study groups	Peng Peng	China Railcom
Social Responsibility		
Public donations and social welfare	Jasmime Zhang Wang Yan	Genesis Capital Sina.com
Creating horizontal ties via blogs	Wang Junxiu	Chinalab
Surveying Internet behaviors of ordinary people	Guo Liang Mao Wei	CASS CNNIC

Source: author

Theoretical Contribution

Before understanding the theoretical contribution of China's IT leadership, we should first understand the contradictions inherent in the Communist regime because we want to know whether this newly emerged strategic group can make political changes possible out of such a contradictory system. Lucien Pye argues that the spirit of Chinese politics is "the supreme importance of consensus, conformity, and agreement requires a standardized denial of conflicts…but underneath the surface show of conformity, tensions, feuding, and factional conflicts abound" (Pye 1992, 197). The fundamental dynamic of Chinese politics is continuous tension between the imperative of consensus and conformity on one hand, and the belief, on the other, that contradiction is natural for the development of theories and practices. Therefore, to study leadership is meaningful to see how political changes can come about via contradictions beneath the political system for us to identify the sources and processes of such changes. There are several models about the state-society relationship that shed light on the possibilities or impossibilities and possible paths that may resolve that contradiction. These theories emphasize the opportunities and possibilities of political changes, with different factual support as well as underlying logic. Their logic and mechanisms are important for us to test whether these IT leaders may become an innovative and independent force to push for political changes in China. All models have strengths and weaknesses, while amphibious actor model is superior to other models because it points out the two-sidedness of China's IT leaders.

The study of leadership shares the same views with modernization theory (here renamed "**autonomous actor model**") that the newly emerged IT elites are products of

reform and openness, and thus enjoy structural and ideological autonomy. It is true that these elites also enjoy freer social space and acquire more resources. But the path by which they influence political change is totally different. In other words, economic freedoms, such as having a free social space and material resources, do not easily translate into political power. In addition, the state may also attempt to control these social activities and bind them into its patronage. For these emerging social elites to influence politics, there are other prerequisites: (1) innovative beliefs that can help more people participate in the courses of design and conduct of political activities; (2) viable channels and skills to be involved in the process of decision-making; and (3) courage to fight against conservative incumbents. Putting it simply, they need creativity, craftsmanship, and courage.

In China, these IT elites became influential not because they were wealthy. There are many other tycoons who had no influence at all at the political arena. Thus these IT leaders have increasingly gained their influence as they introduced foreign concepts and grafted them onto Chinese customs. Their autonomous beliefs were shaped largely out of the establishment and courage was not given by the state. They began to form horizontal relationships, but this relationship is not achieved through associations or societies. Their path of resource mobilization is achieved through finding people with common visions and attacking incumbents from both inside and outside. Thus it is totally different from the path encapsulated in the "autonomous actor model" (modernization/civil society model). In such a model, with a rising consciousness for collective political action, they develop a complex of social organizations that are autonomous and beyond state control. These organizations may eventually challenge the state. But the IT leaders in China start

in the patron-clientelist system as advisors to help political institutions, not as challengers of state power. They do not exercise their power through those middle organizations or associations. It is correct that leaders must have state resources to push forward their agenda, thus their personal relationship with the state is important. But this kind of system sometimes provides useful ties for these IT leaders and allows them to influence the state, thereby becoming viable channels for new ideas and practices.

The "**parasitic actor model**" captures the patron-clientelism and state corporatism that binds these business elites to the government through favorable deals in exchange for political loyalty. Therefore, civil society organizations, under authoritarian conditions, may be just one more instrument of state control rather than a mechanism of collective empowerment (Wiktorowicz 2000, 43-44). Weber and Mill warned that the middle class would become docile and locked into status hierarchies. Thus the business elites may not be a vanguard in the formation of a public sphere (Lum 2000, 12). Some scholars adopt an approach that sees the everlasting patron-clientelism and state corporatism, which inhibits creative changes from taking place. These parsimonious models include: "nomenclature capitalism," "bureaucratic capitalism," "socialist corporatism," "symbiotic clientelism," "Confucian Leninism", "Leninist patrimonialism," and "institutional amphibiousness".[118]

State corporatism points out the socialist strategy to incorporate business elites into state control. The state deliberately restricts the channels of political access and multiplicity of associations. Under the old state socialist system, leadership was paternalistic, hierarchical, and highly centralized (Yoder 1999, 28). Bruce Dickson

[118] See also X. L. Ding, pp. 293-318; Jonathan Unger and Anita Chan, pp. 104ff;. Richard Baum and Alexei Shevchenko, pp. 333-334.

shows that businessmen are closely interconnected with the state, but they do not necessarily share the same beliefs as those of officials (Goldman 2002, 16). As derived from the patron-clientelist bond, social elites strived to find other outlets for their voices.

But this overly parasitic relationship stymies changes, as contrary to our observation that China is moving forward quickly in recent decades, especially in the ICT sector. Patron-clientelist analysts get only half the story on the constraining effect of institutions and structures, but ignore the proactive role of actors to try to change, ameliorate, or alter structural constraints. The enabling or empowering factors to resolve the tension between a desire for policy innovation and institutional constraints can be found throughout the whole process of policy making during ICT diffusion. Kevin O'Brien has observed that the domicile co-opted groups became embedded in the political system for a time, they gradually release their latent energy within the system and without the system (O'Brien 1994). Over time, they gradually got the upper hand and acquired viability and legitimacy. This points to a new development ofstate -society synergy as captured in the "**symbiotic actor model**". There is mutual empowerment between the state and IT elites in that these IT leaders strengthen the infrastructural power of the state and at the same time, these IT leaders gradually gained legitimacy. Thus these IT leaders are strengthening the infrastructural power of the state. Infrastructural power is the institutional capacity of a central state to penetrate its territories and logistically implement decisions. Efforts by the IT elites facilitate a joint project of IT liberalization, while a robust and coherent state apparatus facilitates the strength of these IT leaders.

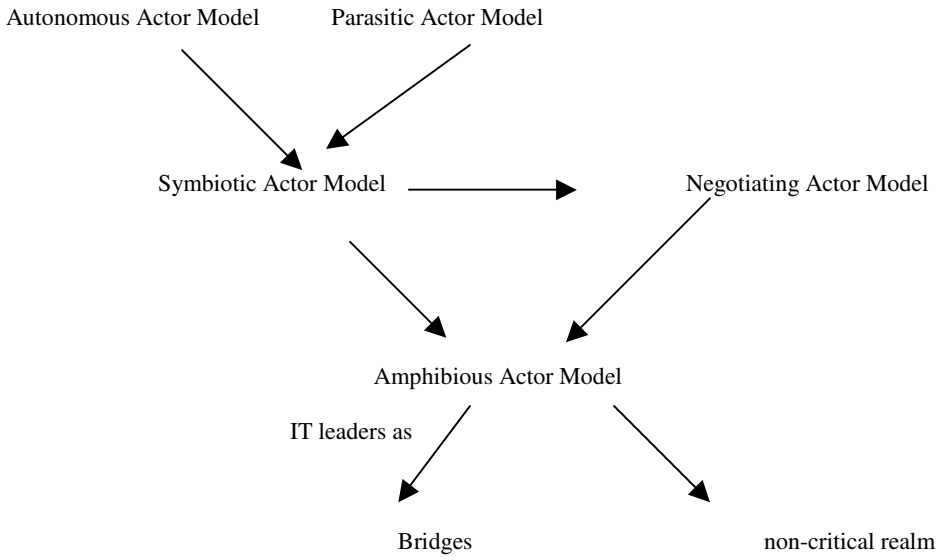
These elites constantly shift their positions because they are also engaged in a continued learning process. Therefore, the "**negotiating actor model**" captures the

multivariate efforts of social elites to press for changes at the state level. These IT leaders have devised strategies to negotiate with the state a semi-independent relationship in order to evade or deflect state intrusion. These IT leaders increasingly set trends and formulate a patterns of negotiation with the state that maximizes their power of rule making while minimizes state penetration. Thereafter, there is a constructive process that makes human behavior and social structure inseparable, simultaneous, and co-constituted. People as agents are not only bound by immaterial and inanimate institutions, but are active participants in creating their own social rules. "Structure alone explains only the possibilities (and impossibilities) of action" (Desseler 1989, 57). The constructive process via the IT leaders to help the state evolve from instrumental calculation, discursive understanding and norm internalization is a contribution to our understanding of political change in China during an era of uncertain transformations. They started with economic recalculation, then proceeded into a discursive stage participated in by all ministries and ordinary people. And, finally the political elites were persuaded and internalized many key principles in the ICT diffusion. In a word, the constructivist approach of the dissertation attempts to track down the "ratchet effect" at working--once norms of competition and decentralization have entered the dialogue between state and IT entrepreneurs, the practices keep ratcheting forward. They are changing China's political system in gradual, incremental, and perhaps even unintended ways.

However, their influence cannot be exaggerated. The "**amphibious actor model**" points out the weakness of these IT leaders in the asymmetric power distribution between state and social actors. The state's power can be despotic. Despotic power refers to the distributive power of the state elite over civil society. It is the absolute power and force

of the state without routine negotiation with civil society groups. Thus one important question arises: can social elites or these IT leaders challenge conservative incumbents? The story can be either optimistic or pessimistic. Hu Qili, Jasmine Zhang, and Peng Peng were successful at their initial attempts for ICT reform, but they finally lost the power struggle. Therefore, we cannot simply divide their relationship with the political regime as simply cooperative or confrontational. These leaders dare not challenge the legitimacy of the Party and its monolithic despotic power. They have a dual character—a mixture with a desire for a responsive political regime and the dependence on personal ties within this hierarchical system for their own self-interest. Therefore some of these leaders are quite satisfied with the working mechanism of this political system. The amphibiousness of these IT leaders has determined that their relationship with the state is to be neither too close nor distant (*ruo ji ruo li*). It remains to be seen whether they can evolve into an independent social stratum that can push for democracy in China. Caution is also required in the analysis of the role of "guanxi" (connection) in social organization. It may be a kind of patron-clientelism or corporatism, but can also become a power of erosion through which IT elites can have access to the state's resources and its decision making circle. Thus this amphibious actor model points out two possible paths of political change: one might be that these IT elites are satisfied with their gains, thus losing interest in further political reform. The other path might be that these IT leaders become embedded in the system and gradually change the legitimacy of the government to be more responsive to social demands. Both directions are possible and need follow-up studies.

Figure 11: **Theoretical Development of China's IT Leadership**



Source: author

Limitations of IT Leaders in China

The IT leaders belong to a non-critical sphere for political development and do not pose a direct challenge to the regime. They play a balancing role in political institutionalization and social mobilization. But even though they encouraged all kinds of civil groups, from professional associations to hobby clubs, to blossom all over the country they have not contributed to a coherent and organized force to challenge the despotic power. These IT elites lack the necessary common orientations for political reform that transcend geography and professions and a common normative fabric linking diverse social groups (publics) and underprivileged communities together. Many IT elites prioritize their efforts for business interests, thus may stop pushing forward a political agenda on their vested interests. Some people have liberal political ideologies,

but do not necessarily translate them into political action. In addition, we cannot be overly optimistic over the liberalizing effect of the Internet by these IT leaders. There is an exemplary effect of the Internet by providing alternative comparisons for people to get a broader understanding of political freedom. There is also a contagion or snowballing effect of global capitalist system over the Internet, but the linkage to local democracy remains murky. In addition, the state may use the Internet as a tool to monitor social activities. It allows some free space on the Internet for free discussions (chat-rooms) such as Strengthening China Forum of the People's Daily dot com. Although scientists, intellectuals, and NGO groups establish ISP/ICPs to express their own opinions and formulate forums that have a subtle impact upon the state, the state can also take advantage of this technology to invigorate its power of control. These IT leaders have unleashed rising demands for rewriting egalitarian rules in the political arena, but whether those same pressures will touch off a new round of development, or reproduce and reinforce the old rules of the game, is still an unresolved question.

Formal and regular channels between state and society have not been created by these IT leaders. These IT leaders received particular attention at the state because they have the skills, knowledge, and some resources—the means to create high-speed economic growth—that the state requires. Even though there are some consultative bodies like the China E-commerce Association that can help these IT leaders connect with the state. Yet it is still unclear if these elites will promote collective action on political issues. They have not made special efforts to create a regular and free-flowing interactive channel between state and society, a key for political change in developing countries. Even though some new institutions such as the State Informatization Office

have been established, it is still doubtful whether they can transform a hierarchical state-society relationship into a horizontal one. The assertion is that they have helped reconfigure or re-adjust the state-society relationship in mutually beneficial terms is still too idealistic. Their role in creating civic awareness about the political agenda is limited and they do not have strong horizontal ties. In addition, state-society synergy is more likely to occur when the state is enmeshed in dense ties with multiple social groups. Therefore, mutual empowerment is too optimistic and idealistic as a feasible path for IT leaders to impact upon politics. The proposed symbiotic relationship is still highly unevenly tilted to the hierarchical decision power of the state.

There are conditional and intervening variables that may have an impact on political change. Therefore to discern the political impact these IT leaders have is tricky and their influence must not be overstated. China is not simply an authoritarian system undergoing democratization; it is a Leninist system undergoing both political change and economic reform simultaneously (Fewsmith 2000, 161; and Minxing Pei 1994). In recent years, Western studies of China have offered dramatically different images of the way the political system works and how policies are made. The richness of this work suggests the intellectual mileage that can be gained by looking carefully at the formal, institutional structure of the system. Two important branches of their studies constitute two key conditional variables to evaluating the IT leaders' possible political influence: *elite rationality* and *bureaucratic politics*. The rational actor theory holds that a government maximizes social gains by choosing from an array of desired goals and strategic objectives, given its perception of national interests and strategic goals. Policy makers' rationality is "bounded" and sufficient for policy options. "The Chinese Communist

leadership pursues its objectives in a systematic and logical way, given its perception of the world…. This assumption provides a path through what would otherwise seem an incomprehensible swamp"(Allison 1971, 22-23). The current development of the information infrastructure has inherited the traditional zeal for China's development and dream of grandeur in the world. However, as the Chinese leaders were more aware of past lessons and keen to experiences from developed countries, their optimism if not utopianism affecting their policy making was less driven by coercion and chaos. In contrast to Mao's era, elite scientific knowledge in Deng Xiaoping's era was not suppressed but respected, dissent not stifled but tolerated on development issues.

By the late 1990s, the Communist Party was no longer repudiating economists' warnings of the dangers of concentrating on labor and resource intensive industries. The Chinese government has started to be committed to the advance of science and technology for decades. As Peng Peng commented that the success of China Railcom's market entry was due to the grand and wise decision of the central political leaders. Thus the approval of state leaders for ICT diffusion is also crucial for the rapid competition of ICT market in China. Under reform and opening up initiative, the state is adapting its administration from direct control to communication and from communication to coordination. This is clear from the learning curve over the information technologies.

Another important intervening variable is *bureaucratic politics*. Institutional studies of China's political system have drawn on Western understandings of bureaucratic processes to develop a picture of a highly institutionalized, albeit fragmented, administrative system (Harding 1984). In particular, Lieberthal and Oksenberg's monumental study of the energy bureaucracy depicts a system in which there is an

elaborate division of labor and institutionalized operating procedures that direct the paper flow and greatly influence the decision-making process (Lieberthal and Oksenberg 1992). Their work, as well as that of others, has highlighted the fragmentation of power and consequent bargaining that takes place in the system (Lampton 1992). John Ure concluded that new market entry was not the result of a single pressure to modernize; it arose from the interests of the provincial administrations of posts and telecommunications, People's Liberation Army's business interests, state enterprises as big users, and ministries with network capacity for resale (Ure 1994, 182-194). Policy outcomes are a result of fragmented bureaus that compete with each other for resources and influence on policy. Different bureaucrats pull and haul for their personal fame and gains as well as their organizational interests, such as their organizational survivals, resources and influence on policies. Bargaining, compromise, and consensus building in the policy-making process may be a result of "standard operation procedure" of bureaucratic politics, unrelated to efforts of IT leaders. Thus the breakup of China Telecom is also power struggle between new aristocracies of President Jiang and Hu and old aristocracies of paramount leader Deng Xiaoping and Li Peng. Therefore, the IT leaders must have permission from the top elites for the protection of their reform agenda.

IT leaders operate in that broader political environment, and may be a catalyst for change and thus create a part of the necessary conditions for political change. They play a role in state responsiveness, information transparency, civic contestation, and state-society communications. But their role is not strong enough to be a sufficient condition for political changes. For sufficient conditions to be reached, these IT elites have enough resources so that the state's power may be checked and balanced. With one party's

monopoly, the inherent peculiarities of Communism and capitalism will keep for a long time, albeit the abusive despotic power is lessened to a certain extent. The government still strictly supervises the Internet operation. It has taken the specific moves to accommodate the increasingly wide range of articulate audiences to thwart or limit the possibility of political-ideological threat. Even though the state's position has changed from insulation from social elites to integration, it still retains monolithic power over social issues. The state still attempts to bind IT elites into its organizational patronage. This is a smart strategy of the state to establish corporatist links with state for fear of the potential for social unrest and the opposition that the reforms have created. But a softer strategy of state control does not blind us the paramount power of the Communist Party in the state-society relationship.

Comparisons with IT Leaders in Other Developing Countries

There are many similarities in the process by which leadership plays an important role for ICT diffusion in China and other developing countries. They coincide with their similar beliefs and behaviors for anti-monopoly initiatives. A strong vision gained during an overseas education, a good relationship with the president or other elites, active interaction with public, private, academic or non-governmental sectors, and a charismatic personality that can sway social opinions. Usually these leaders have some political clout (Nii Quaynor and President Rawlings in Ghana, Edward Tian and Jiang Mianheng), but they depend more on their independently innovative strategies to graft foreign concepts to the local environment for the rehabilitation of the ICT sector, not necessarily huge amounts of wealth. Their success in the ICT sector does not cause a fundamental

weakening of the core problems in their respective countries, i.e. neo-patrionism in Africa, and institutional inertia in Brazil, but their courageous attempts have set precedents in their respective countries to break political paralysis over decentralization, thus paving the first stones for political liberalization.

A crucial similarity is that leadership is a bridge that coalesces domestic reformers with international forces for ICT diffusion. Peter Cowhey argues that domestic politics is the primary source of telecommunications regime change from the natural monopoly to a county-hegemony community. But he also contends two other factors are involved, "domestic actors make calculations about international constraints when choosing a strategy, and domestic change can only spill over to international change if there is a market coalition with sufficient global influence and if there is an alternative cognitive framework around which to organize new principles and norms for the international regime" (Cowhey 1990, 173). Thus for ICT regime change in China, there should emerge a number of elites who understand international development clearly and are able to mobilize both domestic and international forces to push forward such a liberalizing change. The people who can make calculations and frame cognitive concepts are leaders such as Hu Qili, Jiang Mianheng, and Gao Hongbing. It also seems that Edward Tian who succeeded in AsiaInfo was also instrumental in bringing a global market coalition to press for changes at home. In Ghana, Ghana Telecom had a backward infrastructure and poor service. It was Quaynor who aligned with international forces to spread ICT in Ghana. In Brazil, the "Gang of Four" also mobilized both domestic and international sources for reform. This evidence proves that Cowhey's claim that both domestic and

foreign factors should work together to bring down monopoly and drive the ICT diffusion in developing countries.

In comparison with IT leaders in other developing countries, their immersion into the patron-clientelist system has double-edged outcomes: one independent, and the other parasitic. Through personal ties, they have gained trust and viable resources and channels for ICT liberalization. But this tie also may erode their independent pursuit of grander political goals, thus sacrificing their independent political pursuits for favorable economic deals from the establishment. They are similar to IT revolutionaries in other countries, like Nii Guaynor in Ghana. First of all these leaders have a strong vision that their countries and peoples should not be left behind as the rest of the world rocketed ahead. Many of these IT leaders received Western education, such as Michael Wan from Stanford, and Quaynor from State University of New York at Stony Brook. Second, they recognized great opportunities to offer ICT services to consumers when political elites were bewildered as to what to do. They provided a wonderful model for people to follow, such as Network Computer Systems (NCS) in Ghana and Sohu.com. Third, they all devised strategies to break or bypass monopolies in their respective nations, such as China Telecom, Ghana Telecom, and Telebras. Quaynor succeeded by bypassing Ghana Telecom with his own direct international satellite link. Fourth, personal relationships (Guanxi) sometimes played important roles too. Quaynor attended the same school with President Rawlings and some of his closest confidants and got trust from political elites. This is core to his success to manage his career within the context of Ghana's sometimes tumultuous political climate with its powerful patron-client structures and the regime's fears about political threats from new or unknown quarters like the Internet. So Edward

Tian and Hongbing Gao's success also relied heavily on their relationship with President Jiang Zemin's son, Jiang Mianheng who got his Ph. D. from Drexel in the US. And Mao Daolin of sina.com got his trust from the Chinese government due to his marriage with President Hu Jintao's daughter. Some people with close ties to the office of the president, the prime minister, or other top officials moved the Internet agenda forward. The possible outcome might turn out to be more parasitic behaviors of these IT elites for political assets. So their behaviors may very much reflect the top-down, highly authoritarian structure of the Communist Party system and its closely controlled statist institutions. In 1998, Guo Wei, CEO of Shenzhou Digital Co. Ltd., was elected into the People's Congress at Haidian District. Some IT elites even designed programs for the state to effectively monitor online activities and to block democratic websites and control civil activities, and thus were engaged in anti-democratic behaviors. Therefore, technical sophistication and social popularity are imperative for successful ICT diffusion, but so is entry into the indigenous patron-client system.

A second similarity is that the path of these IT champions impacting the political system is not characterized by bottom-up efforts, but can be conceptualized as "an upwardly seeping chain of influence" (Wilson 2004a, 200). Even though they are instrumental for some online activism, they are unable to mobilize grassroots resources to rebel against monopolies in the ICT sector. Since in developing countries, the formal channels between state and society are weak, these leaders heavily rely on personal ties with senior political elites. Thus in China, Edward Zeng projected himself with many good ties with senior Chinese leaders. In his office, he hung up photos with Premier Zhu Rongji, Jiang Zemin, Bill Clinton, Albright, and officials of UNDP. He even spent

millions of dollars lobbying his Sparkice, even renting presidential suite at the Tianyutai State Guest House. In Ghana, Nii Quaynor first got support of Edward Salia from the Ministry of Communications. President Rawlings' senior advisor P. V. Obeng also gave him great help, thus his commercial firm was easily passed at the President level. In Brazil, the pro-reform Communications Minister Motta imposed a ban on state telecom monopolies entering the value-added service market, this was vital for the growth of ISP/ICPs (Wilson 2004a, 166). Therefore, the driving force of reform in the ICT sector does not come from bottom, as social demands require anti-monopoly efforts. In developing countries where formal state-society links are too weak, the IT leaders are unable to mobilize grassroots resources to contend for power for the ICT diffusion.

A key difference between IT leaders in China and other countries is that many of these IT leaders are **"successful losers**." In Brazil, Ivan Moura Campos, Eduardo da Costa, Carlos Jose Pereira de Lucena, Tadao Takahashi, who named themselves the "Gang of Four" as innovators in the ICT sector, had a disproportionate share of vital influence over the incentives that shaped the subsequent evolution of the Brazilian Internet (Wilson 2004a, 131). In China, even though Minister Hu was successful in national information infrastructure, he himself suffered from political accusations as the underlying of ex-General Secretary of the Party, Zhao Ziyang, who was removed by Deng Xiaoping during the 1989 Tiananmen crackdown. Later he lost his power at the Politburo and retired officially in 2001. Peng Peng had similar difficulties. He was a champion of invigorating the national networks of the MOR, but lost in the power struggle against Minister Cai Qinghua and Fu Zhihuan of MOR. These ministers removed him from the presidency of China Railcom one year before his first tenure

without convening the Board conference. These ministers demoted Peng Peng because they were afraid Peng would be too powerful and challenge their authority at MOR. Minister Cai even wanted to be one the board directors of China Railcom after he retired from MOR. In addition, they wanted to curry favor to Minister Wu Jichuan by stating that China Railcom would only serve the railways, and would not become a national competitor with China Telecom.

ISP pioneers, Jasmine Zhang, Michael Wan, and John Wang (Juntao), were successful at the initial stage, but later were driven out of ISP business. Jasmine Zhang was brave enough to introduce the information highway to China and fought against irrational pricing of China Telecom, but she lost the battle at the board when the company was facing fiscal crisis. She had to start from the capital market, and thus lost her business in ISP sector. She was later invited to join the establishment of China Netcom, but her team lost to Edward Tian's team because her team was not backed by the Vice President of CAS, Yan Yixun, who was at odds with Hou Ziqiang, an engineer with close relationship with her. Even Jasmine Zhang and Gao Hongbin were successful in designing China Netcom, they lost in the power struggle and backed down. Michael Wan was successful at first by launching campaigns against monopoly of China Telecom through his first ISP association. But later he could not continue his business because China Telecom was so powerful that it rented Wan at a higher price than even the retailing price of bandwidth. This made Wan shift his business plan to equipment and other businesses in the IT sector. John Wang was initially victorious with his e-commerce platform and software business at Mt. Everest Software Development Co., Ltd. (8848). But when the business went to downturn in 2000, his ideas could not be accepted

by the Board. Then he had to change to a new business. One man told him that the more he fights, the more he loses. He was mocked at this and said on TV, "once I am still fighting, I am not losing on the battleground." In sum, their success was undoubtedly attributed to their courage, craftsmanship, and creativity in a transitional period for ICT liberalization and their promotion of the infrastructural power of the state. However, once they start to challenge the despotic power of the state, they immediately lost the battle. This is also a lesson that their revolution is "incomplete."

Privatization and commercialization in China is much harder to accomplish than in other countries. Privatization involves selling or transferring at least part of the ownership of state--owned telecommunications companies or assets to private owners. If privatization is not accepted, governments commercialize state-owned telecommunications carriers. These approaches include reducing governments' control, creating market incentives, legal incorporation and making state-owned telecommunications operators subject to commercial or bankruptcy laws. The difficulty is partly because China Telecom is so strong and powerful, and partly because of the adversarial stance of the Communist Party over autonomous telecommunications carriers. Thus the MOR was reluctant to give China Railcom a free hand to operate and demoted Peng Peng during his first term. Later all these state-owned companies were entrusted to the State Assets Management Committee. This is a step from state control to market operation, but not complete privatization. In other countries with democratic capitalism, some IT leaders can resort to legal procedures to denounce natural monopoly and encourage privatization. The example is Strive Masiyiwa vs. Postal and Telecommunications Corporation (PTC) in Zimbabwe. President Magabe of Zimbabwe

opposed awarding a cellular license to Strive Masiyiwa, an engineer trained in UK, because he was deemed as a potential threat to the patrimonial rule of President Robert Mugabe. He brought PTC to the Supreme Court and eventually the ruling was to his favor to break state monopoly on telecommunications and licenses that then should be granted to private telecommunications service providers. However, in China these leaders rarely resort to law. There are one or two anecdotal cases, such as price hearings, of people resorting to the law to solve diffusion issues. But two reasons account for their lack of interest in legal procedure: first of all, China is not a democratic country where the executive power is checked by judicial systems. They would rather resort to personal contacts instead of formal legal procedure. Second, there were not enough laws during a transitional period (i.e Telecommunications Act) with clear provisions over competition and privatization. Even though these IT leaders pushed for a Electronic Signature Law, such a law does not solve the fundamental contradiction of ICT diffusion—the imbalanced control of resources and decision-making power in few Communist compradors. To the extent that telecommunications issues are highly statist affairs, legal litigations would not solve important issues over privatization and ownership.

The institutional links between these IT leaders and the state are weaker than in other countries. In Taiwan, a coalition formed the Institute for Information Industries (III) in 1979 under the Ministry of Economic Affairs. One of the leaders, Major General Gao, focused on difficult research and development initiatives and put up a team to review the implications for the Internet. In 1994, III spawned the SEED Internet service provider and created Taiwan's National Information Infrastructure Steering Committee (Wilson 2004a, 58-9). In other countries institutions play a pivotal role in shaping the way people

do research, invest in, produce and distribute the information and communications technology. But in China, the State Informatization Office undertook some policy investigations on e-government. Its role is far less instrumental than it is supposed to be as other countries where such institutions become engines of growth and frequent forums linking with IT leaders.

An Interpretive Approach to Study Uncertainty

Social phenomena are constituted by individuals whose behavior is the results of rational decision-making and non-rational psychological process. To say that national or self interest is the locomotive of this change in ICT sector is true but trite, for national or self interest is but interests of various players—not all of which may coincide, and not all of which are coherently related to anything resembling an objective national interest. As human rationality is **bounded**, people are exposed to one or two possible alternatives at a given time. Thus most people are irrational, especially when facing something they totally feel uncertain about , such as the Internet. Thus we need a concrete understanding at the **micro-level** of how actors make strategic decisions freed from narrow economic calculation, but on a concern with all kinds of outside influences and interactions between institutions with which new meanings can emerge and human choice can occur. Policymakers are active in seeking information to better understand the world around them; increasing knowledge about problems and the factors influencing problems; learning from the lessons of previous policy implementation; and importing foreign experiences or even directly borrowing policy innovations from the others. A close look at the process of ICT diffusion reveals that the IT leaders are instrumental for the

"political learning" on the part of the senior political leaders, decision makers and social actors. These IT elites exhorted the Chinese leaders to develop knowledge-based information industries to "leapfrog" the missing stages of the Chinese development so that, by dint of increased productivity, China could withstand pressures of exhaustion of natural resources and overpopulation. This zeal for rapid growth thus created conditions for later policies making IT a priority industry to develop and intensified struggles over resources for information infrastructure. The evidence over the breakup of China Telecom, market entries of China Netcom and China Railcom, national information infrastructure and Golden Projects, licensing and price reform for private ISP/ICPs in the telecommunications sector suggests the inchoate attempts by these IT leaders to spread new attitudes among policymakers.

Political science is a discipline in constant danger of fragmentation because of the inherent contradictions between our rigourous, scientific, and parsimonious methodology and a humanistic thick description tradition (Pye 1990). Political scientists are constantly vacillating between choosing between scientific methodology and humanistic details. Comparative political studies are torn between the universal and the particular, theory and description, parsimony and "thick descriptions" (Pye 1990, 4). We are constantly pushed and pulled by the centrifugal force that leads to deviant cases of our elegantly constructed models of modernization, democratization, etc. This, in turn, has triggered fresh academic interests to respond to new developments that are revising and reshaping the political universe. Modernization theory predicts that accelerated communication and technological exchanges, economic growth, and the spread of higher educational systems will inevitably contribute to political changes. But the process is highly complicated and

involving numerous political forces jointly searching for ways out of uncertainty. Thus we need to go beyond the formal structures and bureaucratic politics to explore the human meaning of politics as I have tried to do in the study by concentrating largely on individual political agents. Merely delineating "political man" as the greedy power seekers or interest maximizers blurrs our mission to unearth the personal qualities essential for the civilized activities that are true politics (Pye 1990, 16). Thus leadership is an attempt to restore the creative aspect of politics, an emerging attempt to overcome obstacles for genuine pluralist participation and rejuvenate a static and irresponsive political regime. In this sense, these leaders in China may constitute catalysts for change including greater transparency of decision making and wider range of participation in the ICT sector.

China and Communist Transitions

How do my arguments about IT leaders in China fit into the broad literature of socialist and authoritarian transitions? In the Communist transitions in Eastern Central Europe, scholars point out that the path seems to be either top-down or bottom-up. As Sidney Tarrow argues, it was inevitable in a highly centralized system of the Soviet Union, liberalization began at the top, with a change in policy to allow socialist pluralism. As Mikhael Gorbachev intended to renovate the political class, he unleashed the experiment of *glasnost* and *perestroika* in order to prevent official obstruction or inactivity that he might lose power together. He transformed formalistic elections of the USSR's Congress of People's Deputies into the first even partially open and competitive national election in the history of the Soviet Union. Thus the initial purpose to reform the

Party in order to survive engendered the demise of the Communist Party in the USSR (Tarrow 1998, 74-5). The same process of liberalization happened in Bulgaria, too. Bulgarian younger and less implicated reformers within the Party initiated a "palace coup" after consulting with Gorbachev in 1989 that displaced the discredited top leaders.

Munck and Leff suggested a bottom up approach on transitions in other Communist countries. They argue that small, non-state organizations at the bottom had sparked an explosion of organized extra-state political activity that tore down the Communist Party. In Poland, it is evident that it is a revolution from the bottom. The impetus came originally from outside the incumbent elite, from the labor-based social movement Solidarity, founded in 1980 (Munck and Leff 1997, 352). In Hungary, the transition was negotiated by opposition and incumbent elites who both had a stake in pursuing an opening. The reform wing wanted to search for socialist pluralism in order to validate effective economic reform. Thus Hungary's negotiated revolution reflected the balance of power between rulers and opposition (Munck and Leff 1997, 354-6). But in China, we seem to find no revolutions at either the top or bottom levels. Neither explanation alone fits China: there is no organized social movement as revolution from below and nor pluralist opening that led to a revolution from the above.[119]

[119] First of all, the problem is that the relative autonomy of the state from society, resistant to change. This is a particular *leitmotif* of modern Chinese politics, namely the quest for total dominance, that characterized the elite politics throughout the century. Political power is monistic, unified, and indivisible, zero-sum game (Fewsmith 2000, 87). The era of reform has been an intense contradiction, in which the emergence of new norms and institutions stand in tension with long standing norms and traditions, in which the CCP is carrying out dual task maintaining an authoritarian party and market economy. In general, the window of opportunity for successful democratic transitions is relatively small and the likelihood of a hard-line crackdown, reversal, or unconsolidated democracy is correspondingly great.

Turning to the society side of the equation, it is apparent that the Chinese society today remains very much dominated by the state, so much so that the term "civil society" cannot hardly be put in China. The corrosion of the state bureaucracy has been mirrored by a very weak civil society (107). According to Joseph Fewsmith, what has not happened is the emergence of a strong, bureaucratic state dealing with autonomous social organizations along the lines of what Peter Evans has called "embedded autonomy." China is again in the midst of a new social transformation. At the same time, it seems that societal,

In the China case, my research on elites in three IT sectors demonstrates that it is also meaningful to look at the middle-level in order to locate the sources and processes of change through a small group of IT leaders. As information is power, it is a cutting edge sector and has created potential opening for political change in China. I argue that the IT amphibians do press for political and economic changes, but they themselves are not sufficient for broad scale changes today. But they may play an important role in the future if they ally with other social forces. Thus I have situated my dissertation among the broad literature of Communist transitions to see whether there is a possible path for democratic transitions in China. My finding is that leadership is potentially a spark. It is a part of necessary conditions for China's political change. The other necessary conditions, political opening at the top is like the oxygen; and social tensions are like dry wood. All together they constitute sufficient conditions for political changes in China. The significance of the leadership is just as what the great helmsman Mao Zedong said: "A single spark can start a prairie fire."

China today is going through a period of transition which is full of uncertainties. What the Chinese Communist party lacks, and has not articulated, is a convincing vision of where it seeks to lead the nation. Thus the Communist Party is in desperate need of a systematic and convincing rationale to justify itself and its continued rule. "The central

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economic, and intellectual pressures generated by two decades of reform have begun to challenge the conduct of elite politics, but those same pressures could not transform the old rules of the game remains . The crisis of the movement in the spring of 1989 was caused by all the same conditions that led to the collapse of communism in Eastern Europe: the contradictions of economic reform in a system still run by communist officials, growing corruption, loss of faith in the official ideology, and increasing disgust with the endless hypocrisy of those in power. But the China did not have a successful democratic transition. The main difference was that China in 1989 was much less developed, much less urbanized than the East European countries, and also much more insulated from the effects of the economic and political crisis in the Soviet Union (Spence 1990, 712-47). There are some commonalities in East European and Soviet cases such as the rise of civil society, loss of Party control, or intelligentsia such as Havel and Walesa, but there was no singular pattern that brought all of these regimes down.

challenge for the Fourth Generation leadership is not only how to remain relevant to society as a ruling party, but how to inspire and lead the nation in new directions" (Shambaugh 2003, 283). IT brings openness, transparency, and new trendsetters that open greater political debate to invigorate this nation. Thus the central conclusion of this dissertation is to demonstrate how a strategic group of IT leaders can devise, within limits, strategies to hasten trends in ICT diffusion, thus having a potential impact on the political panorama in China. In this sense, they envisage a network-based knowledge society for the future of China and provide us with proactive and convincing messages and direction of this nation. I conclude this dissertation with an optimistic view that China's IT leadership offers a peculiarly fruitful opportunity for analyzing the gradual forces for political change at the present time as China embarks upon a wider and deeper level of reform and opening up more than ever before.

Appendix I: Interviewees

Entrepreneurs

Chen Junhong	Executive Assistant to CEO	China Netcom Corporation Ltd.
Gao Hongbing	Chairman/ President	ChinaLink Networks Technology Ltd.
Gao Zhikai	Executive Director	Pacific Century
Guo Lianpo	Director of Operation	Intecs Technology, Ltd.
Jia Bo	Vice President	Beijing Golden Coast Royal Technology Development Co., Ltd.
Robert Lewis	Vice President	Nortel Ltd. Beijing Office
Luo Shijia	Deputy General Manager	SINOTRUST Business Risk Management Ltd.
Ma Hui	Senior Vice President	CCID Consulting Co., Ltd.
Peng Peng	President	China Railcom
Song Cheng	CEO	Sanfront Information Technology Co., Ltd.
Tian Wenqi	General Manager	CMEC International Engineering Co., Ltd.
Wan Pingguo (Michael)	General Manager	China Net Corporation Group.
Wang Donglin	Chairman and President	Beijing Scholar Corporation; also Deputy Board Chairman of Beijing Zhongguancun IT Association
Wang Juntao (John)	President	6688. com Ltd., Mt. Everest Software Development Co., Ltd.
Wang Junxiu	Senior Consultant	ChinaLabs Limited
Wang Shizhong (Strong)	General Manager of Enterprise Marketing Communications	China Netcom Corporations Ltd.
Wang Sing	Chief Executive Officer and Executive Director	Tom.com Ltd.
Wang Yan	General Manager	Stone Rich Sight Info. Tech. Co., Ltd. Sina.com.cn
Wang Yusheng	Senior Account Manager	Nortel Networks
Xie Wen	General Manager	ChinaLabs Limited
Yang Jin	Chief Operating Officer	Fudao.net
Yao Lan	Manager	Beijing Concord Intellectualized Electric Technic Corporation Ltd.
Yu Jie	Project Manager, Senior	China Clicks 2, International Consulting Co.,

	Consultant	Ltd.
Zhai Jun	Office Director	China Railway Communications Co., Ltd.
Zhang Shuxin (Jasmine)	Chairwoman	Genesis Capital Holdings Ltd.
Zhao Wenquan	Executive President	Beijing Blue Focus Corporation

Government Officials

He Dequan	Vice President	State Informatization Advisory Committee
Hu Qili	President	Song Qingling Foundation ex- Minister of Electronic Industry
Ni Jianmin	Professor	Department of International Affairs, Policy Research Studies Office of State Council
Ouyang Wu	Deputy Director of E-government department	State Informatization Office, Beijing
Qiu Weili	Director	American and Oceanian Division, CASS
Qiu Xiaoling	Director	Department of Computer Software, Torch High-tech Industry Development Center, Ministry of Science and Technology, PRC
Zhang Xunhai	Deputy Director General	Foreign Investment Administration, Ministry of Foreign Trade and Economic Cooperation, China
Zhao Xiaofan	Deputy Director-General	State Informatization Office, China

Academia

Dong Xiaoying	Associate Dean	National Institute for Science Industry Parks (NISIP)
Li Mingzhi	Associate Professor	E-commerce lab at the Dept. of Economics, Tsinghua University
Mao Wei	Director General	China Internet Network Information Center
Tan Zixiang	Assistant Professor	School of Information Studies, Syracuse University

Xu Anjie	Program Officer	American and Oceanian Division, Foreign Affairs Bureau, Chinese Academy of Social Sciences
Xu Rongsheng	Professor, Director	Institute of High Energy Physics Chinese Academy of Sciences Computing Center

Content Providers, Non-governmental organizations and journalists

Chen Zhixia	Vice Director	People's Daily Online
Duan Yongchao	Editor in Chief	China Computer Users
Jiang Yaping	Deputy Director	People's Daily Online and Golden Newspaper Electronic Publishing Center
Li Yuxiao	Director of Secretariat	Internet Society of China
Li Xuelin	Executive Editor in Chief	E-Week China. com
Lin Guorong	Editor in Chief	China Society for Strategy and Management, Journal of Strategy and Management
Wang Xuejun	Deputy Secretary-General	China Reform Forum
Shan Chengbiao	Director, BBS Department	People's Daily Online
Jonathan Shen Jian	Director	China Reform Forum, Silicon Valley Times
Shi Lihong	Producer	Wild China Documentary Studio
Song Ling	Director	China Electronic Commerce Association
Xu Zhiyuan	Editorial Editor	*The Economic Observer*
Zhaxi Dele	Director	Tibeten Antelope Information Center
Zhao Lijian (Jason)	Program Officer	Global Village of Beijing

Appendix II:

Chronicles of ICT Development in China

Source: author, China Internet Information Network Center, and China Telecommunications Trade, special issue 2003.

1. In December 1978, Deng Xiaoping instructed that the communications and transportation sectors shall be prioritized for the take-off of the national economy.

2. In June 1979, the State Council promulgated the policy to charge telephone installation fee to subscribers for the development of the local telephone service.

3. In 1986, Chinese Academic Network (CANET) – one of international networking projects of Beijing Research Institute of Computer Application Technology has been launched. The University of Karlsruhe in Germany acted as a partner.

4. In September 1987, CANET built up the first domestic Internet e-mail node in Beijing Research Institute of Computer Application Technology, and sent out the first e-mail from China on September 14 with the title of "Across the Great Wall we can reach every corner in the world." The e-mail was sent by PAD (set in Beijing by ITAPAC [Italy]) through ITAPAC and DATEX—P PAC [Germany]. It was connected to the University of Karlsruhe, with the initial communication baud rate of 300bps.

5. In early 1988, China's first X.25 PAC – CNPAC has been established. Major cities including Beijing, Shanghai, Guangzhou, Shenyang, Xi'an, Wuhan, Chengdu, Nanjing, and Shenzhen had been covered.

6. In December 1988, the college network of Tsinghua University was connected to Canada's University of British Columbia (UBC) through X.25 network and initiated the E-mail applications by adopting X400 protocol E-mail software pack, which was introduced by Professor Hu Daoyuan from UBC.

7. In 1988, the DECnet of the Institute of High Energy Physics (IHEP), Chinese Academy of Sciences (CAS) became the extension of the central DECnet in Western Europe by adopting X.25 protocol. It then achieved long-distance connection of computers and E-mail communications with regions in Europe and North America.

8. In May 1989, the Chinese Research Network (CRN) was connected to the German Research Network through the pilot X.25 net. Members of CRN

include: the No. 15 Institute of Electronic Science of the Ministry of Electronic (located in Beijing), the No. 30 Institute of the Ministry of Electronic (located in Chengdu), the No. 54 Institute of the Ministry of Electronic (located in Shijiazhuang), Fudan University, Shanghai Jiao Tong University (located in Shanghai) and Southeast University (located in Nanjing), etc. Services that CRN can provide include Email (X.400 [MHS] standard), file transmission (FTAM standard), catalogue (X.500 standard) and so on. People may also access the Internet through the gateway of DFN in Germany.

9. In October 1989, one of credit projects of the World Bank -- the Demonstration Network for Education and Scientific Research in Zhongguancun Area (named by the State Development Planning Commission), or National Computing and Networking Facility of China (NCFC, named by the World Band) prepared for initiation. It was then formally launched in November. NCFC is a high-tech information infrastructure project of the "Key Subject Development Project" of the World Bank, and was invested and supported by the State Development Planning Commission, CAS, the National Natural Science Funds and the State Development Planning Commission. The project was charged by CAS, and was jointly implemented by Peking University and Tsinghua University. The chief goal of the project was to consummate the construction of the NCFC backbone network and the college networks through technical cooperation with Peking University, Tsinghua University and CAS.

10. On Nov. 28, 1990, Professor Qian Tianbai formally registered .CN - the country code top-level domain (ccTLD) of China in Stanford Research Institute's Network Information Center (SRI-NIC), and initiated the international e-mail services under .CN. From that day on, China obtained its own identity on the Internet. Since China was not achieved the full functional connection with the Internet yet, the .CN TLD server was temporarily deployed in the University of Karlsruhe in Germany.

11. In 1991, by using DECNET proxy, High Energy Physics Institute, Chinese Academy of Sciences connected to the LIVEMORE laboratory of Stanford Linearity Accelerator Center (SLAC) in X.25 mode, and initiated the email applications.

12. In June 1992, '92 INET Conference held in Kobe, Japan. Prof. Qian Hualin made an appointment with the principal of International Network Department; National Sciences Foundation discussed the issue of official connection between China and the Internet. However, he was informed there were political obstacles since so many U.S. governments had connected to the Internet.

13. In later December 1992, Tsinghua University Network (TUNET) was set up and went into service. TUNET is the first college network that adopts TCP/IP structure in China. The backbone was successfully adopted FDDI technique for the first time, which leaded many aspects within China such as the scale, the

technique level and the application of networks.

14. In later 1992, the College Network (i.e. CASNET, which connects over 30 research institutes in Zhong Guan Cun area and CAS headquarter in San Li He) of Project NCFC, TUNET (Tsinghua University Net) and PUNET (Peking University Net) completed the construction.

15. On March 2, 1993, a 64K dedicated line to the Stanford Linear Accelerator Center (SLAC) was officially opened. Built by the Institute of High-Energy Physics, CAS, the dedicated line was connected to the United States through an international satellite communication channel rented from AT&T. It was only permitted to connect with the American energy network, because the U.S. government forbade any socialist countries to access the Internet that contained plenty of science and technology information and other resources. Nonetheless, it was still the first dedicated line through which China partly connected to the Internet. With corporation and investment of 300,000 RMB from the State Fund Commission, it then brought all the scientists in charge of key topics in various subjects to the dedicated line and enabled several hundred scientists to use E-mail in China.

16. On March 12, 1993, deputy premier Zhu Rongji proposed and deployed the establishment of National Public Economic Information Network (i.e. Golden Bridge Project).

17. In April 1993, Computer Network Information Center, Chinese Academy of Sciences called part of Network specialists in Beijing to investigate the domain name systems of each country, then framed the domain name system of China.

18. In June 1993, experts of NCFC reiterated China's requests for being connected to the Internet at the '93 INET Conference, and discussed such issue with the global Internet communities. After the meeting, researcher Qian Hualin attended the CCIRN (Coordinating Committee for Intercontinental Research Networking) Meeting, and won the support of majority participants in favor of bringing the Internet connection to China. The conference gave a great boost to China's connection to the Internet.

19. In August 1993, the State allowed private companies to provide nine kinds of telecom services to the public: wireless paging, 800 MHz radio trunked system, 450 MHz mobile communications, ntional VSAT, telephone information provision services, IT services, e-mail service, electronic data exchange and telex.

20. On August 27, 1993, Premier Li Peng approved to use the Premier Reserve of 3 million USD to support the Golden Bridge Project in initiating its prophase construction.

21. On December 10, 1993, the National Joint Conference on Economy Informatinalizing had been formed. Zou Jiahua, the deputy Premier of the State Council was appointed the chair.

22. In December 1993, the backbone network construction of NCFC was accomplished. It connected three universities by high-speed optic cable and routers.

23. In December 1993, the State Council formally approved the establishment of China United Communications Co., Ltd (China Unicom), which was inaugurated in July 1994.

24. In January 1994, Jitong Communications Co., Ltd. was established.

25. In early April 1994, the Sino-American Federation of Scientific and Technological Cooperation Committee held meeting in Washington. Before the meeting, on behalf of China, the academician Hu Qiheng, the vice-president of the Chinese Academy of Sciences reiterated to the National Science Fund (NSF) the request of China's Internet connection. The proposal was approved.

26. On April 20, 1994, the NCFC project opened a 64K international dedicated line to the Internet through Sprint Co. Ltd of the United States, which achieved its full-functional connection to the Internet. Since then, China has been officially recognized as a country with full functional Internet accessibility. It was elected one of China's top 10 scientific and technological events in 1994 by the Chinese press community and designated as one of China's key scientific and technological achievements in 1994 by the State Statistical Communiqué.

27. On May 15, 1994, the High-Energy Physics Research Institute, CAS set up China's first web server and made the first set of web pages. Apart from briefing on the development of high technology in China, there was another column called "Tour in China". Since then, the column expanded its range to the information about news, economies, culture and business and provided essays together with pictures and renamed "Windows of China" afterward.

28. On May 21, 1994, with the assistance of Professor Qian Tianbai and Karlsruhe University (Germany), the computer network information center, CAS finished setting up the China's top domain name (CN) servers, which ended the history of location abroad of CN servers. Qian Tianbai and Qian Hualin are nominated managing contactor and technical contactor respectively.

29. In May 1994, the National Research Center for Intelligent Computing System opened the first BBS in Chinese mainland – Dawn BBS.

30. On June 8, 1994, general office of the State Council issued "General Office of the State Council's Notice on the Related Issues of 'Three Golden Projects'".

From this day on, the prophase construction of the Golden Bridge Project was entirely carried out.

31. On June 28, 1994, with help of Tokyo University of Sciences, Beijing University of Chemical Technology began the pilot run of the leased line connecting with the Internet.

32. In earlier July 1994, the six-college-established (mainly by Tsinghua University) trial network "China Education and Research Network" began to operate. By using IP/x.25 technique, it became a TCP/IP based computer network that connected Beijing, Shanghai, Guangzhou, Nanjing and Xi'an, and also connected with the Internet through the international port of NCFC.

33. In August 1994, the project of China Education and Research Network (CERNET) was officially set. It was invested by the State Development Planning Commission and charged by the State Development Planning Commission, and aimed at connecting college computers and share the resources by using advanced computer and network communication technologies. Further more, it planed to connect with international learning networks, and establish a full functional administrative network system.

34. In September 1994, Directorate General of Telecommunications P & T and the Department of Commerce of United States signed an agreement on the Internet connection. In the agreement, the Office of Telecommunication should open two 64K leased lines (one was in Beijing, another was in Shanghai) with the assistance of the Sprint Corporation in America. It marked the start-up of the CHINANET.

35. In October 1994, MPT decided to introduce GSM.

36. In November 1994, the Administrative Commission of NCFC hosted the annual meeting of Asia-Pacific Networking Group (APNG) in Tsinghua University with assistance of CAS, Peking University and Tsinghua University. It was the first International annual meeting of Internet community in Asia-Pacific region held in China.

37. In January 1995, Directorate General of Telecommunications P & T, China Telecom opened Beijing and Shanghai 64K leased lines to the United States with help of Sprint Co. Ltd. It began to provide Internet accessing services through telephone networks, DDN leased lines and X.25 networks.

38. In January 1995, "Chueng Kong Scholars" (Chisacm), the journal published by Ministry of Education (State Educational Committee) was put onto the Internet through CERNET, focusing on providing information to the students abroad. It was the first Chinese E-journal in China.

39. In March 1995, CAS completed the long-distance connection to its four branch institutions in Shanghai, Hefei, Wuhan and Nanjing with IP/X.25 technology. It is the first step that China began to spread the Internet connection to the whole nation.

40. In March 1995, Professor Li Xing from Tsinghua University was elected the Executive Committee member of the Asia-pacific Network Information Center (APNIC) for the first time.

41. In April 1995, Chinese Academy of Sciences (CAS) launched the project of connecting its institutes that out side Beijing (known as "100 CAS Institutes Connection Project"). The objective of the project was to expand the institute network (connected over 30 institutes of CAS in Beijing) to 24 cities all over the country, in order to realize the fully connection of all domestic learning institutions and the connection with the Internet. Based on this project, the network expanded continuously, and gradually connected with many scientific academies and researching outside CAS. It became a scientific oriented national network, serving scientific users, research branches and relevant governmental departments. Its name was also changed into "China Science and Technology Network"(CSTNet).

42. In May 1995, the China Telecom began to prepare for building up the national backbone network for CHINANET.

43. In July 1995, China's first 128K leased line that connects to the United States was opened by CERNET; meanwhile, CERNET also opened DDN channels for its backbone network, connecting with eight cities - Beijing, Shanghai, Guangzhou, Nanjing, Shenyang, Xi'an, Wuhan and Chengdu. The connecting speed was 64Kbps. The NCFC connection was also achieved.

44. In August 1995, the primary phase of "Golden Bridge Project" was accomplished. It achieved the connection (through satellite network) with 24 provinces and cities all over the country, and it further connected with the Internet.

45. In December 1995, "100 CAS institutes connection project" was accomplished.

46. In December 1995, "CERNET demonstrate project" was accomplished. This project was designed and constructed wholly by Chinese engineers.

47. In January 1996, the Informatization Leading Group of the State Council and its executive office were established. Zou Jiahua, the deputy premier of the State Council leaded the group. The former office of National Economic Informatization Joint Meeting was renamed the office of Informatization Promotion Leading Group of the State Council.

48. In January 1996, CHINANET backbone network completed its construction and began to provide network services through out the country.

49. On February 1, 1996, The State Council issued "The Interim Regulations of the People's Republic of China on the Management of International Networking of Computer Information".

50. On February 27, 1996, China International E-Commerce Center of China International Electronic Commerce Center was formally established.

51. In March 1996, Tsinghua University proposed "the Unified Transmission Standard for Chinese Character Coding Adept in Different Countries" to IETF and was approved as RFC1922. It was the first Chinese proposal being approved as RFC document.

52. On April 9, 1996, the Ministry of Posts and Telecommunications issued "Rules for Administration of China's Public Computer Networks and International Connection", and effective as of the same day.

53. On June 3, 1996, the Electronics Industry Administration published "The Relevant Decisions on Administering the International Connection of Computer Information Networks". In the document, "China GBN" was renamed "China Golden Bridge Information Network". It also accredited Jitong Communication Co. Ltd the inter-connecting organization of China Golden Bridge Information Network, which was responsible for managing the connection of inner organizations and users.

54. In July 1996, the Information Office of The State Council called specialists form relative institutions to investigate the current technique implemental and administrative situations of 4 major Networks and nearly 30 ISPs in China. The investigation facilitated the standardization of network administration.

55. On September 6, 1996, the China Golden Bridge Network (China GBN) opened a 256K leased line connected to the United States. China GBN also announced the decision to provide Internet access service, mainly for institutional users through dedicated lines and individual users through telephone lines.

50. On September 22, 1996, the first domestic City Area Network (CAN) - Shanghai Hotline started its test run, which marked the accomplishment of the Shanghai Public Information Network – the main structure of Shanghai information port project.

51. In September 1996, the State Development Planning Commission formally approved starting the first stage project of "the Golden Bridge".

52. On November 15, 1996, the Shihuakai Corporation built up the Shihuakai Internet

Café besides the capital gymnasium; it was the first Internet café in China.

53. In November 1996, CERNET opened the 2M international line connected to the U.S. In the same month, during the German president's visiting, CERNET opened the learned network between China and Germany – CERNET-DFN, which is the first Internet connection to Europe from Chinese mainland.

54. In December 1996, the China Public Multimedia Communication Network, known as Net 169 began its operation. As preliminary group of connected web sites, Guangdong Shilingtong, Tianfu Hotline and Shanghai Online had officially opened.

55. On January 1, 1997, People's Daily Online (directed by People's Daily) connected to the Internet. This is the first key news website of central government.

56. In January 1997, MPT decided to separate the operation of the post sector from that of the telecom sector, piloting the effort in Chongqing and Hainan before national implementation.

57. In February 1997, the Info-Highway Network began its operation. In three months, it achieved the connection of eight cities including Beijing, Shanghai, Guangzhou, Fuzhou, Shenzhen, Xi'an, Shenyang and Haerbin. It became the earliest and largest private ISP/ ICP.

58. From April 18 to 21, 1997, The State Council held National Informatization Workshop in Shenzhen and finalized the definition, elements, guidelines, working principles, objectives and chief missions of the national informatization mechanism. The workshop also approved "the 9th five-year planning" and "2000 long-range objective". Chinese Internet project was listed on the construction agenda of the State Information Infrastructure. The workshop also proposed to set up national network information center and Internet exchange center.

59. On May 20, 1997, the State Council promulgated "the State Council's Decision on Revising the Provisional Regulations of the People's Republic of China on Managing Computer Internet Information Networks". It amended "the Provisional Regulations of the People's Republic of China on Managing Computer Internet Information Networks".

60. On May 30, 1997, the Informatization Leading Group Office of the State Council issued "Interim Policies on the Administration of Internet Domain Names in China". It then accredited CAS as the institute for founding and administering China Internet Network Information Center (CNNIC), while gave the authorization to the center of CERNET for managing ".edu.cn" through a contract with CNNIC.

61. On May 31, 1997, Beijing University of Chemical Technology cut off the satellite leased line and connected to the China Education and Research Network (CERNET).

62. On June 3, 1997, entrusted by the Office of Informatization Promotion Leading Group of State Council, CAS set up China Internet Network Information Center (CNNIC) in its Computer Network Information Center. CNNIC operates as the national Internet information center. On the same day, the Office of Informatization Promotion Leading Group of State Council announced the formation of CNNIC Steering Committee.

63. In October 1997, China's first national Internet backbone (ChinaNet) realized the connection with other three backbone networks -- China Science and Technology Network (CSTNET), China Education and Research Network (CERNET) and China Golden Bridge Network (CHINAGBN).

64. In November 1997, CNNIC published the first "Statistical Report on Internet Development in China". By October 31, 1997, there were 299,000 computer hosts and 620,000 Internet users in China; 4,066 domain names were registered under .CN. China had about 1,500 WWW web sites and 25.408M of the international bandwidth.

65. On December 30, 1997, the Ministry of Public Security issued the State Council approved "The Management of the Security of International Computer Network Information Networking".

66. On March 6, 1998, the Informatization Steering Group of the State Council issued "Implementing Rules for Interim Regulations of the People's Republic of China on the Management of International Computer Information Networking". The rules went into effect as of the date of promulgation.

67. In March of 1998, the first meeting of the 9th National People's Congress gave approval of the establishment of the Ministry of Information Industry (MII). The major task for MII is to administrate the national manufacturing of IT products, national communication and software industries, facilitating the informatization of the national economy and social services.

68. In May 1998, the project of constructing China Great Wall Network was approved by central government.

69. In June 1998, CERNET formally participated in the trail network of the next generation IP (IPv6) - 6BONE.

70. In July 1998, China Information Technology Security Certification Center (CNITSEC) initiated its trial operation after obtaining the acceptance of the Informatization Leading Group office of the State Council.

71. In July 1998, CHINANET launched the second-phase project of its backbone

network construction. This would expand the backbone bandwidth in its major 8 regions into 155M; all the node routers in these regions will be upgraded to kilo-mega bit routers.

72. In August 1998, the Ministry of Public Security officially formed the Public Information Network Security Supervision Bureau. It takes the responsibility of maintaining computer network securities, striking against crime in cyberspace, supervising the security protection of computer information systems.

73. On January 22, 1999, led by China Telecom and the Economic Information Center of the State Economic and Trade Commission, over 40 relevant government departments (offices and bureaus) hosted the Conference for Launching the E-Government Project of P.R. China in Beijing. www.gov.cn, the primary website of the project initiated its trial operation.

74. In January 1999, CNNIC published "the Third Statistic Report on the Development of Internet in China". By December 31, 1998, there were 747,000 computer hosts and 2.1 million Internet users in China; 18,396 domain names were registered under .CN. China had about 5,300 WWW web sites and 143.256Mbit/s of international bandwidth.

75. In January 1999, CERNET opened all its satellite backbone networks, which enormously increased the transmission speed. In the same month, China Science and Technology Network (CSTNET) launched two sets of satellite systems, which replaced IP/X.25, and connected with more than 40 cities all over the country.

76. In February 1999, the State Council adopted the restructuring plan of the telecom sector in China. As a result, China Mobile Communications Corporation, China Telecommunications Corporation and China Satellite Communications Group Corporation were established with the approvals from the State Council respectively in December 1999, January 2000 and June 2000. In the meantime, the State Council reorganized China Unicom by spinning off from China Telecom and incorporating Guoxin paging company into China Unicom in May 1999.

77. On February 3, 1999, "the Certification System of Electronic Business Information Security" – one of the Key Technological R&D Programs of China's 9th five-year planning (powered by China International E-Commerce Center) passed the technical achievement appraisal by the Ministry of Science and Technology and the National Pass-code Administrative Commission. It also obtained the license for selling information security products from relevant departments, and became the first purely self-developed and copyright self-owned CA security certification system for E-commerce. This system was successful in administrating the quota licenses of domestic textile.

78. In February 1999, China National Information Security Testing Evaluation & Certification Center (CNISTEC) was established.

79. On April 15, 1999, 23 influential presses of domestic websites gathered together for the first time to discuss the development of the press media of Chinese websites. "Chinese Journalistic Circles Network Media Joint Pledge" was approved in principle. The participants called on the recognition and protection of the information property on the Internet.

80. In April 1999, China Network Communications Co., Ltd. was established. The broadband high speed Internet of the Company was launched in November 2000.

81. In May 1999, CCERT (CERNET Computer Emergency Response Team) was formed in the Network Engineering Research Center of Tsinghua University. It is the first organization for dealing with network emergencies in China.

82. On July 12, 1999, ChinaNet went public on Nasdaq. This is the first Chinese conceptual stock of network company in Nasdaq.

83. In August 1999, over 200 colleges in 6 provinces used "All-China College Students Recruiting System" on CERNET, and achieved the first success.

84. On September 6, 1999, China International Electronic Commerce Exhibition (E-COMMERCE Expo'99) was held in Beijing. The exhibition was hosted by the Ministry of Foreign Trade and Economic Cooperation and the Ministry of Information Industry (MII). For the first time, Chinese government hosted an E-commerce exhibition, and for the first time, China held such a fruitful conference that demonstrated so many E-business technologies and applicable resolutions.

85. In September 1999, China Merchants Bank took the lead in providing the online banking service called "All in One Net", establishing the online service system that was composed mainly by enterprise/individual oriented bank, online payment, online negotiable securities and online shopping. Approved by the People's Bank of China on conducting personal banking business, China Merchants Bank became the first online commercial bank in China.

86. In October 1999, Mr. Wu Jianping, a professor of Tsinghua University was nominated the member of Address Supporting Organization (ASO) of the Internet Corporation of Assigned Names and Numbers (ICANN).

87. On November 2, 1999, Mr. Chen Yin, the deputy director general of Telecom Administrative Bureau of MII attended ICANN Governmental Advisory Committee (GAC) Meeting.

88. On December 23, 1999, the State Informatization Steering Group came into existence, Wu Bangguo, the Vise Premier of the State Council chaired the group. The former State Office of Informatization was renamed the State Office of Informatization Promotion.

89. On January 1, 2000, “Regulations for the Protection of National Computer Networks”was promulgated by National Administration for the Protection of State Secrets, and was put into force on the same day.

90. On January 17, 2000, the Ministry of Information Industry (MII) approved “China International Economy and Trade Net” (CIETNet) project which would be conducted by China International E-Commerce Center.

91. On January 18, 2000, China Internet Network Information Center (CNNIC) published the fifth “Statistical Report on Internet Development in China”. By the end of December 31, 1999, there were 3.5 million computer hosts and 8.9 million Internet users in China. 48695 names were registered under .CN, and China had about 15153 WWW websites and 351Mbit/s of the international bandwidth.

92. On January 18, 2000, accredited by MII, China Internet Network Information Center (CNNIC) launched the trial system of Chinese domain name.

93. On March 30, 2000, a national Internet exchange center started operation in Beijing, which increased the inter-connection bandwidth of domestic backbone networks from less than 10Mbit/s to 100Mbit/s.

94. On March 30, 2000, China Securities Regulatory Commission (CSRC) issued “the Interim Measures for the Administration of Online Stock Commission”.

95. On May 17, 2000, China Mobile Network (CMNET) was put into operation. On the same day, China Mobile Co. formally initiated the “Global link WAP” Service.

96. On May 20, 2000, Chinese Domain Name Consortium (CDNC) was founded in Beijing. It takes the responsibility of harmonizing and regulating the development of Chinese domain name at a nongovernmental level.

97. On June 21, 2000, China Electronic Commerce Association was formally established. It aimed at strengthening the cooperation and communication among China and overseas in the field of E-commerce.

98. On July 1, 2000, being authorized by the State Council, the State Development Planning Commission designated http://www.chinabidding.gov.cn the sole network media that was entitled to publish government bidding announcement.

99. On July 7, 2000, directed by the State Economic and Trade Commission and MII, China Telecom Group and the State Economic and the Economic Information Center of the Trade Commission jointly launched “the project of enterprise accessing the Internet”.

100. On July 18, 2000, Qian Hualin, the research fellow of the Computer Network

Information Center, CAS, was elected the chair of Asia-Pacific Top Level Domains (APTLD) and won all the ballots.

101. On July 19, 2000, China Unicom Public Computer Internet (UNINET) was officially opened.

102. In July 2000, Dr. Gao Lulin, the former director general of the State Information Property Bureau participated in the ICANN at-large board election. He was nominated as one of the candidates on August 1.

103. On August 21, 2000, World Computer Congress 2000 was held in Beijing International Conference Center. President Jiang Zemin gave an important lecture in the conference, he stressed the necessity of setting up the Internet pact, and also called on people to strengthen the administration of information security, and make full use of the Internet.

104. On September 25, 2000, the State Council issued "The Telecommunication Regulation of the People's Republic of China" (Telecom Act). This is the first integrated regulation for administering the industry of telecommunication in China, which marked the development of China's telecommunication industry had marched into the legal system track. On the same day, the State Council implemented "Rules for Administering the Internet Information Services".

105. In September 2000, Tsinghua University finished constructing DRAGONTAP, the first domestic exchange center of the next generation Internet. Through DRAGONTAP, the three domestic backbone networks (CERNET, CSTNET, and NSFCNET) were connected to STARTAP, an American exchange center of the next generation Internet located in Chicago, and an exchange center of Asia Pacific Advanced Network (APAN) in Tokyo, Japan. The connecting speed of the two lines was 10Mbps. The project built up the connection of many scientific networks such as Abilene, vBNS and CA*net3l, it also achieved the connection of the next generation Internet through out the world.

106. In September 2000, CERNIC, the information service center of CERNET took the lead in providing IPv6 assignment service in China.

107. On October 11, 2000, the 5th Plenary Session of the 15th Central Committee of Communist Party of China made a momentous decision in achieving the informatization. The plenary meeting reviewed and approved "Suggestions on Programming the 10th five-year plan on National Economy and Social Development by the Central Committee of Communist Party of China", which indicated "the promotion of national economy and social informatization is a strategic action which would be adopted along with achieving the modernization of socialism. Drive industrialization through informatization, make better use of their advantages as late starters and attain progress on social productivity by leaps and bounds.

108. On November 1, 2000, China Internet Network Information Center (CNNIC) published “Trial Measures for the Administration of the Registration of Chinese Domain Names” and “Trial Dispute Resolution Policy of Chinese Domain Names”. CNNIC also entrusted the Chinese domain name dispute resolution institution to China International Economy and Trade Arbitration Center (CIETAC).

109. On November 6, 2000, the State Council News Office, the Ministry of Information Industry (MII) issued “Interim Regulations for the Administration of Publishing News Materials on Websites”.

110. On November 6, 2000, the Ministry of Information Industry (MII) issued “Regulations for the Administration of the Internet Electronic Bulletin Services”.

111. On November 7, 2000, the Ministry of Information Industry (MII) issued “Announcement on Administering Chinese Domain Names”. In this document, MII standardized the registration services and administrations of Chinese domain names, and specifically accredited the Chinese domain name registry to CNNIC.

112. On November 7, 2000, China Internet Network Information Center (CNNIC) upgraded the Chinese Domain Name system, and initiated the registration services of Chinese domain names under “.CN”, “.China (in Chinese)”, “.Corporation (in Chinese)” and “.Network (in Chinese)”.

113. On November 10, 2000, China Mobile presented “Monternet Program”. By this means, it intended to found an open, cooperative and mutual beneficial chain of industrial value.

114. On December 7, 2000, initiated by the Ministry of Culture, the Central Committee of Communist Youth League, the State Administration of Radio Film and Television, National Students' Federation, the State Office of Informatization Promotion, Guangming Daily, China Telecom and China Mobile, “the Internet Manners and Culture Project” was launched in Beijing. “Civilized website accessing, civilized network establishment and civilized Internet environment” was the theme of the project.

115. On December 12, 2000, People’s Daily, XinhuaNet, ChinaNet, CCTV International Website, International Online Website, China Daily and CYCNET obtained the approval form the State Council News Office for press publication, and became the preliminary group of press websites that obtained official authorization.

116. On December 28, 2000, members of the Standing Committee of the 9th National People's Congress voted and approved “the Standing Committee of CPC’s Decision on Protecting the Internet Security” on their 19th session.

117. On January 1, 2001, the Internet project of “Every School Access the Network”

entered the phase of formal implementation.

118. On January 17, 2001, China Internet Network Information Center (CNNIC) published “the 7th Statistical Report on the Development of the Internet in China”. By the end of December 31, 2000, there were approximately 8.92 million computer hosts in China, about 22.5 million Internet users.122, 099 domain names were registered under .CN. China had approximately 265,405 WWW websites, and 2,799Mbit/s of international bandwidth.

119. In early February 2001, China Telecom began to provide the service of International Roaming on the Internet.

120. On March 2, 2001, research fellow Qian Hualin and professor Li Xing of Tsinghua University were elected members of the Executive Committee of APNIC.

121. On April 3, 2001, the Ministry of Information Industry (MII), The Ministry of Public Security, the Ministry of Culture and the State Administration For Industry & Commerce jointly promulgated “Measures for the Management of Internet Cafés”, and put it into effect as of the same day.

122. On April 13, 2001, the Ministry of Information Industry (MII), The Ministry of Public Security, the Ministry of Culture and the State Administration for Industry & Commerce started the special Rectification of “Internet Cafe”.

123. In April 2001, Professor Li Xing from Tsinghua University was elected the new chair of the Asia Pacific Network Group (APNG) Executive Committee.

124. On May 25, 2001, the Internet Society of China (ISC) was founded with the approval of the Ministry of Civil Affairs. It was established under the direction of the Ministry of Information Industry (MII), and was formed by over 70 relevant organizations, including domestic ISPs, ICPs, facility manufacturers, system integration business, academies and educational institutions.

125. In May 2001, approving by the Central Establishment Committee, China National Information Security Testing Evaluation and Certification Center was founded. The main task of the organization was to examine and confer state certifications on information security products, information system security, information security services and information security professionals.

126. On June 1, 2001, leading by the Customs General Administration of the People’s Republic of China, the port law enforcement system that was developed by 12 relevant ministries and commissions finished its trial operation in Beijing, Tianjin, Shanghai, and Guangzhou. Thereafter China’s “Electronic Port” became functional all over domestic ports.

127. In July 2001, “NSFCNET” (a high-speed Internet, the biggest project invested so far by the Natural Science Foundation of China, 1999-2000), a momentous joint project of the national natural fund that was undertaken by Tsinghua University, Computer Network Information Center of CAS, Peking University, Beijing University of Posts and Telecommunications, Beijing Beihang University passed acceptance check, and established the first learning network of the next generation Internet in China. The contents include general design of China’s experimental network of the high speed Internet; density wave minute multiplexing optical fiber transmission system; high-speed computer network and key researches on applications and demo systems in the environment of high-speed networks.

128. On July 9, 2001, the Bank of China promulgated “The Interim Rules for the Administration of Online Banking Business”.

129. On July 11, 2001, the CPC held a lecture on legal affairs in Zhongnanhai Huairentang, with the theme of protecting and facilitating the sound development of information on the Internet by legal means. Jiang Zemin, the secretary general of the CPC chaired the lecture, and emphasized that China shall catch hold of opportunities, expedite the development of information and network technologies, and apply it to practice in economy, society, technology, national defense, education, culture and law.

130. On July 29, 2001, the Ministry of Information Industry (MII) announced the Structure Guideline of National Informatization, which became the warranty and measure for analyzing and quantizing the current level of informatization.

131. In July 2001, “the Key Informatization Program of 10th five-year plan on National Economy and Social Development” was promulgated.

132. On August 23, 2001, the State Informatization Leading Group was reestablished. Premier Zhu Rongji chaired the group.

133. In August 2001, the National Computer Network and Information Security Administration Center established the national “Computer Network Emergency Response Technical Team / Coordination Center of China” (CNCERT/CC).

134. On September 7, 2001, “The Program for the 10th Five-Year-Planning of Information Industry” was issued. This is the first industry program after establishing the strategy of informatization by the government.

135. On September 7, 2001, the State Office of Informatization Promotion published “the Survey Report on Quantity of Information Resources of the Internet in China”, the survey was entrusted by the State Office of Informatization Promotion, and jointly conducted by China Internet Network Information Center (CNNIC), China Electronic Information Industry Development Research Institute and Nanjing Researching Base of the National Information Resources Administration. This is the

first domestic survey aiming at the information resources on the Internet. By the end of April 30, 2001, China had 692,490 domain names, 238,249 websites, 159,460,056 web pages and 45,598 online databases.

136. On September 20 2001, the Ministry of Information Industry (MII) issued "Measures for Inter Accounting among Internet Backbone Networks".

137. On September 29 2001, the Ministry of Information Industry (MII) issued "Interim Regulations for Connecting Services of the Internet Backbone Networks".

138. On October 8, 2001, the Ministry of Information Industry (MII) published "The Interim Regulation for the Management of the Connection of Backbone Networks".

139. On October 27, 2001, after the 24th session of the Standing Committee of the 9th National People's Congress, "the Information Network Dissemination Right" was formally included in the revised version of "The Copyright Law of People's Republic of China". Relevant regulations would protect copyrights by legal means in the environment of Internet spreading.

140. On November 20, 2001, the demonstration project of Chinese electron government affairs application was approved by the relevant departments, which marked a momentous advancement of China's "E-government".

141. On November 22, 2001, the Central Committee of Communist Youth League, the Ministry of Education, the Ministry of Culture, the State Council News Office, All China Youth Federation, National Students' Federation, the National Working Committee on Young Pioneer and China Youth Network Association jointly presented "the Civilized Internet Pact of All Country Teenagers", a set of criteria for millions of domestic teenagers to regulate their behaviors when using the Internet.

142. In November 2001, Academician Hu Qiheng, the vice Chair of Chinese Association of Science, the director general of CNNIC Steering Committee was appointed as the member of ICANN Internationalized Domain Name (IDN) Committee.

143. On December 3, 2001, China Internet Network Information Center (CNNIC) published the first "The Survey Report on the Internet Bandwidth in China". By the end of September 30, 2001, the international bandwidth in China reached 5724M.

144. On December 20, 2001, "The Project of Families Access the Internet" was formally initiated. The project was led and directed by the Ministry of Information Industry (MII), the National Women's Federation, the Central Committee of Communist Youth League, the Ministry of Science and Technology and the Ministry of Culture.

145. On December 20, 2001, the Telecommunication Administration Bureau of MII promulgated "Regulations for Financial Accounting of the National Internet Exchange Center".

146. On December 20, 2001, the 10 domestic backbone networks signed the inter-connection agreement, which implied more convenient accessing of the Internet by users in difference regions.

147. On December 22, 2001, China Unicom announced in Beijing that the first-phase project of China Unicom CDMA mobile telecommunication network had accomplished on time, and started its operate since December 31, 2001 in 31 provinces, municipalities and cities. The building up of China Unicom's CDMA network indicated that the telecommunication technology of China Mobile had stepped into a new era.

148. On December 25, 2001, Premier Zhu Rongji, Chair of the State Informatization Leading Group (SILG) moderated the first SILG meeting. As Premier Zhu pointed out, the construction of China's informatization should be push forward by attaching greater importance to unified planning, persisting with marketing, and preventing repeated construction of a same project.

149. At the end of December 2001, "China Education and Research Network CERNET", a high-speed backbone network project (1999—2001) was obtained its qualification from the government. The project was a main element of "the modern remote education project" in "the national education promotion plan of 21st century", and also the important base for constructing the lifelong education system in China. Based on DWDM/SDH, the project finished building the high-speed transmitting network with a capacity of 40Gbps and backbone transmit rate of 2.5Gbps. Except for Lhasa in Tibet, CERNET connected with other 35 provinces and central cities at speed of 55Mbps. Nearly 100 colleges were connected at speed of 100~1000Mbps. Based on CERNET, the Ministry of Education had approved 47 colleges' setting up network educational institutes (later enlarged to 67 colleges), and also allowed 19 online cooperative research centers to carry out remote education and scientific research through CERNET.

150. On December 31, 2001, the National Internet Exchange Centers began their operation in Shanghai and Guangdong respectively.

151. On January 15, 2002, China Internet Network Information Center (CNNIC) published the 9th "Statistical Report on the Development of Internet in China". By the end of December 31, 2001, there were about 125.4 million computer hosts and 33.7 million Internet users in China. 127,319 domain names were registered under .CN. China had over 277,100 WWW websites and 7597.5M of international bandwidth.

152. On March 14, 2002, the Ministry of Information Industry (MII) approved "Rules for the Administration of Internet Domain Names in China" in its 9th session. The regulation was put in force on September 30, 2002.

153. On March 26, 2002, the Internet Society of China (ISC) issued "Self-Discipline Treaty of Internet Industry in China" in Beijing, establishing the foundation of domestic self-discipline mechanism.

154. On May 17, 2002, the Ministry of Culture issued "Notification on Strengthen the Market Supervision of Internet Culture".

155. On May 17, 2002, China Telecom made a start on "China Vnet" plan in Guangzhou, which indicated the alliance of ISPs and ICPs in building the industrial chain on broadband Internet.

156. On May 17, 2002, China Mobile took the lead in providing GPRS services in the whole country. On November 18, Telecommunication Corporation of China Mobile and AT&T jointly announced the starting of the GPRS International Roaming Service between the two companies.

157. On June 27, 2002, the State Administration of Press and Publication and the Ministry of Information Industry (MII) jointly issued "Interim Regulations for the Administration of the Internet Publications". The regulation was formally put into force on August 1, 2002.

158. On July 3, 2002, the State Informatization Leading Group hosted its second meeting. During the meeting, three documents were approved, i.e. "Informatization – the Key Program in the 10th five-year plan on National Economy and Social Development", "Guiding Suggestions on Constructing China's E-government" and "Proceeding Program on Promoting Software Industry".

159. On September 25, 2002, China Internet Network Information Center (CNNIC) issued "Detailed Rules for the Registration of Domain Names", "Domain Name Dispute Resolution Policy" and "Rules for Accrediting Domain Name Registrars".

160. On September 29, 2002, Premier Zhu Rongji signed "Regulations for the Management of Places of Internet Accessing", the order No. 363 of the State Council of the People's Republic of China, It was put into effect on November 15, 2002.

161. On September 30, 2002, "Rules for the Administration of Internet Domain Names in China" was put into force.

162. From October 26 to 31, 2002, the Internet Corporation of Assigned Names and Numbers (ICANN) held its meetings in Shanghai. This was the first ICANN meeting in China. The conference was hosted by China Internet Network Information Center (CNNIC) and the Internet Society of China (ISC).

163. On November 1, 2002, ISC formed the Counter- junk mail coordinated group in Beijing with assistance of 263 Group and Sina.com. The main task of the working

group is to protect the proper benefits of Internet users and E-mail service providers in China, fairly use the Internet resources and regulate domestic E-mail service system.

164. On November 22, 2002, the Ministry of Information Industry (MII) issued "The Bulletin about Internet Domain Name System in China".

165. On November 25, 2002, approving by the Ministry of Information Industry (MII), the first Internet Conference and Exhibition of China was held in Shanghai with the Internet Society of China as the host. The conference mainly discussed the innovation of the Internet application in China, directing the further development of China's Internet industry. The theme of the conference was "The application of the Internet – long for innovation".

166. On December 16, 2002, as a sole registry of .CN, China Internet Network Information Center (CNNIC) transmitted its customer services to the accredited registrars. This is a fundamental innovation in domain name registration service system since the deployment of .CN ccTLD in 1990 in China.

167. On January 16, 2003, China Internet Network Information Center (CNNIC) published the 11th "Statistical Report on the Development of the Internet in China". By the end of December 31, 2002, there were about 20.83 million computer hosts and 59.10 million Internet users in China; 179 thousand domain names were registered under .CN. China had about 371 thousand WWW websites and 9380M of the international bandwidth.

168. On March 17, 2003, China opened the name space of the second level domain under .CN ccTLD. People now are permitted to register names directly under .CN.

169. On May 10, 2003, the Ministry of Culture issued "Provisional Regulations for Administering Internet Culture". It took effect on July 1, 2003.

170. On June 5, 2003, the Ministry of Culture issued "the Announcement of the Approval Situation of Nationwide Internet Accessing Chain Store Operators". 10 organizations were approved to construct nationwide Internet accessing store chain.

171. On June 26, 2003, CAS researcher Qian Hualin, an expert of computer network and data communication, was elected as a member of ICANN board of directors with 3 years' term. This was the first time for Chinese expert step into the highest decision making group of Internet address resources.

172. On July 9, 2003, the information working office of the State Council issued "Survey Report on China Internet Information Resources" in Beijing. By the end of December 31, 2002, the total number of domain names in China reached 940,300. China had 371,600 websites, 157 million web pages and 82,900 online databases.

173. On August 8, 2003, the first release of "China Internet Development Report" was formally published by ISC and CNNIC in Beijing. It was the first large-scale literature that comprehensively described the development situation of the Internet in China.

174. On August 8, 2003, the "anti-spam coordinate group" of ISC announced the first issue of "Spam Server Name List", which attracted attentions of all circles of the society.

175. In August 2003, net game player Li Hongchen sued Beijing Arctic Ice Technology Development Co. Ltd, the operator of "Red Moon" net game, for losing his virtual equipments. This was the first net game case, and legally educed the issue of virtual property conception.

176. On September 27, Asia-Pacific Internet Research Alliance (APIRA) was formed in Beijing. The organization was initiated by CNNIC. The initial member organization also included Korea Network Information Center (KRNIC), City University of Hong Kong, University of Macao and Taiwan Network Information Center (TWNIC).

177. On November 18, 2003, the State General Administration of Sport formally approved the E-sports as the 99th national athletic sports.

178. On November 20, 2003, CNNIC published "Survey Report on the Hot Issues of Internet Use". The report covered the information of website short message and bandwidth. It was the first time for CNNIC, even for the whole nation to publish such kind of survey report. Statistics showed that users averagely send 10.9 short messages through the Internet, while 70.8% of the broadband users use ADSL.

179. On January 12, the three nations' project (China-US-Russia) - "Global Ring Network for Advanced Applications Development" (GLORIAD) was accomplished. GLORIAD was funded and constructed by CAS, the National Science Foundation (US) and Russia Ministry and Science Group Alliance. GLORIAD will support the three countries even the global advanced scientific and educational applications. Computer Network Information Center of CAS, National Supercomputing Application Center of Illinois University and Kolchatov Institute of Russia.

180. On January 15, 2004, CNNIC published the 13th "Statistical Survey Report on the Internet Development of China". By the end of December 31, 2003, there were approximately 30.89 million computer hosts, 79.50 million Internet users in China; 340,040 names were registered under .CN domain. China had about 595,550 WWW website, and 27,216Mbps of international bandwidth.

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