THE CHINESE POLITICS OF COMMUNICATION TECHNOLOGY: UTILITY,

STATE BUILDING AND CONTROL

by

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A dissertation submitted to the

Graduate School-New Brunswick

Rutgers, The State University of New Jersey

In partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

Graduate Program in

Communication, Information and Library Studies

Written under the direction of

Professor John Pavlik

And approved by

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New Brunswick, New Jersey

MAY, 2012

ABSTRACT OF THE DISSERTATION

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This study provides an examination into the formulation and construction of information and communication technology policy in China. It traces the rise of information technology and the "informatization" drive in China's political rhetoric, and identifies the changes and trajectory of information and communication technology in China's overall policy scheme. It then asks and provides an explanatory account on why information and communication technology has risen as a central component of China's modernization campaign, and through the this analysis, discusses what the rise of information technology informs us about Chinese political culture, practice and institutional framework.

The research finds that unlike in western states, in China, the state takes a central role in deploying and diffusing communication technologies. In this process, the state embedded its values and goals into the design of an information society, and into how a specific form of communication technology should be utilized and managed. In this process, the state has made its transition from bureaucratic and ideological control to a form of "soft

control" that rests on scientism, professionalism and system-based rules. The utopian vision of an "information society", the nationalist pride in China's technology achievement, and the shared experience of cohesion and unity enabled by information and communication technology contribute to the formation of a collective national identity, in which boosts political legitimacy, and defuses the conflicts and tensions that arise from rapid economic development and socio-structural changes. Adding to the current body of research on communication technology and its impact on China, this research shifts the focus from the effect of technology, to the meaning of it. And rather than viewing communication technology as a "tool" for the ruling party to propagate its dominant agenda and directives, this study uses technology as an analytical vehicle and medium to examine the larger political system that gives meaning and significance to the behavior of its people and the organization of social movements. It opens the political utilization of communication technology to critical inquiry, and broadens the discussion of technological problems (and solutions), both practical and symbolic, to China's political and communication systems.

Acknowledgements

Writing a dissertation is a long journey. And I am lucky to have all the wonderful people along this journey, so I never felt I was all alone. If there is any ability in me to work through the research process, to scale all sorts of unexpected obstacles as well as setbacks, and to finally bring the project to the point of completion, I should owe it to collective efforts, not me, or my individual work. Without their support, I would have given up this endeavor long time ago.

I want to first thank my adviser, Prof. John Pavlik, for steering and guiding me through the dissertation journey. He helped me architect the project, and provided inestimable research support and intellectual guidance that a student can expect. I would have never completed my dissertation without his mentoring and support.

I also want to thank Prof. Montague Kern, who sat with me on that freezing, windy afternoon, to carefully go through my research ideas and helped me put them in perspective, not to mention she drove four hours to be in office that day. She patiently nurtured this project when my ideas were crude, and when my methods were unpolished. I want to thank Prof. David Karpf, for bringing me in close connection with the latest developments in political science, and for always pointing out invaluable sources and seminal work in relevant fields that helped to carry my dissertation forward. I want to thank Prof. Patrice Buzzanell, for offering me invaluable suggestions in the writing of my dissertation, to put the dissertation further in shape.

Chapter 1

Introduction

1.1 Overview

From 2000 to 2003, I worked as a reporter and editor at China Central Television in Beijing. Every morning, I took a bus from Peking University, near the city's northwest Zhongguancun area, which hosted the city's 3,000-some information technology companies, most of them with a size of no more than 100 employees. I then arrived at the CCTV building on Fuxing Road near the city's west 2nd ring road. As the national monopoly on TV broadcasting, the CCTV station was a news, information and nervous center responsible for distributing and controlling messages that can be circulated on China's national TV channels. As I traveled back and forth every day between these two locations, I couldn't help noticing the different looks, atmosphere and local cultures that characterize the development of two important communication technologies in China, television and the Internet. For television, the CCTV station, which owns and operates most national TV channels in China, carries a strong "official" and bureaucratic agenda. News programs were rigorously planned, scripted and previewed in every step of their production before they were allowed to go on TV. The Zhongguancun Information Technology Park, on the other hand, knew much fewer rules. It was a crowded, bustling business district dotted with small shops selling cheap computers and electronics components, and venders walking down the narrow alleys peddling pirated software and pornography CDs.

      In November 2007, however, when I traveled back to Beijing, the picture of

China's "old" and "new" media landscape had dramatically changed. On Fuxing Road,

the CCTV building looked just the same. But its architectural style stood in sharp contrast

to the modern skyscrapers nearby, which made it look like a thing of the past. The

Zhongguancun Technology Park, on the other hand, had morphed into an expansive,

upscale business district with high-rise buildings, luxury shopping malls, cafes and gyms,

a complete makeover that made it look like the Central Business District of Beijing. The

changes (or lack thereof) speak for the metamorphosis the information technology

industry had gone through, from small shops offering cheap electronics components, to

large, specialized IT firms providing a wide range of information and value-added

services. In less than five years, the information industry in China had managed to make

its developmental leaps and bounds. But an interesting and equally baffling phenomenon

was that the ways people access and use information on the Internet were not much

different from the ways they did five years ago. The content circulated on the Internet did

not change visibly, and the Chinese Communist Party seemed to have established an even

stronger presence online. This has led me to think about the deeper question of change

and constancy. Beneath the surface of economic prosperity and rapid technological

changes, to what extent is it true that China is moving into a new era, as asserted by the

state's reform policies? Or despite the rhetorical attention that has been given to the

subject of "development" and "progress," have things underneath remained just the

same? Through its efforts at promoting technological achievements and economic

progress, how did the state introduce and facilitate changes, while maintaining its

authority over China's cultural, political and social order? These are broad questions, and

the answers are not easy to find. However, looking at these questions may help us get behind the veil of a seemingly mysterious country, whose distinct pattern of cultural and political developments has often baffled western observers and defied classical western predictions. It might also lead us toward a new way of understanding the development of communication technology in China, which takes us away from the traditional "liberate versus control" debate.

In search for answers to these questions, I became interested in the role of technology in China's development policy, or more precisely, how information technology has been integrated into Chinese politics over the thirty years of economic liberalization and opening up. It is interesting to note that since the initiation of the economic reforms, the space left by ideology in Chinese political life was gradually taken over by technology. While "technology" emerged as a broad and somewhat ambiguous concept, information technology in particular has risen to the forefront of Chinese reform politics, and there has been an enhanced presence of "technology talk" in China's policy rhetoric. In short, information technology is not merely the "technical instrument" that drives and accelerates economic construction programs in China, it has become the medium on which China's social reality and political ideals are continuously negotiated and constructed.

To understand the evolving role of information technology in Chinese politics, one needs to review the historical evidence, institutional changes and empirical findings that might yield an explanation for the motives and rationale behind the "politics of information technology." One might also need to trace the changes and trajectory of information technology in reform policies over the past thirty years, and identify the

relevant political and social circumstances that might account for these changes. To bring

these analyses together I took a rhetoric-centered approach. As I will explain later,

rhetoric is an important device and a distinctive mark of China's political culture.

Changes in rhetoric often precede the efforts of government in redefining state priorities

and construction goals. Besides, the Chinese Communist Party has also been noted as

exceptionally effective in using rhetoric to create support and cohesion that were integral

to the success of its revolutionary and reform programs. A rhetoric-centered approach is

not only conducive to analyzing the meaning of information technology in Chinese

politics, it also helps to reveal the dynamics of change in China's economic planning and

construction processes.

This study is a look at the formulation and construction of information and

communication technology policy in China. The subject is hardly a new one since

communication policy in China has received increased attention in the past ten years,

especially with the advent and proliferation of the Internet in the 1990s. Many have

looked upon the Internet as a changing force that will move China further toward

democratic reform and civil rights liberalization. While the political intention and impact

of various policy initiatives have struck wide and heated debate, the focus on this study is

not on the effect, but on the meaning of these policy issues. Rather than looking at how a

certain policy produces change in behavior and values for a society and its people, this

study looks at how people, the political elite as well as the ordinary citizens, as the central

and ultimate agent, make sense of technology and its regulatory framework. And rather

than viewing communication technology as a "tool" for the ruling party to propagate its

dominant agenda and directives, this study uses technology as a medium to analyze the

larger political system that gives meaning and significance to the behavior of its people and the organization of social movements.

Party politics in China has borne the distinctive mark of rhetoric construction. From the early works of Mao and Deng, to the more recent years of widely circulated public ordinances, announcements, letters, opinions and administrative decisions. Concepts, often in the form of specific "word choices" are frequently used in these official documents and subsequently found their way to the mass media and the broader public culture. However it does not mean that the public culture and media exert no influence on the formation and creation of official concepts. It is the selection of certain aspects of policy issues over others that makes political as well as media rhetoric worth examining. In addition, these concepts do not stop at a dry and superficial level, but have their manifestations in metaphors, exemplars, descriptions, argument and visual images, making them appropriate materials for frame analysis. These devices allow political concepts to become "a central part of a culture and institutionalized in various ways" (Goffman, 1975). A prominent example would be the 2008 summer Olympics, where communication technology was aptly and elaborately used to forge a collective sense of spontaneity and cohesion, to capture a moment of sharing and unity that will most likely perpetuate in the common memory of Chinese national identity. Historical incidents of this kind are numerous. It's not just the technology, but the "rhetoric of technology" that furnishes the guiding framework of policy initiatives and the solutions to China's many problems and opportunities of development.

This research is an analysis of information and communication technology policy in the People's Republic of China from 1979 to 2009. The documents analyzed include central government archives, policy memos, government reports, speeches and official media publications. It holds that the framing process not only starts with journalists covering the policy stories, but also is present in the work of government leaders, policy makers and speech writers, which involves "selection and construction," the basic procedures in the framing of a message (Van Gorp, 2007). By assessing the various salient elements in policy texts, frame analysis as a method allows researchers to reconstitute the implicit cultural environment in which the political process is situated and embedded. In addition, this study will use qualitative content analysis to examine the evolving role of information technology in China's development policies, and seek to provide an explanatory account for the dynamic process in which the Chinese social reality about information and communication technology is produced, reproduced and transformed over the years.

1.2 Research questions

In performing a frame and qualitative content analysis of Chinese communication technology policies, the study will yield answers to the following research questions:

Q1: What frames have been used in describing, defining and delineating communication technologies in Chinese policy discourse?

Q2: How does China's political discourse about communication technology change in the nation's developmental path toward modernization and informatization? What do these changes reveal about China's political and social reality, and the political motivations, considerations and processes that lie behind?

Q3: How does the political discourse on communication technology create the "picture" which ordinary Chinese citizens live in? How does the political rhetoric on communication technologies justify the government's need for development, state building and state control?

1.3 Theoretical framework

In this study, I will draw on three branches of theories to build a theoretical framework that helps us analyze and understand China's political culture and communication technology. These three theories are: the theory of information politics, the (social and political) constructivist theory of technology, and the theory of the developmental state. I choose these three areas to be the relevant and vital parts of the theoretical framework, because they help capture the nature of the relationship between politics and communication technology, while at the same time remain broad enough for specific arguments and observations about a specific country to be made. I believe they also help to ground the three major focuses of analysis in this study, that is, the utility of technology, the process of nation-state building and the issue of state control, allowing them to be correlated, synthesized, and built together toward a common theme. I will first briefly review these three theories, explain their relevance for this study, and discuss how they come together at the end of this section.

1.3.1 Theory of informational politics

As this study concerns itself with the inter-relationship between technology and politics, and specifically, the political shaping and framing of communication technology, Manuel Castells' theory of informational politics can be of particular relevance. Castells (1997) argued that new communication technologies have put traditional politics and

liberal democracy under challenge. This is so because new communication technologies have brought to an end the autonomy of the individual, fragmented the political sphere, and undermined consensus building which were regarded as pre-requisites for liberal democracy.

The proliferation of communication technology brings forth a fragmented society, a society as such, according to Castells, is "without memory and without solidarity, a society that recovers its unity only in the succession of images that the media return to it every week" (p.310). Under this circumstances, politics needs to accommodate a new set of rules, that is, the logic of the media, because political parties, interest groups and individuals more than ever need to process their projects and strategies through a similar technological medium. In this sense, communication technology, particularly the electronic media, has become the "privileged space of politics" (p.311), or in other words, communication technology is the space (and the medium) where the framing of politics takes place. This technological framing of politics is not limited to the content and presentation of political issues. It also means that political actors must abide by the rules of communication technology and the interests of media organizations. Politics, in its substance, its organization, process and leadership, is all framed by the "inherent logic of the media system" (p.317).

Castells' theorizing on informational politics stays close to the McLuhan reading of communication technologies, and rings of the deterministic arguments made on the relationship between communication technologies, social change and politics. However, it should be pointed out that Castells doesn't believe that by playing the rules of the game (of communication technologies), politics is simply reduced to images, sounds, slogans

and symbolic manipulation. Rather, he emphasizes that communication technologies have become an indispensable medium of winning and exercising power. The conception of power, characteristic of the information age, is that it is fluid, open, decentralized, and constantly recreated. The state's inability to control capital and information flows, the rise of communities, and the dependence on local institutions for governance have diminished the central government's capacity to exercise coercive power, while at the same time giving rise to the practice of "soft control". If this is the case, then it introduces us to the other side of the question: In the technological framing of politics, how does politics in turn, frame communication technologies? It is a question not to be neglected, at least theoretically, in that if media frame politics, why is it not possible that politics also frames media? And it is an especially pertaining question to ask, in an authoritarian political environment like China, where the state owns the media, where communication technologies operate with less autonomy, and where media organizations are planned and integrated into the nation's political apparatus.

Communication technologies and media organizations are not autonomous entities in China, because the government, from the beginning, has carefully, persistently, (and to some degree effectively) defined the use of communication technologies. They are to be used in a certain manner, to advance certain purposes, with certain achievements in mind, and to serve particular interests as defined by the state. Therefore, communication technologies (be it print, radio, television, or the Internet) cannot be regarded as the "free conduit of information," as they are commonly presupposed in the West. They are, to use the political rhetoric of the central authorities, "essential components of the entire cause of the Party" (Jiang, 1990). Therefore, it invites us to

investigate the central question in this study: How are communication technologies framed in China's political discourse? It is in the constant political persuasion, justifying, rationalizing and sometimes repetitive hammering of ideas that communication technologies become an indispensable part of China's political infrastructure.

If Castells's argument on informational politics rests on the assumption, as he states, that media and communication technologies stand as politically neutral and independent, then this observation needs to be revised with China in consideration. Much as media systems in both China and the West work on the logic of the market (in China allegedly so after the 1990s media reforms), media organizations in the West may refuse to cover certain political events or issues on the ground of poor audience rates, Chinese media, however, are mandated to carry the broadcasts of selected political events, at the request of the government. And as Castells advances to point out the consequences of information politics in America and Europe, that it gives birth to show politics and the politics of scandal, what is witnessed in China is that communication technologies are used to construct "a healthy and orderly" social environment. This is not to indicate that "informational politics" does not pertain to China. In fact, Chinese political authorities have seen information and informatization as changing the very scope and structure of government processes (Kalathil and Boas, 2003). To explain these differences between China and the West, it calls for an analysis of how governments take different approaches toward communication technologies, and at the same time, by taking into consideration the role of communication technologies in creating new political agenda and enhancing political legitimacy, rather than simply stating that the "crisis of democracy" spelled out

by Castells on the development of new communication technologies is the equivalent of a gospel for authoritarian states and politics.

1.3.2 Constructivist theory of technology

The constructivist theory of technology, or social construction theory of technology, since the 1980s, has been commonly employed in the sociological study of technology, science and knowledge. As this study examines the relationship between politics and communication technology, to draw on the constructivist view of technology seems a logical choice.

Introduced and advanced by various sociological, historical, cultural and economic researchers (Bunge, 1966; Mulkay, 1979; Callon, 1980; Mackenzie and Wajcman, 1985; Bijker, Pinch and Hughes, 1987), the constructivist theory of technology tends to build its case on the analysis of a specific form of technology, or technological system. While findings of these analyses can be interpreted in different directions, the underlying consensus is to see technology not as a given object, but as a social construct. It frees our understanding of modern technological systems from a deterministic and static view of technology and its inner logic, and introduces us to a broader, sociocultural discussion of technology. In the perspective of constructivist theory, technology is not an autonomous entity that follows its own momentum, but is subject to and constantly shaped by social and cultural factors.

The constructivist theory of technology acknowledges that technological artifacts are culturally constructed and interpreted, and that "there is not just one possible way, or one best way, of designing an artifact" (Pinch and Bijker, 1984, p.421). It is this interpretive flexibility, namely, the different meanings social groups give to technology

that shape its further development and its fate in a given society. The cultural and political situation of a society shapes norms and values of a social group. The norms and values would in turn influence the meaning the social group gives to a technological artifact. In the multiplicity of meanings assigned to an artifact, there is no right or wrong, better or worse, but the constitution of an interpretive and deliberative framework where the merit of a technology is constructed by rhetoric.

In making such an argument, the social construction theory of technology points out a possibility that technology can be used for political purposes, and it can be constructed, or engineered to suit a certain political motive. Other than what its name indicates, this theory inherently recognizes the "politicization" of technology. In the light of the constructivist theory, a "political reading" of technology is among the multiple interpretations given to a particular technology, and cannot be easily excluded from the social process of technological development. The emphasis of this theoretical approach that choices are available, and that there're alternatives not taken suggests the shaping of technology is largely a man-made, artificial process, which is essentially not above political manipulation, planning and framing. Then with specific regard to this study, how the choices concerning communication technology becomes a political one, or how the meanings concerning communication technology become "politicized" in China, is a question worth asking. Therefore, how communication technology serves as an "instrument" to advance certain political goals and motivations can be examined as a constructed process.

The social construction approach toward the study of technology has received its share of criticisms. One of its most outspoken critics was Langdor Winner, whose work

on autonomous technology and "technics out of control" are also found to be valuable to this study. In building a theoretical framework, this study shares some of the criticisms directed at constructivism, and believes these criticisms help us understand the key questions better, and may complement rather than damage the theoretical foundation of this research. For one thing, this study agrees with Winner in saying that technology is not entirely "value-free" and that artifacts can have politics (Winner, 1986). To adopt a social constructivist lens toward the study of technology doesn't mean to deny the political qualities and capacities of a certain form of technology. It is to admit that technologies, or at least certain technologies (in this case communication technology) may carry political significance and interests in their own right. Their creation and existence in a given society may be a "political phenomenon" by itself (Winner, 1986, p.21). Winner explained this possibility from the perspectives of design, technical arrangement, and the need for authority in technological operations. He was also right in pointing out the inherent tension within socialist thought that technology can not only be used as "tools of empowerment", but means to centralize control, a long-time issue that has baffled Marxist theorists, China observers, as well as state planners.

Admitting that technology itself can have politics is not to embrace the determinist point of view. Although the social construction theory of technology often appears as the anti-thesis of technological determinism, it doesn't mean that technology itself is of no consequence and is irrelevant to its developmental path. It would be all too simplistic to assume either position, and dismiss that there's something in between. As much as recognizing that society is not determined by technology, the social construction of technology does not posit technology as solely driven and determined by social

relationships and changes. Technology, in this sense, is a medium that helps reveal the workings of various social forces, their judgments and interests, and in this particular case, the dynamics in the political sphere.

Criticisms of the constructivist approach were also made on its partial and somewhat elitist orientation. Only those salient social groups with access to resources and power were included in the analysis, while leaving out other groups that were consistently excluded from power and effectively silenced. It is, in other words, to come up with "an account of politics and society that only attends to the needs and machinations of the powerful as if they were all that mattered" (Winner, 1993, p.369). However, to carry out a piece of research, it is necessary for researchers to narrow their focus onto a few, selected social groups (as long as the selection is justified), before they find out which questions are articulated and legitimized, which (political) values are associated with a particular technology. Then, following the analysis, they can bring up or discuss questions as to what other issues are neglected or buried. Indeed, the constructivist approach can benefit from this kind of criticism by spelling out the underlying political conditions, rationales and considerations that explain the salience of some technological issues over others, and in doing so, illustrate the contingency of political decisions, rather than doing it the other way around.

In line with the constructivist thinking, it is precisely because technology is situated within the political, structural and institutional settings of a society, which continue to undergo restructuring and changes, that makes its development a socially constructed, and perhaps more importantly, politically constructed one. Therefore, to study technology is not to neglect its political aspect, and when there has been an

abundance of studies that focus on the economic, social and cultural questions of technological development, it seems good timing to bring politics back in. This study is one of the attempts to examine the role of the state in promoting and utilizing communication technology. However, it does not assume a linear, one-dimensional model, in which a central government takes initiatives and makes all the decision and plans, while technological developments simply follow. Rather, it's about how political authority produces, primarily through discourse construction, the technological environment and the technological promise in which its citizens live in.

1.3.3 Theory of the developmental state

Originating primarily in research on East Asian countries and economies, the developmental state theory emphasizes the central role of the state in achieving industrialization, economic prosperity and technological modernization. It has been used to explain the rapid industrialization and economic phenomena most prominently in, though not limited to, East Asian countries like Japan and South Korea. The developmental state theory holds that in a developing country, a strong, authoritarian state is more effective in stimulating and sustaining long-term economic growth than a neo-liberal polity (Bolesta, 2007). Chang (1999) went further to point out that for development purposes there has to be "a limit on liberalization," and "politicizing certain economic decisions" is not only necessary, but also desirable (p.191).

For a state to follow a strict developmental path, the society's ability to counteract the state's efforts must be limited. The developmental state theory then implies a strong state and weak society, or the state seeking to identify its goals with the goals of the society. Both are true with China, where central authority has been traditionally strong,

equipped with a competent bureaucratic system to execute its decisions, and a myriad of persuasive skills to impart its ideologies, values and objectives. The developmental state theory becomes a model pertaining to China, not only in the state being the main organizer and coordinator of economic construction and technological innovation, taking an interventionist approach to economic activities, but also in generating its legitimacy through these economic and technological achievements. Drawing on the developmental state theory, this study will illustrate how technological innovation has become an indispensable part of China's economic resurrection, and a critical element of its modernization drive, both symbolically and practically. And among technologies, new information technologies have increasingly been "elevated" in central policies as means to generate wealth and political transparency. Using the developmental state theory, researchers can locate the links between political concerns and the seemingly "apolitical" decisions. Without identifying these links, policy analysts and media researchers tend to see things as they are, and rarely go forward to question the political rationale and motivations that give form to these decisions.

With a powerful, assertive state at the helm of economic construction, it is not to say that the developmental state model is incompatible with democracy. The developmental state theory merely argues that for a poverty-stricken developing country, a central and concerted state can be more effective in generating economic growth than a democracy. It is only after certain level of material wealth is achieved that the state can move toward liberalization, as it happened in the cases with South Korea and Taiwan. However, researchers found drastic reduction in the dynamics of economic growth in both countries once Western-style democratic changes were brought in (Bolesta, 2007).

On the other hand, the introduction of liberalization in the economic sectors can be looked upon as the state's deliberate efforts to create conditions for sustained wealth expansion, to turn an export-dependent economy to a consumption-fuelled economy, from focusing on industrial manufacturing to providing value-added services. By this time, the developmental state would have become a developed state. And it is important to mention that communication technologies play a crucial role in this transition.

Following the conceptualization of the developmental state by Johnson (1982), Evans (1985, 1989) and Amsden (1985), Castells (1999) advanced his own definition: A developmental state is one that "establishes its principle of legitimacy its ability to promote and sustain development" and understands "by development the combination of steady high rates of economic growth, and structural change in the productive system" (P.270-271). Thus, ultimately, for a developmental state, economic development is not a goal but a means. From this perspective, Castells (1999) argued that China's economic development and technological modernization is, and was a deliberate state policy, initiated and choreographed by the state, as a sustained effort to assert national power and to renew political legitimacy. There is clearly an element of nationalism in China's modernization drive and opening-up reforms. And increasingly, this nationalism is closely bound with technological advancements. To what extent the government plays a leading and controlling role in this technological quest (particularly in communication technology) still needs to be examined with empirical evidence and systematic reasoning. However, the developmental state theory does provide the theoretical link between communication technology and China's large-scale socioeconomic drive, and the process of nation-state building. The question will be explored in detail in this dissertation.

As demonstrated in the above review, all these three theories have their merits. And all of them have limitations. But it doesn't prevent them from being used together to inform us of the political-technological dynamics in China. Combining the three into one theoretical framework allows us to draw on the relative strengths of these theories, while being able to address their respective weaknesses and shortages. The theory of the informational politics, for example, deals primarily with the technological framing of politics, whereas the other two theories are more concerned with the political framing of technology. The constructivist theory of technology may have a predominantly sociological orientation, whereas the other two approaches are essentially focused on politics. The developmental state theory, though emphasizing the importance of the state, may have neglected to question the interaction processes between the state and communication technology. The first two theories can step in to address this inadequacy. These three theories have separately emphasized the different aspects of the state-technology relationship. But they are not resistant to being combined into a more fruitful and enriched framework that helps us understand the complex and often paradoxical case of China.

1.4 Research process and chapter organization

From November 2009, I began to collect documents for the rhetorical analysis of China's information technology policy. The sources I looked at were policy collections of China's posts and telecommunications department, policies on the development and regulation of the electronics manufacturing industry, economic planning policies issued by the State Council, policies on the institutional reform of state agencies, press coverage of the latest development in electronics, information and communication technology, and

discussions of their social impact. While bringing these separate documents together, I expect to arrive at an explanatory account of the rise of information technology in Chinese politics, and propose an assessment of the political utility of information technology. I hope this study of information technology policy will yield some interesting insights on the changing nature and practice of Chinese politics, and contribute to our understanding of the evolving relationship between freedom and control in authoritarian states, and under the new form of "technology politics."

Specifically, the thesis is organized in the following sections:

Chapter one sketches out the research background and thinking that gave birth to this project. It introduces the research questions, and explains the theoretical and methodological approaches that are used to examine them. It reviews related theories on the political impact of information technology, and formulates an integrated theoretical perspective on communication technology and the issue of control in authoritarian states. When putting together the theoretical framework for this study, it takes into account the political endowment and social characteristics of China. It is expected that this introduction of research background and theoretical framework will provide a solid basis for the rhetorical analysis this study proposes, and the key research questions to be advanced and elaborated on later in the study.

Chapter two reviews the construction of communication technologies and infrastructural networks all across China, within a short period of time. It demonstrates how government policies on communication technology have provided the rationale and momentum of transforming China from an agrarian and semi-industrial society to a technologically advanced, information society, with communication technology being a

critical element of this move. It then discusses the meanings of communication technology as they were situated in Chinese political discourse on infrastructural planning and construction, and reviews the prospect of using informatization as a political device to create economic growth, technological superiority, and the developmental consensus, which in turn enhances regime legitimacy.

Chapter three looks at the presence and trajectory of information and communication technology in China's political discourse. This chapter connects the political discussion of legitimacy crisis with the utility of communication technology, and advances the argument that the ongoing legitimacy crisis provides both the rationale and imperative for China to select communication technology as one of the primary drivers of the development of national economy and political stability. This chapter draws on qualitative content analysis (of policy texts) to trace the trajectory of communication technology in China's policy discourse. Then, by reviewing the political and social circumstances in which the changes were born and embedded, this chapter makes the argument that the ongoing legitimacy crisis had driven the state to select and construct communication technology as the "pillar" and primary driver of the Chinese economy.

Chapter four analyzes the transition from bureaucratic control in China to a form of "soft control" that rests on scientism, professionalism, and system-based rules. It looks at the transition from party politics and propaganda as effective means of control to the decentralization, modernization and the enlarged role of the marketplace. It argues that although at a formal level, the direct control over communication technology seems to be reduced and diluted, the state had managed to enhance its control over society and economy through the "modernization", or more specifically, the "informatization" drive.

It then discusses the means and techniques of control and the extent to which the institutional moves, means and techniques may affect the nature and exercise of control.

Chapter five traces the process of how the state creates the utopian vision of an "information society" which its citizens live in. It examines how the politics of communication and information technology empowers the state from three perspectives: the politics of talk, the politics of innovation and the politics of spectacle. This chapter illustrates how the government's repeated rhetoric construction of an "information society" gave people a sense of belonging to a community and a nation. The vision of an "information society" also fuels the sense of pride/nationalism in China of its assertion as a technological power. Besides, the extensive use and deployment of communication technologies can facilitate the construction of a spectacle through which unity, cohesion and a collective national identity can be continuously generated and enhanced. In doing so, the government may effectively defuse the conflicts and tensions that arise from rapid economic development and socio-structural changes.

Chapter six summarizes the findings of the previous sections, and discusses the implications these findings have for the research questions of this study. It discusses the model of China as a developmental state from the perspective of information technology development, the practice of a "new politics of communication technology," the political logic of China's informatization drive, and the transformed exercise of state control.

Chapter 2

Constructing a communication technocracy: The Chinese experience

2.1 The construction of communication networks

Starting from the mid-1980s, the Chinese central government has embarked on a massive project of communications infrastructure construction. This is seen as a policy response in the communications sector to the overall market economy reforms introduced since 1978. This massive construction of communications infrastructure is probably one of the most comprehensive, large-scale and fast-growing one in world history. Within the measure of no more than twenty years, China's communications infrastructure has "leapfrogged" from being one of the most backward in communications infrastructure by global standard, to a leading, technologically advanced and highly sophisticated network. The central government has played an indispensable role in these construction efforts, achieved primarily through aggressive policy planning, escalating investment, institutional restructuring, and the leveraging of market incentives together with competition.

The government-led communications development first began in the telephone sector. In 1980 there was a total of 4.1 million telephones in China, averaging a density of 0.004 per person. In 1982, the first long-distance switching trunk was imported and installed in Fuzhou, capital of China's southeast coastal province, Fujian. By 1990 the total number of long-distance switching trunks had grown to 110,000 (Wan, 1993). The state had successfully deployed a nationwide trunk long-distance telephone system reaching 97% of townships, whereas 321 cities and counties could directly connect to 180

countries. The foundational structure of a national telephone network was in place. At the end of 1989, the number of telephone sets increased three-fold to 12.7 million, with an intracity exchange capacity of 8.2 million lines.

In the 1990s, telephone networks in China continued to develop at an accelerating rate. By the end of 1992, 86% percent of long distance calls in China were operated through automatic switching networks, and by 1995, the telephone network had completed its transition from manual to fully automated switching services. The average growth rate of the number of main telephone lines was twice the rate of GDP growth from 1988 to 1991, and reached three to four times that of the GDP growth rate in the 1990s. People's Daily, China's most official newspaper publication on state affairs, reported that the annual average growth rate of telecommunications was 45 percent during the period from 1990 to 1995 (*People's Daily*, 12/29/1995). Correspondingly, the annual number of long-distance calls increased 15 times between 1989 and 1996 (Chu, 1996). By 2000, China was the world's second largest in terms of telephone lines (ITU, 2000). Although teledensity remains relatively low, given China's vast population, it is already impressive work on the part of the government to have planned and materialized such tremendous growth in less than two decades.

Table 1: Central Office Switch Sales, 1990 to 2009, in millions of ports

Year	Total installed	Total national switching capacity
1990	2	12.3
1992	4.2	19.2
1994	18.9	49.3
1996	20.9	92.9
1998	25.5	138
2000	24.8	178
2001	77.4	256
2003	64.3	351
2005	208.8	469
2007	243.9	511
2009	240.9	492

Source: Ministry of Industry and Information Technology Annual Reports, (1990-2010).
Table 2: Number of fixed-line telephones per hundred people (1978-2001)
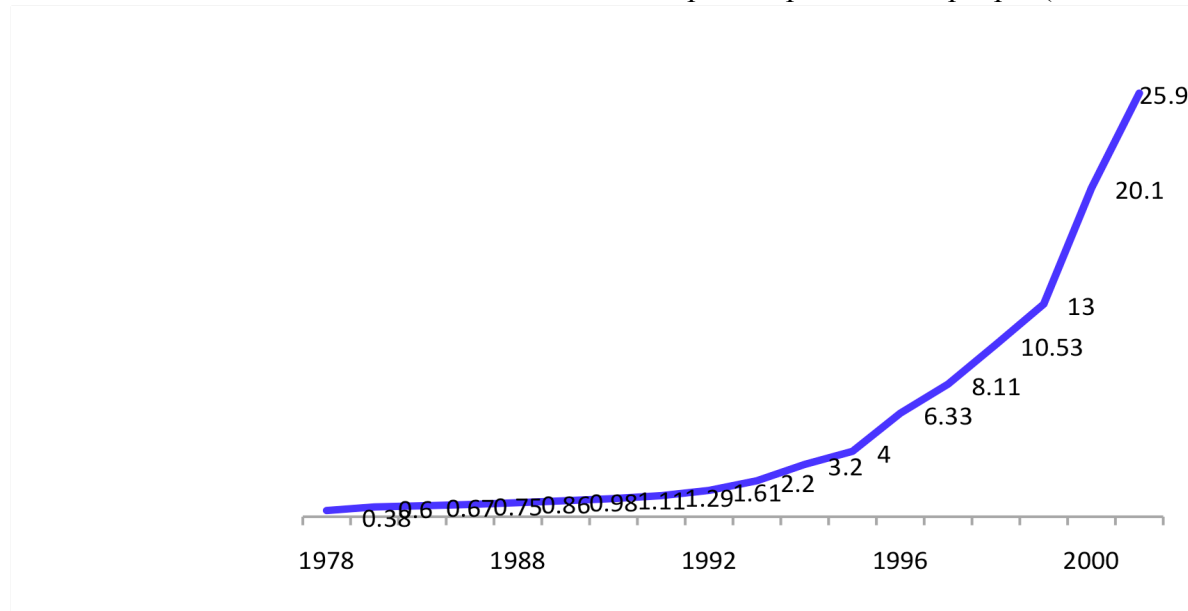
Source: Ministry of Industry and Information Technology Annual Statistics, (1986-2001).

Along with the automated switching technology, optical fiber transmission networks disseminated rapidly. In 1988, the Ministry of Posts and Telecommunications (MPT), the central agency responsible for communications technology development, was tasked with creating a nationwide optical fiber network which will link all provincial capitals and 80 percent of prefectural-level cities by 2000 (Lynch, 2000). The MPT completed the first backbone fiber optic line in October 1990, and in the next eight years, it managed to construct another 15 major backbone lines that constitute a national fiber optic grid. By the end of 2008, the total length of fiber optic lines was 6.8 million kilometers, an average annual growth rate of 45% for twenty years (China Statistical Yearbook, 1990, 1992, 1998, 2008).

Parallel to the state's efforts in constructing national communications networks, the state has traditionally been a strong promoter of broadcast technologies such as radio and TV. Radio was used extensively by the Communist Party as an effective and

invaluable tool during the eight-year war with Japan and the following civil war with the

nationalist regime. Fully recognizing the strategic importance of broadcast technologies,

the PRC government, since its birth, has actively "pushed" the technology, especially to

bridge the communications gap between China's urban and rural areas. In 1964, it was

estimated that there were six million loudspeakers in China, and 95 percent of the

counties and towns in rural China was connected by this wired radio network (Liu, 1975).

Broadcasting has always been a government enterprise. The state established and

maintained firm control of the broadcast network through a four-tiered administrative

structure, where the party committee at every level is responsible for the content and

operation of the broadcast (radio and TV) stations within its jurisdiction.

However, in the mid-1980s and early 1990s, China's broadcast network stood at

an interesting juncture. Partly because of the previous success in constructing and

controlling the broadcast network, and partly because of the shift in policy from

ideological thought work and mass campaigning to economic construction, there was not

much to be done about the current network setup. China's territorial constraints – 70% of

the country being covered by mountains – resulted in escalating costs of further

disseminating the broadcast technology. The broadcast network continued to expand, but

at a decreasing speed. In 1987, it was estimated that about 460 million people lived in

areas inaccessible to radio or TV signals (Hao, 2000). To further advance the broadcast

networks to China's numerous villages and remote areas, the government had to rely on a

new form of communication technology – the satellite.

In 1995, the state set the target of covering 85% of the country with radio and

90% of the country with television by 2000 (Jiang, 1996). China's satellite technology

development, which began in 1984 with the launch of its first experimental satellite named Dongfanghong (Sunrise) 1, has matured gradually over time. A series of satellites were launched in the 1980s and 1990s to meet the state's need to construct a national television network (Min, 1998). By the end of 1997, China was using 100 satellite transponders for domestic and international communication (Lin, 1998). As a result, remote provinces such as Yunnan, Xinjiang and Tibet all had access to satellite TV, while people all over the country could watch China Central Television News at dinner time simultaneously.

The development and flourishing of satellite TV, however, gave rise to severe control problems for the central government, as foreign broadcasters could use the same satellite reception infrastructure to directly broadcast to China. In April 1990, with the launch of Asiasat 1, carrier of the first privately-owned communication network covering Asia, Star TV began within a year to broadcast its five free-to-air TV channels to China. It was soon followed by about 200 foreign channels, openly broadcasting to Chinese satellite TV audiences. To contain this uncontrolled inflow of foreign information, the Chinese government sought to establish licensing and banning rules to curb the proliferation of foreign broadcasting. Realizing that these restrictive measures may only achieve limited results, the government turned to cable television as a potential resort to divert audience's attention from foreign broadcasts to domestically-produced programs.

The CATV system had been in place in China since the 1960s, initially used by hotels to enhance the reception of local TV programs. In the 1980s, with increasing construction of high-rise buildings in urban China, the state issued a decree in 1982 mandating that community antenna systems, the infrastructure for cable TV, be installed

in all new buildings. This has made cable TV widely accessible to urban residents. When the conflicts between foreign broadcasts and the central government intensified, the government began to heavily sponsor cable TV stations in China's urban areas. Up to 1999, there were 1,200 authorized cable TV stations reaching 77 million audiences in China's urban areas (Sun, 1998).

Like what has been seen in other communication technology sectors, the development of the Internet in China has come a long way in a short period of time. This wouldn't have been possible without large-scale government promotion and sponsorship. The starting point of the Internet infrastructure construction was in 1995, when China established its first Internet e-mail link to the outside world in the Institute of High Energy Physics of the Chinese Academy of Sciences (Wu, 1996). It should be mentioned that before 1995, a basic intra-country network was already in use since 1987, and until 1995 it was only accessible to the military and academic personnel. Deciding to take the "China Net" (CANet) to a much larger-scale, society-wide and popular use, and connect to the international network was clearly a politically conscious move, which showed the state's confidence in realizing the Internet's economic potential, and in controlling its social and political "side effects".

The main body of China's Internet is built on the physical facilities constructed, owned and operated by China Telecom, a dominant player in the telecommunications field and formerly the business operation arm of the Ministry of Posts and Telecommunications. The Internet runs on the fiber optic grid laid out by the MPT, as mentioned before. The main architecture of the fiber optic network was completed in 1998. It had nodes covering all the provincial capitals and 70% of all other cities. In the

following years, China Telecom continued to expand and upgrade the network's

communications capacity (Tan, 1999). By 2009, it was estimated that 96 percent of the

towns were connected to broadband, and 99 percent of the villages could access the

Internet (China Internet Conference, 2009).

Table 3: Number of Internet users and mobile phone subscribers (1997-2011)

Year	Internet users	Mobile phone subscribers
1997	0.62 million	13.2 million
1998	2.1 million	23.9 million
1999	8.9 million	43.3 million
2000	22.5 million	84.5 million
2001	33.7 million	150 million
2002	59.1 million	207 million
2003	79.5 million	269 million
2004	94 million	335 million
2005	111 million	393 million
2006	137 million	461 million
2007	210 million	510 million
2008	270 million	608 million
2009	384 million	703 million
2010	457 million	805 million
2011	485 million	889 million

Source: China Internet Network Information Center Annual Reports, (1997-2011);
Ministry of Industry and Information Technology Annual Statistics, (1997-2011).

It is worth mentioning that in the process of Internet infrastructure construction, a

highly centralized and hierarchical architecture dictating the way the network should be

used and managed was consequently built in place. Initially, all users connected to the

Internet through one of the four host networks, the largest two being ChinaNet and the

other China Golden Bridge Network, respectively affiliated with the Ministry of Posts

and Telecommunications and the Ministry of Electronics Industry. The rest two networks

are run by academic institutions, with much narrower influence and user bases. These

four networks are not permitted to construct their own international connections, and all

of their international connection lines are leased from China Telecom, the one and only gateway to the global network (Tan, 1999). Although it was later expanded to eight networks, the nature of a state-owned, and centrally controlled network remained intact. This architecture, as argued by many scholars and researchers on China's Internet, has made control and regulation of the Net relatively easy. Compared with the United States, where the Internet developed primarily through private investment and in a decentralized manner, China's Internet bears a clear government-sponsored stamp. It was central planning and state coordination that characterize the construction of the network structures in China.

In sketching out the development map of the Internet, it is necessary to consider how it fits into the larger policy scheme of informatization and China's modernization drive. In 2001, the central government released the Informatization of National Economy plan, in which the Internet became the front-runner of the country's informatization programs. The term "information technology," as embodied by the Internet and other emerging digital communication technologies, gained immediate political prominence, and made frequent appearances in political speeches, circulars and media reports. In the Tenth Five-Year Plan (2001-05), promoting and accelerating the construction of information technology were made a national priority. In the meantime, information technology was expected to account for an increasing contribution to GDP, from 1.98 percent in the Eighth Five-Year Plan (1991-95), to 3.4 percent in the Ninth Five-Year Plan (1996-2000) and 6.7 percent in the Tenth Plan (2001-05).

This rising emphasis on information technology in national policy was matched by the state's investment in communications infrastructure. Government investments on

post and telecommunications increased from 410 million RMB in 1978 to 177.2 billion

RMB in 1998. The annual growth rate was at 35.4%, and from 1988 to 1998, investment

increased at an annual average rate of 47.4%. From 1999 to 2008, this growth rate leveled

off, but investment continued to rise. The state investment increased from 171 billion

RMB in 1999 to 313 billion RMB in 2008, at an annual growth rate of 5.8% (China

Statistics Bureau, 2009). More recently, from 2008 to 2010, the government started a

new round of construction and spending on 3G networks, while expanding the 2G

networks to accommodate more users. It resulted in an annual spending of 335 billion

RMB in the past three years (China Statistics Bureau, 2011).

Table 4: Fixed asset investment and revenue in telecommunications (1978-2002)

Year	Investment (in RMB, billion)	Revenue (in RMB, billion)	Investment as % of revenue
1978	0.26	0.73	35.6%
1983	0.34	1.6	21.3%
1984	0.55	1.9	28.9%
1985	0.84	2.5	33.6%
1986	0.9	2.9	31.0%
1987	1.1	3.9	28.2%
1988	2.7	5.7	47.4%
1989	5	7.4	67.6%
1990	5.98	10.9	54.9%
1991	8.61	15.1	57.0%
1992	18.25	22.6	80.8%
1993	40.42	38.2	105.8%
1994	77.6	59.2	131.1%
1995	99.5	87.3	114.0%
1996	108.3	120.8	89.7%
1997	129.1	151	85.5%
1998	177.2	177.4	99.9%
1999	170.8	211.5	80.8%
2000	231.4	340.8	67.9%
2001	264	414.9	63.6%
2002	230	728	31.6%

Source: China Statistical Yearbook (1996-2002), Ministry of Industry and Information
Technology Annual Reports, (1996-2002).

As increasing investment in communications infrastructure showed the state's commitment to information technology and the construction of information society, the state, however, didn't rely entirely on its own fund. It has learned to leverage other investment mechanisms to diversify the funding resources. For example, from 1998 to 2002, after the Asian financial crisis, the state issued 660 billion (RMB) worth of government bonds, which was directed to national infrastructure projects including communications network construction. Another policy was the "Three Reversed 90%s," which stipulated that the post and telecommunications industry may retain 90% of its profit, a rate disproportionally higher than in other industries. The industry could also keep 90% of its nontrade foreign exchange earnings, and was exempted from paying 90% of the state loans (Ure, 1997). As a result, self-raised capital became an important source of funding for the construction projects in posts and telecommunications industry. To encourage technological import in the early stage of the communications development, the state waived half of the tariffs on direct import for companies manufacturing communications equipment, and waived the entire import duties for companies using World Bank or Asian Development Bank loans (Harwit, 2007).

As remarked by Zheng (2008), with the full launch and roll-out of the national informatization plan, information technology is not only perceived as the modern indicator of technological and economic progress, but as a symbol of modernity. With this symbolic meaning in mind, the government landmarked and created high-profile "IT (information technology) parks" in China's major cities and economic development regions. One of the most famous was the Zhongguancun E-park in Beijing, located in the

city's university district, as a national symbol for "China's Silicon Valley." By 1991, there were 31 IT parks in China. Most of these IT parks carry a modern and high-tech appearance. With their newly constructed gleaming buildings and state-of-the-art facilities, the IT parks represented more of the symbol than the reality of a highly "informatized" economy and society. The economic performance and output of these IT parks vary, while later research found that most of the economic growth generated by these parks was not driven by technology (Wu, 2004). However, as new additions to China's economic prospering cities, and earmarked as the "islands of information technology," these information technology parks may have already fulfilled their developmental (and symbolic) goals.

From 1985 to the early 2000s, China experienced one of the most comprehensive and massive-scale constructions of communications infrastructure in its history. The construction in telephone lines, the Internet, mobile phones as well as more traditional media such as radio and television, constituted the technologically advanced media environment Chinese people currently live in. This has also allowed China to "leapfrog" from its backward, scantily-equipped status of communications infrastructure to becoming one of the most technically sophisticated and upgraded nations in the world. What is remarkable about this change is that it was envisioned, initiated, built and completed, primarily under the sponsorship and coordination of the state. Unlike the western models of technology diffusion, which relies on the forces of the market and private capital, the Chinese experience showed that the state played a central role in modernizing a country's technological groundwork, promoting certain kinds of technological adoptions, in a condition where the efficiency of the market and economy

in disseminating communication technology was limited. The questions left to be investigated is how the state has politicized communication technologies in the process of defining, distributing, and promoting them. Did the state promote a certain way of defining, categorizing, and using communication technology that carried a political agenda? What has led the state to make such a quick but decisive move? And why did information technology policy rise in prominence in the state's national planning and policy discourse? In the next section, I will look at and examine these questions, using qualitative content and frame analysis to collect evidence.

2.2 A policy reading of China's communication infrastructure construction

To understand how state policies promoted and justified the nationwide construction of communications infrastructure, and how "informatization" became a priority in Chinese political discourse, this study performed a frame analysis of all communication-related policies from the State Council since 1985, and decrees from the Ministry of Industrial Information since 2000 (renamed as the Ministry of Industrial Information and Technology, MIIT, in the government departmental restructuring in 2008). To look at State Council policies from 1985 was because it was at that time the government had begun to actively promote and carry out systematic construction of communication infrastructures. On the other hand, to set the selection criterion for the ministerial policies as since 2000 was because it was from the Tenth Five-Year plan, published in March 2001 that the "informatization" of Chinese economy and society was first articulated and established as a national goal, and quickly gained prominence in political discourse. It was also from 2001 that the Ministry of Industrial and Information started to aggressively publicize the importance of information technology, and stressed

its position as the champion and governmental body overseeing all construction activities.

Altogether, 38 pieces of policies were selected. They included laws, decrees, directives,

circulars, and speeches from top leaders. Through this frame analysis, I expect to arrive at

the explanations of two questions: First, how communication technology was described,

referred to, or phrased in a certain way that justified the input on large-scale construction

projects, as well as its rapid and widespread diffusion? Second, what do these frames

reveal about the political thinking behind communication technologies, and the current

practices of constructing, architecting and shaping of these technologies?

After analyzing the 38 policies concerning communication technology and its

infrastructural construction, three major themes have emerged. In this process,

metaframes were also identified which constitute and supplement these major thematic

frames. They will also be included and discussed in the frame analysis. Together, these

frames provide a conceptual map that reveals how the policy makers think of, or how

they want to present and package communication technology to the public.

2.2.1 The Internet as the site for superior civilization and culture

Rather than viewing the net as the conduit of free-flowing information and the

open forum for exchanges of ideas, state policy has taken a firm standing that the Internet

is the "site for superior civilization and culture." It follows from this standing that

organizations and individuals should contribute to the production and dissemination of

"superior cultural content" online, which are prescribed by the socialist guidelines. The

net as the "site for superior culture" lends support to the argument that this "site" should

be taken over and maintained by positive and healthy content such as "scientific theories,

correct public opinions, noble spirits, and works of excellent quality" (National

Informatization Development Strategy, 2006-20, the State Council, 2006).

For the positive and healthy content to prevail on the Internet, the state reasons,

one proactive measure is to dominate the net with "advanced socialist culture" and

"excellent Chinese cultural heritage." People won't access the "harmful contents" if

positive contents are widely available to them. To achieve this goal the state urges

traditional media, including print, radio and television, to strengthen their production

capacity, and ensure sufficient supply of cultural products. It also urges the construction

of transmission networks and delivery systems that facilitate the "digitalization" of these

contents. This furnishes the incentive for the state to "speed up" the construction of

distribution networks, especially those networks that concern "public interest." Viewed in

this light, the construction of Internet infrastructure does not represent an expansion

driven by technological diffusion, but the wish of the state to translate its strength in

governing and managing traditional media into the new media front, as the following

paragraph states:

> (We must) [E]ncourage the industries of press and publication, broadcast media, film, art and literature to speed up their paces of informatization, to improve the quality of cultural products and enhance their supply capacity of cultural products. (We must) [S]peed up the consolidation of cultural information and resources, and strengthen the infrastructural construction of public interest-related culture and information, improve the efficiency of the service system and deliver cultural products to the doors of thousands of households (National Informatization Development Strategy, 2006-20, the State Council).

Labeling the Internet as the site for "superior culture" carries the implication that

there is negative or unhealthy contents that should be recognized as inferior, and they

should be wiped out. Facilitating the proliferation of "positive and healthy" content on

the Internet, a measure as mentioned above, would help "crowd out" the negative voices.

However, the state also seeks to instill in the public a moral sense of what's right and what's wrong. For those who post or distribute "harmful content" on the Internet, they are depicted as deviants from the mainstream society, their uses of the Internet termed as "abuses", and they must be alienated from the general public, who condone "right and responsible" use of the Internet. As proposed by the 2006-20 Strategy plan:

> (We must) [C]onstruct a positive and healthy Internet culture…strengthen the sense of moral restraint in online behavior, create and improve behavioral norms for the Internet, and guide the public…to voluntarily guard against the erosion of harmful ideas, and to stay away from any abuses of the Internet and acts of vulgarity.

This way of framing the Internet use as right or wrong goes hand in hand with a regulatory approach which rests itself on moral sanction and self-discipline. It stipulates that people should "know" what to do, and those who don't "know" should be shamed and brought to compliance with the social norms. Unsurprisingly, the state goes very vague on the standards of what constitutes right or wrong behavior (content), or what people should "know" exactly, perhaps in an effort to reserve the liberty to interpret what's right or wrong on a flexible, case-by-case basis. This ambiguity may also be attributed to the fact that these standards are becoming increasingly difficult to draw, and the state's expectation that leaving these online boundaries unspecified may induce people to act more cautiously on the conservative side.

The use of moral sanction and self-discipline is well-documented in research literature on Chinese politics and the mechanisms of social control. It has also been noted as a prominent theme in state-initiated media reforms since the 1980s, which have significantly leaned toward self-discipline and normalization of behavior among media professionals (Polumbaum, 1990; Zhou, 2006, Zhao, 2008). This ambiguity in

government policy has rendered the party line elusive, ever-changing and difficult to grasp. As remarked by Zhou (2006), it is "like a sword of Damocles" hanging over people's heads and proves "very effective" in deterring what the party deems as undesirable behavior. To see the same kind of ambiguity in communication technology-related policy suggests two things: First, the state does not treat the Internet as a fundamentally different medium, but an extension of traditional media, such as the press, radio and television. As the Internet becomes an increasingly popular medium of wide public influence, the state encourages the officially approved traditional media to quickly "take over" the Internet, by facilitating the construction of transmission infrastructure.

Second, to govern the Internet means to extend the current regulatory scheme for print and broadcast media to the Internet. Parallel to the state's governance of traditional media, leaving some vaguely defined autonomy on the Internet may give the impression that the state allows greater freedom (compared with before). But the message lying beneath is that it reserves the power to monitor activities online, and when necessary, to crack down on emerging trends and unwanted uses, just as it did with traditional media. As observed in recent years, the state has more frequently launched campaigns to purge the Internet of "undesirable content," and to uproot Internet uses that it identifies as "immoral" or "unsafe."

The other part of the state's proactive measure to maintain "the site for superior culture and civilization" involves the effort to create a "benign online environment" (*wangluo huanjing*). State policies draw on the "environment" metaphor to evoke the image of an ideal net that's "healthy and clean", so that pernicious ideas, likened to pollutants or diseases, cannot travel or even survive. The state would assume the

responsibility of protecting and safeguarding the online environment. To fulfill this role then it has to monitor and keep track of the environment regularly, which essentially rationalizes the state's surveillance of the Internet. The "environment" metaphor provides the convenient rationale that as an "environment," the net should be constantly cleaned, maintained and surveyed. An environment is also shared rather than simply devoted to private use. Therefore, to clean and check the environment is a necessity for the greater public good. Just as a constantly cleaned and maintained environment has less chance to breed diseases, in a "clean and healthy online environment," people's values and actions will naturally fall in line with the official doctrines and expectations, reducing the cost of political control and simultaneously, producing a sense of enhanced freedom and individual happiness. This measure then ties back to the "moral sanction and self-discipline" frame, both of which emphasize the minimal use of coercion. It conveys the political ideal that when the government creates the "benign" technological and cultural environment for people to live in, people will take care of their own speeches and acts online, and the use of coercion will be kept to the minimum.

The Internet as the "site for superior civilization and culture" characterizes the state's attitude toward the Internet as well as other forms of new emerging media. It is identified as one of the key objectives that the state-sponsored construction of communication networks should strive for. Therefore, I would argue that the state does not see the Internet purely as a technology. Rather, it is a political device for the state to deliver its messages, organize its resources, disseminate its pre-packaged contents, and assert its authority, at lower costs and with higher efficiency. To the central authorities,

the Internet is not so much a threat. Rather, it's an opportunity that should be unfolded, utilized and capitalized on

2.2.2 Informatization as the solution to China's domestic problems

In this frame, information and communication technology is described as a holistic and nearly omnipotent technological solution to the domestic problems that currently plague and challenge China. Specifically, it contributes to the construction of a "harmonious society," creates jobs, bridges urban/rural gaps, narrows inequality, and provides the momentum from technological innovation to "state system innovation." This part of state policy portrays information technology as a transformative force that will not only revamp China's old industrial structure, generate economic returns, but cure social ills and conflicts brought by two decades of economic reform.

Constructing a "harmonious society" was established as a political goal during the first years of the Hu Jintao administration. The slogan of constructing a harmonious society debuted in 2004, in the background of deepening economic reform and rising social unrests, and was gradually substantiated and enriched over the next several years. Through the slogan of "building a socialist harmonious society," the central government called on the public to preserve the order and harmony of the Chinese society, resorting to the traditional Confucian value of harmony in social relationships while adding "a socialist sense of honors and disgraces" (Saich, 2006). Connecting the political goal of "harmonious society" with the technological development of information technology expresses the belief of the government in using technology to solve social and political problems. Specifically, it elaborates on the technology's utility in supplying "alternative channels of communication between the leadership and the public," producing "greater

sensitivity to public opinion," creating "a sense of equality and justice," and

"coordinating various social and political forces" to ease China's transition into a

modernized, reformed society. The stress over "harmony" clearly reflects the state's

concern about the rising tension and conflicts in Chinese society after two decades of

economic reform. In search for remedies to social and political ailments, it has

increasingly pinned its hope on technology, and particularly, information and

communication technology. Its policy rhetoric is colored by an optimism of the infinitely

resourcefulness of technology, and an unsubstantiated belief that if advanced technology

will produce economic miracles, it will equally modify the imperfections in the political

and social systems, and result in a more stable, equitable society:

> "Information networks are ever-important channels for widening public
> participation, hearing the public voices, and communicating public opinion. To
> build a… socialist harmonious society, and to solve problems that Chinese people
> care most about, such as employment, social security, health care, education and
> production, requires an integrated approach of informatization, which needs to be
> pushed in both the economic and the social sectors." (Q&A between the
> Development and Reform Commission and the press on 11th Five-Year Plan for
> National Economy and Social Development, 2008)

Economic benefits brought by the information technology, such as creating jobs

and distributing information to even out regional development gaps, may contribute to

political stability. However, it is worth noting that state policies have identified and

highlighted the link between "technological innovation" and "system innovation." These

policies argued that technological innovation, as an efficient way to regulate the

relationship between men and objects, can also be extended to the regulation of

relationship between men. It maintained that the state should continue to use

technological innovations to drive "system innovations." Changes in the system,

therefore, should be called for or merited by the rational needs of technology. This

essentially reveals a trend in China's policy rhetoric to explain policy decisions and

changes through a technical perspective. For example, in the 1980s, the central

government used the necessity of harmonizing technical standards to justify the need for

assigning bureaucratic agencies to oversee the development of the broadcast media. In

the 1990s, when various ministries and institutions had completed their own

telecommunications lines, the state advanced its intervention strategy on the ground of

avoiding repetitive construction and consolidating technical standards. In the 2000s, with

the rapid emergence of new media such as IPTV, streaming video, mobile TV and social

media, the state decided to curb this fragmentation by launching the "National Chinese-

Language News Technical Standard." It required media organizations to adopt this

technical standard on the ground that it facilitated the sharing of information and

collaboration between different news agencies and organizations. In short, Chinese

communication policy makers seemed to have found a way to use technology to

"neutralize" decisions that would otherwise be interpreted as political or ideological.

To view technology as the solution to society's problems has a deep foundation in

the Marxist theory of technology. In the first volume of *Capital*, Marx argued that it was

technology that brought the division of labor and the relationship of subordination in

social organizations. Yet he continued to reason, paradoxically, that advancements in

industrial technology would be the liberating force that "sweeps away" the manufacturing

divisions of labor, eliminates the distinction between mental and manual labor, and frees

workers from the living appendage of machines (Marx, 1906; p. 503). This has led some

scholars to argue that Marx assigned technology the "central place and directive function

in human development," and that Marx himself did not see social processes in economic

terms, but in technological terms (Mumford, 1966). China's technology policy, long time influenced by Marxism and continuing to draw theoretical support from Marxist theory, reflected this thinking. The fact that information and communication technology was regarded as the omnipotent "solution to China's domestic problems" highlighted its rising strategic importance in China's overall policy scheme.

To treat information technology as the solution to China's current problems might be a naive and simplistic answer. But it speaks of the central government's wish to relieve the anxiety over the most pressing and problematic situations in China, such as inequality, inter-regional development gaps, and runaway corruption. As they are entrenched problems in Chinese society, information technology cannot and will not remove or eradicate these problems by itself. But naming it as the solution helps policy makers to form a narrative that refocuses public attention from assessing the severity of the problems to the actual processes of solving them. At a deeper level, it reflects a pattern of "instrumental thinking" among the Chinese leadership and policy makers, in which information technology has become the medium that connects reality with an imagined, idealized future.

2.2.3 Informatization as the common choice and challenge of tomorrow

Besides serving as a solution to China's domestic problems, information technology is elevated to the level of national priority as it became China's response to the competition from the outside world. Developing information technology has acquired a sense of urgency because it was a "common choice" for all nations. It is portrayed as an ongoing race in which the winning nation(s) will "hold the key to future success and dominance." It also represents a developmental path, assert the policies, whereby developing nations

can expect to "catch up" or "emulate" the developed nations. Therefore, as the policy

argues, information technology constitutes a "critical part of national competitiveness"

which China cannot afford to neglect. In other words, informatization is depicted as a

matter of "national interest" because it determines whether the country will develop the

critical ability to meet global competition and the challenges of tomorrow, as China's

third-generation leader Jiang Zemin stated:

> Information technology industry has become the competitive focus in global economy, politics, culture and society, and most importantly, in the areas of science and technology and military competition. …Major developed countries have developed their control over core technology and Internet information resources, have strengthened their influence over developing countries through their advantages in information technology and resources. …Many developing countries have adopted a follow-in or emulation strategy…The competition of national power resides in the mastery over information technology and its resources, and is reflected in the competition of national informatization capabilities (Jiang, 2008).

Framing technology as a matter of national interest has been a prominent theme in

China's policy narrative. A more relevant question to ask here, is why the post-Deng

leadership gave the highest priority to the development of information technology in

particular? This might be explained by the rise of neo-technonationalism, as theorized by

Suttmeier, Yao and Tan (2006) that the embrace of information technology is used to

unify voices and silence disagreements on the acceptance of globalization and

cooperation with foreign partners. Information technology, therefore, provides the ground

of politics and the "cultural scripts" for policy makers to act on and draw support from. In

this process, information technology also became "politicized." It was no longer

perceived simply as a pure technique or technological system, but an embodiment for a

rational and global way of thinking, a political device that helps the leadership to gather

support, and construct an authoritative voice on the nation's strategic priorities, and how

to accomplish them.

To the leadership and state planners after Deng, information technology presents a

new and manageable development strategy. This strategy can be used to redefine China's

progress toward modernization. Compared with the strategy of industrialization and

mechanization, raised and advanced by China's revolutionary leaders, information

technology, or "informatization" opens new dimensions of growth. In other words, while

China's plans to move toward industrialization and mechanization did not deliver the

expected results, and are widely believed to be only partially successful, informatization

is now identified as a new source of growth. Therefore, it's not surprising that since the

late 1990s, using information technology to transform China's industrial and economic

structures became the dominant voice on China's development strategy and policy

literature, as articulated by President Jiang Zemin in his speech at the 15th Party

Congress:

> In this plenary meeting (The Fifth Plenary Meeting of the 15th Party Congress),
> the Party put forward the issue of accelerating the informatization of national
> economy. This is a critical step for us to take. It facilitates the optimization of
> industrial structures, and helps us deliver the goals of industrialization and
> modernization (of our country). The global development trend has shown that
> informatization plays a significant role in fuelling economic and social
> development. Therefore, we should use informatization to drive industrialization,
> treat it as a matter of utmost importance, utilize our "backward" advantage and
> strive to realize the leapfrog-style of development.

In addition to securing consent and providing a development roadmap, framing

information technology as the "common choice" also helped the state to expedite the

actual construction of an information society. To create an information society, as

described by the policy plans, was to aggressively adopt international technology and

standards "at all costs" and it must be completed "at top speed." This marked a dramatic policy departure from China's technology policy from 1949 up to the early 1980s, when the state encouraged technology-driven development but technology itself must be scrutinized for its political and social meanings, particularly with respect to their pertinence to China's "specific situation". In the information policy rhetoric, however, the message was if something is good for the rest of the world, it must be good for China. In promoting the economic benefits of information technology, the state has essentially stripped the political and social significance of technology from public discussion. As a result, it enabled the state to move swiftly past debates about the specific merit of an idea, to the actual implementation of construction projects. It can be reasonably argued that the post-Deng leadership displayed an optimism that it can fully utilize the economic returns of information technology, while containing its effects beyond the economic circle. It can also be said, from this perspective, that the process of information technology construction has strengthened the state's authoritarianism – from identifying a development task, to quickly executing and realizing it.

A discussion of information technology as the challenge of tomorrow won't be complete without taking into consideration China's emphasis on developing indigenous technology and standards. The Chinese policy rhetoric has repeatedly emphasized the need for "independent innovation," while the import and adoption of foreign technology was expected to provide the impetus for China to develop its own technology. In a keynote speech given at a national science and technology conference in 2004, Premier Wen Jiabao compared "independent innovation" to "the backbone that supports the rise of a nation." He continued:

Science and technology are the decisive factors of a nation's competitiveness…We will import and learn from advanced technologies in the world. But we cannot buy real core technology. Only by developing strong scientific innovation ability, and by having our own intellectual property, can we increase our country's competitiveness, and enjoy a respectable international status and dignity. (Speech at the National Science and Technology Award Conference, 2004)

Specifically, the state outlined six areas where independent innovation is urgently needed. They are: information technology, biotechnology, energy, material and ocean sciences (Wen, 2003). Sitting on top of the list, information technology was made a priority area for "independent innovation" based on the reason that it is a technology field where "something new" continues to emerge. In the words of Lou Qinjian, deputy minister of the Ministry of Industry and Information Technology, information technology "conceives new and critical breakthroughs…New information products and service needs will continue to emerge, and products will be upgraded at an accelerating speed" (Lou, 2009). This continued "technical upgrading" and the promise of "something new", has given birth to a developmental model that is, at least rhetorically, sustainable. The promise of "something new" distinguishes information technology from other "traditional industrial technologies," and helps to present it as a "technology of the future." Competing in the area of information technology, therefore, is described as an "ongoing race" that could be won or lost at various developmental stages. Continued state input and investment are therefore merited because they enhance China's capacity in "independent innovation," and consequently, the chance to emerge as a leading country in the "informatization" race. In this sense, information technology construction is a process that reinforces itself: It creates the objective for China to catch up with, or

emulate the western developed countries. And if China falls anywhere short of this goal, it only serves as the basis for further investment and effort.

2.3 Discussion

2.3.1 Constructing a "socialist Internet": increased freedom vs. enhanced control

A baffling phenomenon that accompanies the rapid deployment of communication infrastructure and diffusion of information technology use, is the paradox of increased "perceived freedom" and an enhanced awareness of government control. To explain this paradox, one needs to turn attention to the state's active role in promoting information technology. The state's active promotion of the Internet technology, architecture of the network framework, and quickly materialized objectives in building China's communication infrastructure suggested that it was not the market forces, but central state planning and the sustained political efforts to create an information society that laid the groundwork of communication technological developments as we see in China today.

From the frame analysis above, it can be observed that since the initiation of construction of communication infrastructure in the mid-1980s, the Chinese state has taken a heavily instrumental approach to communication technologies. The state does not distinguish the different attributes and impacts of communication technology. Rather, it has adopted a unified view of varying communication technologies – treating them as similar instruments that facilitate the state to reach wide ranges of national audiences, strengthen the tie between the center and the peripheral areas, and provide additional communication channels for the distribution of officially approved contents.

In its active construction and promotion of the Internet, the Chinese central government may have underestimated the capacity, complexity and the liberating potential of the technology. But there is reason to believe that a simplified and authoritarian understanding of the Internet may have helped the state to strengthen control over this emerging and continuously changing technology. For one thing, to extend the existing regulatory regime of traditional media to the Internet allowed the state to apply rules and restrictions to the Internet even at the initial stage of construction, rather than leaving the Internet to develop on its own course. Through infrastructural and administrative setup, which were measures commonly used on traditional media such as radio and television, the state has thus far created a control mechanism that defied the liberating and democratizing expectations of outside observers and researchers. The state has also resorted to rhetoric justifications for its push on infrastructural construction and methods of control. By labelling the Internet as a "site of superior civilization and culture" and likening it to a "benign environment," the state has imposed its will and vision of what the Internet should be. The resulting utilization of moral restraint, self-discipline, and an environment-based approach to Internet regulation (as opposed to individual, localized control) has cultivated among Internet users a conformity and passivity that closely mirrored their use and consumption of traditional media.

2.3.2 The politics of "informatization"

When the state acted as the architect-in-chief of China's communication infrastructure, the rapid construction of information technology represents more than an economic transition fueled by China's modernization drive. It is a political construction in which the state embedded its values and goals into the design of an information

society, and into how a specific form of communication technology should be utilized

and managed. In this process of construction, technology is not purely technology. It has

been politicized to carry and embody the state's will and expectations. On the other hand,

politics is now mediated by technology, as seen in the rising prominence of technical

standardization and rationalization in China's policy discourse. The coming together of

technology and politics, led by the state's central planning, produces a "politics of

communication technology" that can be used to describe China's communication

infrastructure progress in the past twenty years. With this perspective in mind, it becomes

easier to understand China's move toward an information society, and more broadly, the

politics of "informatization."

Two major themes have been associated with information technology in the

policy discourse of construction and planning. One is that it provides the solution to

(nearly) all China's domestic problems. Information technology is regarded as the

technical route to a "harmonious society," one that is depicted to be "democratic and

ruled by law, just and equal, friendly and trustworthy, vigorous and orderly, and

harmonizing human and nature," a characterization of qualities which the current Chinese

society is found to be lacking in. It should be noted that since the onset of the economic

reform in the early 1980s, the leadership has long held debates on the nature of the

economic reforms and the necessity of political adjustments, and technology seemed to

be what they have agreed to settle on. Given its practical value of generating economic

growth, and the capacity to neutralize decision making, technology has become the

mediating language in China's policy rhetoric. It expresses values and goals packaged in

technical terms, and presents policy decisions not as a political choice, but a necessity that rises out of technical requirement and rational thinking.

In doing so I would argue that the Chinese state since the mid-1980s has made a clear break from the "technical politics" of the Mao era (1949-1976). The state in the Mao era has also attached importance to the construction of communication technology. But in the process of construction, it opened up the technical realm to the wide participation of the masses. It was Mao's belief that technological development should not be reserved to the educated elite, but should be open to the masses who participated in actual production activities. Through this way of thinking, the state had mobilized and organized people to participate in technical development activities, while imparting a feeling that they were the masters of their own lives. But people were not allowed to freely question the state-sanctioned policy goals. Public participation, in this sense, only served to develop and maintain commitment to policy decisions the state had already made (Lee, 1973). This was one of the key tactics employed by Mao to secure public support and at the same time, maintain the state's authority.

The state in the new economic construction era, however, has chosen to reverse this strategy. Technological development is no longer open to the participation of the public. It was restricted to the hands of a few well-educated intellectuals, scientists and specialized technicians. In recognizing the importance of scientific knowledge and technical expertise, the state has accepted the division between mental and manual labor which Mao had sought relentlessly to eliminate. And in closing the technical innovation and development field to the general public, it managed to "mystify" technology and elevate it to the level of an omnipotent solution. At the same time, the state has turned

increasingly to justify its decisions using technical terms and rationales, giving the public an impression that the decisions are based on an objective assessment of technical merits. Unlike in the Mao era, the soundness of policy decisions is no longer based on the leaders' personal charisma or political convictions, but a newly established faith in scientific principles and the value of rational decision making.

The other theme that runs through China's information technology policy is that it's an inevitable choice that will boost China's long-term competitiveness. Information technology is presented as an inevitable choice for China, because it is a "common choice" for other countries, especially the leading developed countries in the world. It also represents a developmental model that if not taken, will result in difficulties and challenges for China in the future.

As illustrated by the frame analysis, portraying information technology as the "common choice" and "challenge of tomorrow" allowed the state to gather political support for decisions promoting ICTs, and to move fast from the stage of making decisions to the stage of implementing them. Using this rhetoric, the state capitalized on the nationalist motivation of "making China catch up with the advanced industrial nations," a theme not too far away from the political motivation that had fuelled the Great Leap Forward from 1958 to 1960. Drawing on the similarities between the two campaigns, some scholars have named the state-initiated construction of communications infrastructure the "digital leap forward" (Hughes and Wacker, 2003). Although the Great Leap Forward has resulted in catastrophic impact on the national economy and technological development, the "digital leap forward" seemed to have followed a different route. During the digital leap forward, the state widely publicized the

"information superhighway" project in the U.S., kept track of the rapid development of information technology in the European Union, and encouraged circulation of theories which underline the strategic importance of information technology, such as Alvin Tofler's *The Third Wave*. In doing so, the Chinese state has created a competitive platform of "informatization" between China and western, industrialized countries. This move toward "informatization" popularizes the belief that although China has been lagging behind western countries in its industrialization process, it is not entirely impossible to catch up with advanced industrialized countries in areas of information technology development. Indeed, through heavy investment and intensive construction in information technology infrastructure, the state has demonstrated its effectiveness in closing the gap with advanced industrialized countries like the U.S., Japan and Germany, delivering a promise of development and progress which continues to fuel its authority and legitimacy.

2.4 Conclusion

After two decades of intensive construction of communication infrastructure and active deployment of information technology (esp. its hardware facilities), what is witnessed in Chinese history is perhaps one of the most influential and concentrated attempts, initiated and led by the state, to wire up and modernize the country. What makes this construction process worth examining was that it was not just one of the direct attempts by the state to upgrade the infrastructure of the country. Parallel to this physical construction process, the state has built up a cultural and ideological framework around communication technology, on which it continued to generate political utility and practical value. This construction process has also brought communication technology

and politics in China closely together. Communication technology has become politicized, because it is no longer an independent technical entity that operates on its own logic and rules, but a subject that can be shaped and engineered for political considerations. Politics, on the other hand, has come to incorporate more technical standardization and rationalization, rendering a political choice as the result of "scientific decision making" and seemingly, a technical necessity.

The actual construction of communication infrastructure in China illustrated how the material reality of China's communication network was created. However, the state did not stop at merely creating the material basis, or the hardware facilities of the communication network. The construction process is simultaneously one in which the state imparted a sense of what to do with technologies, and what to *think* about them. Not only did the state actively create the telephone trunk lines, the fiber optic grids, the satellite receivers and computer networks that made up the communication infrastructure, it also produced and popularized a rhetoric which defined and prescribed certain ways of using these techniques and facilities. This political rhetoric over communication technology became the driving force that directs and sustains China's construction activities. In other words, this political rhetoric gave shape to the architecture of communication networks that we see in China today.

With a strong state at the center of construction efforts, technology in China has been politicized to bear certain expectations. It has become apparent, through the construction policy literature, that although the state emphasized objectivism and "scientific development" under the new mantra of economic reform and opening-up, technology as presented and interpreted by the state is not neutral or value-free. It was

geared toward justifying the state's authority and facilitating control of the use and distribution of communication technology. The fact that the state sees the Internet just as "another channel" to reach audiences in remote areas and for the distribution of originally state-sanctioned content showed that the state does not regard the Internet as anything fundamentally different from traditional media such as television and radio. Therefore, easy access and use of the Internet should be promoted just as the traditional media, and control of information on the Net is seen as entirely possible, by extending the traditional regulatory scheme to the developing, new medium.

To what extent does the political rhetoric on information technology boost China's move toward an information society? As demonstrated in the frame analysis, information technology was framed both as a practical and symbolic answer to China's domestic problems, and as a strategic imperative to strengthen China's competitiveness on the international front. These frames helped the state to unify voices on information technology deployment, maintain its leadership in the construction campaign, and present the image of a science-driven, technology-powered, modernized government. In this process, information technology, besides its pragmatic value in generating economic growth, has derived a political utility. It is now the medium between political ideals, goals and social reality. While taking the initiative to construct the communication and information infrastructures, the state has proclaimed itself as the arbitrator of benefits and the mediator of conflicts brought by information technology, and in this process, strengthened its authority in interpreting the "successfulness" of China's modernization campaign.

Technology-initiated innovation has also become China's answer to pressure in political system reform. When the state resorts to technological means in solving political issues, it suggests that politics in China is now increasingly composed of and delivered through technology. Even though technical remedies will not stand up to be genuine solutions to problems in the political system, the expectations and hope carried by the rhetorical belief in technology provides a temporary relief and a negotiating space between the real and the ideal, between today's problem and tomorrow's remedy. There is no doubt that the Chinese state will continue to ride on the "rhetoric of information technology," and the actual construction process of communications infrastructure, though it may not be as massive and aggressive as before, cannot afford to stop. The state will continue to generate new causes for making additions and revisions to the current system, and mobilize construction efforts for upgrading and expanding the communications network. The continuing construction efforts in communications infrastructure and information technology will be the basis for China's renewed political legitimacy.

Chapter 3

Why and how have communication technologies become a central part of China's

policy initiatives?

In early 2000, the National Bureau of Statistics in China released the annual

report on the state of national economy, in which it stated that "electronics and

communications equipment manufacturing" was the fastest growing industry throughout

the 1990s. The "information industry," asserted the report, had "replaced textiles and

metallurgy as the mainstay of China's national economy" (Wu, 2002). According to Wu

Jichuan, head of the Ministry of Information Industry (MII), the electronics

manufacturing and software sector had been growing at an average annual rate of 20%

and 34%, respectively, from 1990 to 2000. This rapid change, however, cannot be

achieved without the active steering of government information policies. Since the 1980s,

China has noticeably increased the number and weight of communication and

information technology policies in its overall policy framework.

In state policies, communication and information technology were portrayed as

the "advanced force" that will transform China's traditional industries. It was also named

as a "source of progress" in modernizing China's wider social areas such as education,

public health, social mores and culture. But besides the obvious economic payoff, why

did communication and information technology rise in prominence in China's policy

discourse in the past twenty years? What political motivations and concerns could explain

this change of focus, and how does the state policy reflect these considerations? In this

chapter, I will use qualitative content analysis and national economics data to answer these questions.

3.1 China's ongoing legitimacy crisis: origin and development

Research on China's economic modernization has paid attention to the legitimacy crisis, perceived initially in the political transition period between 1976 and 1978. To many political science researchers, the legitimacy crisis was the main reason that propelled the state to launch economic restructuring measures. However, while much has been written about the relationship between legitimacy crisis and economic reform, little is known about the place of communication and information technology in China's reform policy, and how that might relate to or affect the relationship between information technology construction and the legitimacy crisis.

At the end of 1976, after Mao's death, a shared frustration and sobering up surfaced in Chinese society that the Party (and government) had failed to deliver the social and economic benefits it had promised to its people. The mass campaigns launched after 1956, particularly the Great Leap Forward and Cultural Revolution, exhausted China's natural and social resources, led China to digress from its previous economic construction focus and had consequently lost their popular support and momentum. At the end of the 1970s, China was a country with a per capita income that ranked among the twenty lowest countries in the world. The average annual income of a Chinese peasant was 135 yuan (15 USD) in 1978. The average annual income of an urban resident in 1978 was 362 yuan (41 USD). From 1974 to 1976, China had lost 100 billion yuan in industrial output, 28 million in steel output and 40 billion yuan in national revenue. As

the 1978 State Council Work Report admitted, overall, "the national economy was on the verge of breaking down" (State Council, 1978).

In social welfare, demands from the citizens for housing provision, public health, consumer goods and employment could no longer be met by promising them a utopian socialist society, supported by ideology and failing economic performances. Talk of the ideological matters was still prevalent in the state's policy rhetoric, particularly in the first few years following the passing of Zhou Enlai, Mao Zedong and the older generation of revolutionary leaders. The idea of "class struggle" continued to be a predominant theme in state rhetoric as the solution to China's national and social progress. However, people had become weary of the political indoctrination, and discontent with the current quality of life was widespread, as one of the demonstration slogans in the April 5th Movement, a campaign commemorating premier Zhou Enlai's death had said, "To mouth empty words about communism is not able to satisfy people's desires."

The succeeding Deng administration was acutely aware of this unfolding legitimacy crisis, acknowledging that if it was allowed to continue, it may cost the Communist Party the mandate to rule China. On the other hand, it realized that political repression didn't seem a sensible solution to containing the mass dissatisfaction with the party's class struggle policies. It became clear that without directly addressing the plaguing problems in the Chinese economy and declining quality of life, the state could hardly find its way out of the sociopolitical dilemma. With this in mind, in 1977, the state launched its "Four Modernization" campaign and advocated a shift of focus from political struggle to "the task of economic construction." In the opening words of the 1978 State Council Performance Report, economic construction was framed not purely as

an economic task, but a political imperative that will strengthen the force of the

"proletariats against the capitalists," and cement the "coalition of peasants and workers"

in the Chinese society:

> "To realize the four modernizations of socialism is not just an important economic project. It is, first and foremost, a political task….From the domestic point of view, only by realizing the four modernization at a high speed, can we consolidate the peasant-worker coalition on a new foundation, strengthen the force of proletariats against capitalists, socialism against capitalism, and improve the material and cultural life of the people….thereby reinforcing the proletariat dictatorship, and preventing the restoration of capitalism (State Council,1978)."

What, however, is the "new foundation" of peasant-worker coalition? The policy

did not elaborate on it. But it could be surmised from the context that it most likely refers

to the "new platform of economic construction." Although the rhetoric in state policy did

not shift radically from the ideological orientation of "proletariats against capitalists," or

"socialism against capitalism," as political stock phrases from the Mao era, it did manage

to introduce something new: the tie that brought together the two strongest and most

important groups in Chinese society was no longer "relentless class struggle" as

advocated by Mao, but a practical emphasis on economic performance and national

development. On this new foundation, the peasants and workers could confer, agree and

collaborate with each other. In other words, in the statement of the new administration,

communism or proletariat forces were no longer considered a sufficient "weapon" against

capitalism. They must be aided by economic and technological power, to transform China

into a modernized state.

In shifting the government work priority from class struggle to economic

construction, the Deng administration was careful not to directly challenge the

ideological guidelines from the Mao era, being aware that the new administration did not

have the charisma or revolutionary credentials of the Maoist generation. Policy makers in fact turned to the speeches and writings of Mao to find support for the economic reform initiative. For example, Mao's own political report to the Seventh National Congress in 1945 was selectively cited to provide theoretical support for the policy reversal. In one part of the report Mao asserted that: "In the final analysis, the impact upon the people, good or bad, big or small, of the policies and practice of all political parties in China depends on whether and how much they help to develop the Chinese people's productive forces, on whether they fetter the productive forces or liberate the productive forces" (Mao, 1945).

Associating productivity with socialist construction goals provided the political rationale to substitute ideological struggle with liberalizing reform measures. But these liberalizing reform measures must carry and fulfil their political expectations, that is, to generate legitimacy without compromising the party's ability to monopolize political power, and to ensure that all reforms are executed under party committee's organization and leadership. As remarked by Ding (1994), the state expected itself to "serve as the sole transmitter and interpreter of reform policies, the sole monitor of reform proceedings, and the authoritative judge of reform results." In this sense, China's modernization and opening up, though consisting primarily of economic measures, was a deliberate political move. The motivations and developments of the economic reform policies had to be thought of from the perspective of a political, rather than a purely economic-driven project. They were to be advanced in the interest of the party, who appointed itself as the representative of the interests of the people and the country.

In 1978, the first round of economic reforms took place in the agricultural sector. The measures centered on reforming the collective farming practice, introduced the household responsibility system, and allowed upward price adjustments to create an efficient market to stimulate productivity growth. The introduction of the household responsibility system yielded large benefits, as it was estimated that from 1978 to 1984, 78% of the increase in China's agricultural productivity could be attributed to the incentive effects of the new responsibility system (McMillan, Whalley and Zhu, 1989). The total agricultural output growth during 1978 to 1984 was 42.2% (Lin, 1992). The surge in peasants' production incentives has also fuelled the adoption of new technology. As premier Zhao Ziyang stated in the 1983 State Council Work Report, agriculture had "broken away from its previous stagnation, and realized unprecedented, high-speed growth."

However, the success in agricultural reform invited a political consequence. As the state rested its legitimacy on economic performance, reform in only one sector of the national economy was both limiting and unsatisfactory because it cannot be counted on to produce sustained economic growth. After agricultural output peaked in 1982 and 1984, the effects of the new incentives system and price increase started to wear off. From 1985, the overall annual growth rate of agricultural output declined from 7.5% to 4.2%, while increase in the production of grain and cotton came to a disappointing halt. For a state that had become increasingly dependent on economic performance to renew its political legitimacy, this meant the authorities must look elsewhere for continued sources of economic growth. From this point of view, it was not surprising that starting from 1985, a second round of reform was deployed in the industrial sector. Compared with the

rural reform, the second round of reform was much more complex and enduring. The main purpose of the industrial reform, as stated by the planning policy, was to "make enterprises relatively independent in manufacturing and marketing their products." It provided greater incentives to managers and workers at state-owned enterprises, and gave greater freedom of development to township-village enterprises. The township-village enterprises were then expected to help absorb the extra labor that appeared during the rural reform, and they later began to compete with state-owned enterprises for flexibility and efficiency (Goodhart and Xu, 1996). Complementary measures, such as the introduction of finance, technology, labor and real estate markets were also phased in since 1987. In general, the industrial reform continued into the 1990s and provided significant contribution to the national economy and productivity.

The industrial reform of the late 1980s had borne its economic fruits. From 1985 to 1991, national GDP had been growing at an average of 9%. Export increased 16%, with total trade growth three times higher than the world average (Lardy, 1992). But the extraordinary growth also paved the way for an overheated economy with uncurbed inflation rates. By the early 1990s, inflation was running in double-digit range and the economy was going through uncontrollable boom and bust cycles (Naughton, 1994). Industry faced declining profitability because of excess production capacity. Against the dropping growth rates, a third round of reform measures was initiated following the southern tour of Deng Xiaoping and his famous "reform should take bigger steps" speech. This included deepening of reform measures such as further privatization, direct foreign investment, and the steering toward an export-driven economy.

The second and third round of reforms, primarily aimed at decentralization and marketization, triggered some deep-seated tensions in Chinese politics. The appearance of these tensions suggested that the economic reforms were increasingly running against their political stumbling blocks. For example, the establishment of a labor market carries the implication that labor power has now become a commodity, which was difficult to reconcile with the socialist theory. Similarly, although a majority of the reform measures were intended to utilize the pricing and allocation efficiency of the market, the reform itself was directed by the political belief that the main body of the economy must remain under planned production and public ownership. These political constraints have come to limit and curtail the effectiveness of the reform. Ironically, without the continued proof of economic achievements and improved quality of life, it would be hard to justify the momentum for reform, and the future of the reform policies would seem uncertain. As the reform was nearing its political barriers, the potential "peaking off" of GDP and the perceived political cost of "slowing down" sent the leadership on a constant search for new sources of productivity and growth (Zheng, Bigsten and Hu, 2007). It was against this background that the leadership turned to technology, and information and communication technology in particular, as the renewed source of economic growth and prosperity.

3.2 The trajectory of information technology in policy rhetoric (1978-1993)

In the history of communist societies, technology has often been regarded as a primary source of economic growth. Technology offers a promise of new and sustained development, where developing economies can catch up with leading, developed economies through technology transfer and innovation. From the very beginning of the

Chinese economic reform, state policies have linked technology development closely

with economic productivity, as captured by the brief yet often-quoted words of Deng

Xiaoping that "science and technology are the primary force of productivity" (*kexue jishu*

shi diyi shengchanli). Deng's remark, which signals a significant turn in China's

technology policy, made its first appearance at the National Science and Technology

Convention held in March 1978. At the conference, Deng commented on the power of

technology in "emancipating the force of productivity," and specifically listed "computer

and semiconductor" as "the new and flourishing industries" (*xinxing gongye*).

> "…especially, the recent development of electronic computation, cybernetics and automation technology is rapidly improving the degree of automation in our production activities. With the same amount of labor and time, (these technologies) allow us to manufacture products in amounts that are dozens of, even hundreds of times as before. "

Then, in 1982, the State Council further elaborated on Deng's point, stating that

"economic prosperity must come from scientific and technological progress," and closely

linked economic productivity with technological change:

> "If we want to realize the four-fold growth target in agricultural and industrial output by the end of this century, we must unleash the power of science and technology. A four-fold growth is by no means a matter of quantity. If we stay on our current level of technological development, this goal will be an empty promise" (State Council, 1982).

With its emphasis on science and technology as the guidance for economic

construction, the state policy makers have been consistently raising the importance of

technology in its overall economic planning and construction scheme. A noticeable

change in the 1983 State Council Work Report, for example, was that the state removed

the sentence that "science and technology must cater to the needs of economic

development," and kept the statement that "economic prosperity must come from

scientific and technological progress." The textual change is significant because alterations in such an official report often mark a meaningful turn in policy. It could be reasonably argued that the sentence was removed because it posed potential inconsistency with the changing political status of science and technology. On the rhetorical level, to say the least, this change suggested that the state was elevating science and technology from the level of "technical instruments" to the "guiding principle" of the economic construction and modernization activities. Because science and technology are no longer "mere instruments," the statement that "(they) must cater to the needs of economic development" would appear contradictory to the heightened status of technology as a "guiding principle".

From a political point of view, it is understandable that Deng and his associates were trying to use science and technology to create support and momentum for the "thought liberation" campaign. After 30 years of thought control and repeated mass campaigning, the ideological stricture and narrow frame of thinking had made it difficult for people to think "outside" the current mechanism of control, denying them knowledge and skills to solve unpredicted problems, and they had become impediments to the implementation of reform measures. Facing these resistances and barriers, Deng decided to use science and technology to encourage people to open up their minds. The "thought liberation" campaign of "seeking truth through practice" thus can be viewed as an extension of the scientific spirit in the lab to the field of social and economic experimentation.

Consistent with this change in status, in 1983, the state declared that it was gathering experts and professional consultants to draw long-term plans on China's

scientific development. In addition, it announced plans to formulate technology policy and equipment policy standards for key industries such as agriculture, energy, transport, computer, machinery, raw materials and consumer goods. This, as the policy reasoned, would provide "sound technological basis for the future development of society and economy."

Following the state's active promotion of science and technology, starting from 1984, China went through a period of "technological renaissance." This period was marked by the state's constructed rhetoric on the arrival of a "new round of industrial revolution, led by developed countries such as U.S. and Britain, in their transformation from an industrial society into an information society." In September 1984, Jiang Zemin, who was then the Minister of the Electronics Industry, and later the Party General Secretary and President of China, published an essay on *Red Flag*, the official journal of the Central Committee of the Chinese Communist Party. In this article, Jiang argued that the new technological revolution was both "an opportunity and a challenge." Jiang, who had just completed an extensive visit and survey of the electronics industries in U.S. and Canada, said he was impressed with the "speed and force that drives the worldwide information revolution." He argued that if China did not join the race for an electronics and information technology power, "the gap between China and the developed countries would only become wider." He stressed that a society-wide adoption of electronic computers was a prerequisite for the creation of a "modern information system," and argued that, for the first time, to unleash the productive power of electronics technology, it must be made a national development priority:

> "There have been debates and disagreements home and abroad about the new technological revolution. But it can be generally agreed that electronics

technology, particularly microelectronics and computer technology, occupies a central position in this revolution. If machines can be regarded as an extension and enhancement of the human hands, the development of electronic computation, powered by microelectronics technology… is an extension of the human brain… If we want to strengthen the weak links in our industrial construction, the key lies with technological progress. And if (we want to) build our traditional industries on the foundation of advanced technology, the core of this technological foundation should be modern electronics science and technology."

It would not be surprising for Jiang, who was head of the Electronics Industry Ministry, and advocate of the interests of electronics manufacturing enterprises, to speak on the importance of electronics technology. But the fact that Jiang's essay was selected for publication on the Party's leading journal signals a larger, state-driven intent to move in the direction of creating an "information society." Shortly following the publication of Jiang's essay, the State Council issued a circular on speeding up the development of "certain new and flourishing industries" (*xinxing gongye*). The circular pointed out that in the modern industrial structure, information industry is a "core factor that's most important, active and influential," and therefore it "must be put on a critically important position in the overall development scheme of national economy." To facilitate the implementation of this decision, the State Council created the "Electronics Industry Development Leadership Group" in September 1984 "to strengthen the state's centralized control of the electronics and information industries." The leadership group was based on the prototype of the "Computer and Large-Scale Integrated Circuit Leadership Group", an earlier task force created by the State Council in 1982. This institutional and name change indicated that in the process of elevating the importance of the electronics industry, the state was also broadening its view of the electronics technology, from computer and integrated circuit, as two leading technical fields of information technology research, to a wide range of techniques, enterprises and organizations involved in the

research, production and marketing of electronics components. It had in effect

strengthened the state's leadership over the electronics industry, and expanded its role in

planning and building the information infrastructure.

Throughout the 1980s, the status of electronics and information technology

continued to rise in China's policy discourse. By 1989, it was listed as one of the key

strategic industries, together with steel, energy, transport and raw materials, which the

state policies referred to as "the pillar industries" (The Eighth Five-Year Plan, 1989).

This was despite the fact that the electronics industry only contributed 3.5% to the gross

national industrial output in 1989, and 2% to employment. The relative insignificant

share of electronics industry in the national economy didn't stop the state from presenting

it as a "pioneering and leading force" in the new technological revolution. In May 1989,

when reviewing the development of information industries worldwide, Jiang Zemin

painted an optimistic picture on the development of electronics technology, which he

referred to as a "multiplier" (*beizengqi*) of the national economy:

> "In 1988, the worldwide electronics and information industry output was 587.5
> billion USD. It is estimated that by the mid 1990s, the gross output (of electronics
> and information industry) worldwide will reach 1 trillion. It will take over
> traditional industries as one of the largest industrial sectors…This is ushering the
> world into 'an era of information economy'. As the developed countries march
> into the post-industrial society, the level of electronics technology has become the
> most prominent sign of productivity."

According to Jiang, the "multiplying effect" of electronics technology takes place

when it is combined with "traditional" technologies. In other words, electronics

technology was one of the modern, sophisticated forces that can be used to modernize the

traditional industries, improving their efficiency and productivity. Consequently, the state

actively pushed for integrating electronics technology into every sector of the national

economy. "Electronics technology," argued the State Council in a directive report issued in March 1990, "plays an extraordinarily important role in the modernization construction. It must be adequately attended to, and should be applied, stepwise and consistently, to every sector of the national economy" (State Council, 1990). It could be observed that at this point, the role of electronics technology in China's economic planning policy has changed from being instrumental to being transformative: Electronics technology is a technological and industrial development field to be continuously researched, designed and macro-managed by the state. But at the same time, it is also an autonomous, determinist power that constitutes the very basis and changing dynamics of China's industrial transformation. Because of the "multiplying" and "transformative" effects electronics technology has on the national economy, it seems only logical to make it the centerpiece in China's economic planning policy.

However, it should be noted that despite the state's rhetorical emphasis on the "transformative" power of electronics technology, in reality, from the late 1980s to the early 1990s, the development of China's electronics industry in China has a clear manufacturing focus. The focus was partially reflected in the choice of the term "electronics technology" over "information technology". Compared with "information technology," the term "electronics technology" was used to characterize the infrastructural side of communication networks – the semi-conductors, television sets, radio-cassette recorders, computer chips, telephone chips and other electronic components that enabled the transmission of information and communication signals – rather than the information carried by these facilities. This manufacturing focus can be viewed in connection with the state's preference of creating a manufacturing-driven

economy, and the emergence of China as an export powerhouse. According to the State Planning Commission, the manufacturing of electronic components was "a leading source of economic growth" and would likely become an "emerging and unfolding growth point for the national economy." The manufacturing focus is even more clearly reflected in the implementation of China's electronics industrial policies. To quote the speech of a central politburo member at a national policy meeting, to develop China's information economy was "to excel in the production of electronic components" (Lv, 2010). In this sense, despite the rhetorical emphasis on the advanced and sophisticated nature of electronics technology, it was not treated differently than other "traditional" manufacturing industries, and its elevated status in state policy was inevitably, a human-made one.

From 1984 to 1993, the active push for integrating electronics technology into every sector of the national economy laid the foundation for the rollout of the nationwide "informatization" campaign. The rhetorical construction of an "advanced," "post-industrial" and "transformative" technology helped clear the obstacles and resistance in the adoption and promotion of new technology. This shift of political consensus and pubic opinion seemed even more remarkable, considering that only a few years before, the "informatization" idea was still a novelty and a subject up to debate. But by 1992, the Center had firmly established a consensus that information technology should be made a national developmental priority, and that informatization must be used to guide and expedite China's industrialization process. Starting from 1993, with the launch of a series of national information projects, and with the political transition from the second to third generation leadership, "informatization-fuelled industrialization," or "mutual

reinforcement of industrialization and informatization," emerged as the framing guideline (as well as ideological successor) to Deng's four modernizations campaign. As Jiang aptly put it, "None of the four modernizations would be possible without informatization."

From 1978 to 1993, the early stage of the economic reform and opening up marked the changing status of science and technology, and especially, information technology in Chinese politics. Technology has travelled a trajectory from being "a leading source of productivity," to being "the guiding principle" of planning and organizing the economic construction activities, and ultimately, to being a transformative power that will speed up China's industrialization process. The quick rise of information technology in China's science and development policy is not only indicative of the structural and environmental changes that the Chinese society was going through. Tracing the developmental path of information technology in China's policy rhetoric also helps one to identify the circumstances and conditions that might have given rise or contributed to this phenomenon. In the following section, I would argue that three conditions were linked with the rising importance of information technology.

3.3 Discussion: Explaining the rise of information technology in economic reform policy

Three reasons can be identified as to why information technology was made a developmental priority and a centerpiece of China's economic reform policy. First, information technology rose to the forefront of national politics at a time when the tension between economic and political reform was intensified. In the middle of the economic reform and opening up, the Chinese state was facing the paradoxical task of

accelerating economic liberalization and enhancing the state's capacity to govern and control. Perceived as a "neutral" platform, technology provided the necessary negotiating space between political interests and the economic liberalization progress.

When assessing the legitimacy crisis faced by the Chinese reformers, it is worth noting that the crisis has two contradictory aspects: First, the state faces the constant challenge and pressure of maintaining sustained economic growth and of continuously improving people's living standard. Failing to deliver this goal would lead to increased social discontent and conflict between the state and society. Second, the legitimacy of the state can also be contested if it achieves economic progress at the expense of fundamental socialist principles, such as equality, social welfare and justice. Although it would be ideal to meet the two goals at the same time, practical experiences from the reform and opening up initiatives have illustrated that these two goals are rarely compatible in reality.

The development of information technology in Chinese economic policy has its early roots in the 1980s, in the state's preferential policy on the development of the electronics industry. But information technology did not come into full bloom in China's economic policy until the early 1990s. The timing is relevant because it coincided with a politically sensitive time in the reform process. To the Chinese leadership, the early 90s was a time of reformatory dilemma and conflict. On the one hand, the industrial reforms initiated by Deng Xiaoping had achieved some spectacular results in stimulating economic growth. But because of the structural constraints and the limited scope of the reform, the effects of the industrial measures in liberalizing the Chinese economy were nearing a developmental bottleneck. On the other hand, the political left inside the

Communist Party contested that China had gone "too far" in its industrialization process, criticized the "ideological digression" of the state from orthodox communist values, and used them as political grounds for launching a propaganda battle against the implementation of reform measures. It would be fair to say that in the early 90s, the reform initiatives had come head-to-head with the resistance of political conservatism in the Party, an ideological as well as institutional impediment that seemed only could be removed by political reforms.

But to Deng, any move in the direction of political reform would be a challenge to the Party's authoritarian rule, and would run counter to the original purpose of the reform: to strengthen the Party's status as the sole leader and organizer of China's movement toward industrialization and modernization. Although Deng was willing to explore the liberalizing measures in order to energize the economy, he was far from being open to any ideas of "political liberalization." In fact, Deng himself was responsible for launching three national campaigns against "spiritual pollution" and "bourgeois liberalization" in the Party's thought work and public communication, respectively in 1981, 1983-1984, and 1986-1987, in order to eliminate any "liberating" impact of the reform measures beyond the economic circle. Because any idea of political liberalization was ruled out, Deng and his associates would have to look for an alternative route to political reform – a mechanism that could ease the tension inside the party, and help reconcile the two incompatible goals underlining China's legitimacy crisis.

The introduction and integration of technology into Chinese political realm provided such an alternative route. This was because technology, compared with political reforms, is a much safer area for policy experimentation and adjustments. Political

considerations, when reframed and repackaged in technological terms, would appear more neutral and rational, and stay closer to the principle of "scientific decision-making" that had long been advocated by state reformers. This was by no means to suggest that introducing technology to political conversations would eliminate debates. But packaging a proposition in technological terms would enhance the reformers' ability to mobilize support, and substitute debate over the "political merit" of a decision with the debate over the "technological merit." This would eventually leave the decision to a few technological experts, or technocrats, who have mastered the technical know-how and the language to define the policy issue, and effectively shut out political opposition, if they could not competently frame their dissent in technological terms.

Another utility of technology is that it provides the platform where political utopianism and economic pragmatism meet. Technology is often intrinsically associated with certain values, such as information technology is perceived as egalitarian and liberating. Therefore, to promote a certain technology also means to align oneself with a set of value statements. The choice of such a technology would not simply be economic, but also political. The construction of a nationwide communications network not only provides the material basis for increasing economic coordination at the national level, it also allows the state to associate the construction process with the ideals of creating a transparent, connected and egalitarian society. In this sense, raising the importance of information technology would be a politically sensible move, because it offers the promise of resolving the two incompatible goals inherent in China's legitimacy crisis: generating economic wealth and at the same time, realizing socialist values.

Second, as economic performance has replaced class struggle as the basis of political legitimacy, the state has been on a constant search for a source of sustained economic growth. Information and communication technology, with its rapid upgrading speed and comparatively low demand on energy, fits well with the expectation for a source of renewable growth and sustained economic development.

The rise of information and communication technology in China's developmental policy goes hand in hand with the acknowledgement that ICT is a significant source of economic growth. In the late 1980s, the Chinese leadership and policy makers began to note the connection between ICT and economic growth, and used empirical findings from the West to justify the state's preferential development of ICT. One of the earliest examples was an International Telecommunications Union study conducted by Andrew Hardy (1981), who found that 1% increase in the number of telephones per 100 persons could contribute to as much as a 3% increase in gross domestic product. The study was cited by Chen Yunqian, director of the Economic and Technological Development Research Center of the MPT, as the rationale for making ICT the centerpiece of China's developmental policy (Chen, 1993).

Besides being a source of economic growth, ICT is also noted as conducive to extending the state's administrative capacity in planning and overseeing economic construction activities. An effective information infrastructural system, for example, would help control inventory, allocate resources, manage the finances of public service systems such as highways, airlines, taxis, office automation, e-banking, health care and would be integral to the establishment of public security information databases. These have all been identified as the reasons for introducing new ICT programs. The

deployment of a centrally planned and constructed information infrastructure, therefore, was expected to strengthen the state's ability to oversee economic growth and local compliance, allowing it to further its decentralization and economic liberalization measures at the local level.

In addition, information technology was identified as a technology low in energy demand and pollution, which made it a distinct choice for China, as argued by Jiang Zemin in an editorial on the "strategic value of information technology":

> "Materials, energy and information are the three main resources for modern social construction. The development of information technology has highlighted the importance of informational resources. We are a nation of a large population base, an inadequate supply of energy, and an imbalanced mode of development. If we can apply information technology to every industrial sector and field, we will find a balanced, coordinated and sustainable road of development that's particularly suitable for China."

Third, information and communication technology was constructed as an indicator of progress and a symbol of modernity. From this perspective, acquiring the latest technology is synonymous with being modern. The penetration rates of communication media and information facilities are presented as a quantitative indicator for the measurement of progress. The underlying premise is that information and communication technologies can be interpreted and utilized as a panacea to China's pre-industrial backwardness and to the problems that had been generated by the rapid and ongoing social transformations.

Although the rhetorical construction of information technology as a "symbol of modernity" underlies the pursuit of information technology policy in most societies, setting the goals of informatization and technology transfer embodies an unprecedented openness to integrate China into the world economy, a turning point in the state's attitude

toward economic openness and foreign connection, which is in itself "a sign of progress". If China's long-time isolation from the world economy has led to its "falling behind" in technological and economic achievement, bringing China back in contact with the world represents the reforming state's will to place China "at the same starting point" with western countries in the area of information technology development. As pointed out by Edgerton (2007), being in connection with the world is an important element of modernity, not to escape from a globalized cosmopolitan world, but to participate in it while retaining one's dignity, and indeed create one's capacity to participate. China's developmental policy on information technology is a symbolic move by the state reformers to demonstrate their willingness to open up China, to integrate the country into the "new" world economy, and to demonstrate their readiness and confidence to forge China's capacity in meeting the challenges and competition from the West.

3.4 Conclusion

Interestingly, as Lucian Pye (1990) pointed out that "information technology revolution" has spawned and hastened the legitimacy crisis in authoritarian regimes, in China, it was the solution found to remedy the legitimacy crisis. The development and deployment of information technology in China did not, as many would expect, bring the confrontation between the state and society, or the erosion of political authority. On the contrary, informatization has become the state's formulated strategy and response to meet the ongoing challenge of economic growth, and helped take off the pressure of adopting immediate political reform measures. The utility of information technology – generating economic growth and easing political tensions – helps explain the rising importance of information technology in China's policy scheme. As Castells (1998, p.292) had pointed

out, economic development pursued together with technological modernization by authoritarian regimes was both an "indispensable tool for national power", and a new legitimacy principle.

Although the state had been actively involved in every stage of planning and construction for information technology, it is equally important to note that the rise of information technology (and later informatization) as a critical and central component of China's economic policy is not by itself a "planned" process. Rather, the ascendancy of information technology in Chinese economic policy follows the exact pattern that was described of the reform and opening up process, which was to "make one step, and see where the next step is" (*zouyibu, kanyibu*). The economic circumstances and political endowments of Chinese society had worked together to produce such incremental, but altogether decisive changes. The constant need for economic growth, the political opposition inside the party, and the unfolding "information technology revolution" worldwide have all contributed to the decision to make information technology a national development priority. But a widely perceived legitimacy crisis among the Chinese leadership and policy makers has inevitably hastened the political choice and the steps of adopting informatization as China's new developmental strategy.

Chapter 4

**From bureaucratic to systemic (and technological) control: The changing exercise of
control in communication technology development**

Much attention has been paid to the Chinese state's strict control over the content
carried by communication technologies, with a strong focus on radio, television, and the
Internet. However, there hasn't been adequate or thorough research on the institutional
reform of regulatory agencies that were tasked with prescribing and governing the use of
communication technologies in China. In this chapter, I would argue that contrary to the
observations of decentralization and liberalization with China's industrial structures and
economy, communication technologies in China have been regulated with an increasingly
intense and converging focus. It should be conceded that at various stages of the reform
the state issued measures that seemed to have relaxed its control on the deployment and
use of communication technology. But the long-term intensification and tightening of
regulatory strength were by no means an accidental or illusory outcome. This policy
change is reflective of the state and top leadership's understanding of communication
technology, and the imposition of political will on how a technology should be harnessed,
conceptualized and controlled.

In this chapter, I will map and analyze the reform process of regulatory agencies
that governed communication technology in China. Such an analysis helps one
understand how the political meanings of communication technologies evolved over
time. This understanding can further be read and interpreted in conjunction with what the
state policy says about these institutional restructuring measures at different stages of the

reform. This is, however, not to interpret state policies and rhetoric at face value. Instead, when the state rhetoric is viewed in conjunction, and in a comparative light with the actual developments in regulatory reforms, a more accurate reading of the political thinking behind the institutional moves is likely to emerge. Following this analysis, I will discuss the means and techniques that have thus far been used to shape China's communication technologies, as well as the extent to which these institutional moves, means and techniques may affect the nature and exercise of control.

4.1 Overall structure of China's communication regulation system

One of the straightforward actions taken by the state to assert power is the creation of regulatory regimes – the institutions, rules, standards and methods of regulation. In China, the creation, operation and rationalization of regulatory regimes for communication technologies is a direct assertion of the state's absolute and unquestionable power over thought work, social order, and political stability. At the beginning of the regulatory setup, the Chinese state followed a clear-cut approach. Communication technology was regulated in two major areas: the content it carries, and its technical features. Two ministry-level agencies, the General Administration of Press and Publication (GAPP), and the State Administration of Radio, Film and Television (SARFT), were respectively responsible for regulating the content carried by print, and broadcast technologies. The Ministry of Posts and Telecommunications (MPT), on the other hand, was designated as the agency responsible for the design, construction and maintenance of communication networks. All three agencies were led by the State Council, whereas the first two, the GAPP and SARFT, were also directed by the Central

Department of Propaganda (CDP), a censorial organ directly under the leadership of the Central Committee of the Chinese Communist Party.

From the basic structure of institutional setup for the communications regulatory system in China, it can be observed that the state attached most attention to the content carried by communication technologies, while leaving the technical aspects to experts and technicians. This heavy regulatory emphasis on media content has led to a divide in China's communications system: communication technologies that are most prominent for their capacity and influence in disseminating information, such as radio, television, films and newspapers, were the primary focus of state monitoring and supervision. Other communication technologies, such as the telephone, mobile phone, satellite and the Internet, since they were less "visible" in terms of mass influence, were categorized as carrier technologies and received comparatively less regulatory attention.

However, with the emergence of digital technologies and media convergence, the state had increasingly found its divisive approach in regulating the content and technical aspects of communication technology an inefficient and artificial barrier. It prevented the agencies that are responsible for overseeing content on the media from taking into account the technical differences in the reach and influence of various communication technologies. These technical differences have made the maintenance of a universal criterion of communication contents across different technological platforms challenging, if not completely impossible. For example, contents that were not allowed on television could easily appear on the Internet, escape immediate government detection, and get spread within a matter of seconds. Without understanding the technical features of the Internet, it is virtually impossible for the content regulators to enforce content criteria and

rules. In other cases, agencies responsible for the technical aspects of the communication technologies could influence media content, and inevitably, tread on the "turf" of content regulators. This has given rise to inter-agency disputes, in actual policy implementation, over the classification of "content" and "technology." More recently, the convergence between the Internet and traditional communication technologies like radio and television also disrupted the previous clear-cut regulatory order of "tiao" and "kuai," where each technology and media outlet could easily be matched with its supervising agency and regulatory authority. The original setup of communication technology regulatory system seemed increasingly ineffective and unwieldy, and the state had found itself insufficiently organized to stop and control the dissemination of politically sensitive information. As a result, starting from the late 1980s, the regulatory regimes of communication technologies went through significant steps of restructuring and reorganization, with an aim to strengthen its administrative capacity and regulatory effectiveness.

4.2 Institutional reform of telecommunications regulators

The institutional reform of telecommunication regulatory agencies started in 1988, when the State Council issued a decree that separated MPT's oversight function from its business operations. The policy making and regulation departments in the MPT, such as Telecommunications Administration, Policy and Regulation, Science and Technology, and Finance, were separated from the Directorate General of Telecommunications (DGT), which was at the time the operator of China's telecommunications network. This measure was part of a larger governmental campaign called "the separation of administration and enterprise" (*zheng qi fen kai*). The Directorate General of Telecommunications, supervising 29 province-level Posts and

Telecommunications Administrations (PTAs), was corporatized in 1995, together with its branch offices and was renamed "China Telecom," the national monopoly operator of telecommunications services. However, this separation of administrative and business functions remained superficial and internal, as they continued to operate under the same roof of the MPT. The MPT still patronized the lucrative DGT and its descendant, China Telecom, by making policies favorable to its monopoly, and posing difficulties for potential competitors to enter the telecommunications market.

As China's telecommunications regulator, the MPT was responsible for the design, construction, and operation of communications networks. However, its power to shape and influence the communications network was limited, because under the state planning system, the manufacturing and supply of telecommunications equipment was assigned to another agency, the Ministry of Electronic Industry (MEI). This has led to tension and inter-agency rivalry between the two ministries, as they both wanted to capitalize on the rapid growth of the information industry. A direct consequence of this rivalry was that the MPT consistently refused to source its construction equipment from the MEI. The MEI, on the other hand, had sought to establish alternative telecom service providers to compete with the MPT. In 1994, with the establishment of Liantong and Jitong, two alternative communications service providers backed by the MEI, the competition between the MEI and the MPT became intensified. Meanwhile, the initiation of the Golden Bridge project, proposed and implemented by the MEI to link the State Council with the economic administrations throughout 500 cities in China, also constituted a challenge to the MPT's exclusive control of communications networks.

As a result of this mounting tension and conflict, in March 1998, the State Council sought to neutralize this tension by establishing a new ministry: The Ministry of Information Industry (MII). Both the MPT and the MEI were merged into the new ministry. The MII also took over the administrative duties of the National Radio Regulation Commission, the State Council Informatization Leadership Group, the network planning departments of the former Ministry of Radio, Film and Television, and of the National Defense Science, Technology and Industry Commission (for satellite orbit coordination). The postal services previously run by the MPT was "downgraded" to a lower-level agency: the State Administration of Posts, and became an affiliation of the MII. As a new administrative organ, the MII was responsible for making policies that direct the development of China's telecommunications industry, and producing guidelines overseeing all online communications activities (State Council, 1998).

In the directive that announced the establishment of the MII, the State Council made the following description of the agency:

> The Ministry of Information Industry is the supervisory agency of the electronic product manufacturing, telecommunications and software industries. It is an organizational component of the State Council, responsible for pushing forward the informatization of national economy and social services.

Specifically, the MII was responsible for:

Table 5: Administrative responsibilities of the Ministry of Information Industry

Article number	Descriptions of administrative responsibilities
Article 1	Researching and formulating national development strategies of the information industry.

Article 5	Allocating public communication resources including radio frequencies, satellite orbits, Internet domain names and IP addresses. Licensing radio stations, monitoring and tracking airwave use, and maintaining the order of airwave communications.
Article 6	Overseeing the telecommunications and information services market; enforcing licensing standards, ensuring service quality, equal competition and universal service. Issuing interconnectivity guidelines for competing network operators, and determining telecommunications service tariffs.
Article 8	Organizing, planning, constructing and managing the exclusive communications networks used by the Party and the state, ensuring national communications and information security.
Article 13	Directing the finances of major post and telecommunications operators. Coordinating the relationship between posts and telecommunications businesses, and providing subsidies to universal services providers.

Source: On the responsibilities, organization and personnel of the Ministry of Information Industry (Directive No.100, 1998), the Office of the State Council, July 1, 1998.

Although it was designated primarily as a "technical" agency, the job description of the MII suggested that it could significantly influence the business operation of service providers, and the content distributed on China's telecommunications network. This is because, first, the MII was responsible for "architecting" the Internet in China. This meant that it could easily block or filter information that was deemed harmful to national security and social order. Second, with the authority to review and grant licenses to Internet service providers, it has the *de facto* power to influence what type of content the service providers can put on their webpage. Third, the MII could determine the Internet

leasing fee and telecom service tariffs in China, which directly controlled the lifeline of telecom service providers. In 2000, the MII successfully used this techno-economic leverage to wipe out and reorganize 90% of the independent service providers in China. This case will be discussed in greater detail in the second part of this chapter. Fourth, the MII could influence the operation of large telecom companies by controlling its personnel and staffing. The first CEO of China Unicom, for example, was a deputy minister who stepped down from the former MPT. In 2003, the vice minister of the MII, Zhang Chunjiang, was appointed the president of China Netcom, one of the four major telecommunications firms in China, and Zhou Deqiang, another vice minister of the MII, was appointed as the General Manager of China Telecom.

The MII was reportedly created as an independent regulator of the telecommunications industry. It was expected to break the monopoly long held by China Telecom, a spin-off enterprise that previously belonged to the MPT. The existence of the MII was based on the rationale that open competition in China's telecom market would stimulate technological innovation, and would increase consumer choices and benefits. However, the consolidation of the MPT and MEI has in effect eliminated potential competition between different interest groups and market players, and resulted in an even larger agency with higher, concentrated power. The newly formed MII had an expanded administrative power spanning across three main areas: posts, telecommunications and electronics production. It still owned ChinaNET, the backbone network that accounted for 70% of the nation's total international connection capacity, and 80% of the Internet access market, a near monopoly of China's information and data transmission pipelines (Harwit and Clark, 2001).

Besides the concentration of regulatory power in the consolidated MII, the power to make key decisions concerning China's telecommunications industry was reserved for an even smaller group of decisions makers: the State Council Informatization Office (SCIO). The State Council Informatization Office was created in August 2001, headed by the state's top leadership including Premier Zhu Rongji, succeeding Party Secretary Hu Jintao, Education Minister Li Lanqing, and Central Propaganda Minister Ding Guangen. Originally set up as a consultative body, the SCIO acted as an executive committee overseeing China's information technology development. Although the MII has the authority to handle the day-to-day technical affairs of the communications network, in matters of strategic importance, it defers its decisions to the SCIO. In other words, the overarching strategies of information technology development were made at the level of the State Council, while the MII only acted as the agency that ensures and oversees their implementation.

The creation of the MII as *the* "comprehensive" regulatory agency of China's communication technologies speaks for the state's effort to consolidate regulatory power that was previously scattered in different, uncoordinated departments. Contrary to the overall trend of decentralization and privatization in other economic sectors, the state's consolidated control of the telecommunications industry suggested the strategic interests it takes in regulating communication technologies. Although it was commonly theorized that emerging new media technologies, and China's market liberalization have contributed to the fragmentation of power, it could equally be argued that this fragmentation may have triggered the state's response to consolidate and recentralize its regulatory structure. According to a *Ming Pao* article in December 1993, "top CPC

leaders had reached a consensus of opinion (at Beidaihe in the summer), and agreed that while building the market economic structure, they must never relax efforts in propaganda work, but new management methods must be adopted to tighten control" (Fang, 1994). In May 2008, the recentralization became even more obvious when the state created an even bigger, "super-ministry" governing communication technologies, and reduced the number of competing telecom service providers in the market from six to three.

In the 2008 round of governmental institutional restructuring, the Ministry of Information Industry, after serving ten years as China's central regulator of telecommunications affairs, was dissolved and merged into a new agency: the Ministry of Industry and Information Technology (MIIT). Besides the former MII, the MIIT also took over the State Council Informatization Office (SCIO), the industrial and informatization arm of the State Development and Reform Commission, and the National Defense Science and Technology Commission. The postal service department of the former MII, the National Administration of Posts, was separated from the new MIIT and became a subordinate unit of the Ministry of Transport.

As a further consolidated agency, the administrative responsibilities of the MIIT include:

Table 6: Administrative responsibilities of the Ministry of Industry and Information Technology

Article number	Descriptions of administrative responsibilities
Article 1	Formulate new industrialization development strategies and policies.

	Coordinate and solve important problems in the new industrialization process. Draft, organize and implement the informatization plans of industry and telecommunications. Facilitate the merge between informatization and industrialization.
Article 5	Formulate plans, strategies and standards of hi-tech industries in areas of biomedicine, new materials, aeronautics and aviation, and information industry. Direct technology innovation and progress. Use advanced technologies to transform traditional industries.
Article 10	Coordinate work in national informatization progress. Make policies and recommendations for key issues in the informatization construction. Facilitate the merge of telecommunications, broadcast and computer networks. Direct the development of e-government, and push for cross-industrial, cross-departmental interconnections for exploiting and sharing important information resources.
Article 13	Assume responsibility in network and related information security. Maintain national information security and the construction of national information security protection. Direct and supervise the information system security of government agencies and key industries. Coordinate and handle important events in network and information security.

Source: On the responsibilities, organization and personnel of the Ministry of Industry and Information Technology (Directive No.72, 2008), the Office of the State Council, July 11, 1998

The establishment of the MIIT marks the merging between industrialization and informatization. It is the institutional embodiment of the state's "industrialization through

informatization" strategy. Compared with its predecessor, the new MIIT has a further expanded jurisdiction over all industrial sectors. It is no longer a regulatory institution dedicated to the "information technology industry." Rather, the name change reflects the juxtaposition of information technology and all other industrial technologies, and the development plan to use information technology to transform and modernize China's existing industrial structure.

Creating a "super ministry" of such scale and power is said to simplify the decision-making and implementation of information technology projects. The establishment of the MIIT, therefore, is associated with cutting red tape, streamlining government procedures, and reducing inter-agency conflicts. Before the establishment of MIIT, the approval of an information technology-related project required coordination and institutional bargaining between different agencies: the MII was responsible for making policies on technology standard and market entry, the State Development and Reform Commission was responsible for investment, the State Asset Commission for the maintenance and auditing of state funds, and the State Council Informatization Office would act as the ultimate strategic planner and coordinator. With the new MIIT, these related departments are now consolidated under one roof and are supposed to work as different arms of one master. From this institutional perspective, it seems that the state was trying to "smooth out" the institutional barriers that might hold back China's "informatization" progress. However, to what extent would these consolidated departments work in concert with each other, toward the same goal of constructing China's "information society" remains an open question. But the debut of the MIIT bears both substantive and symbolic support to China's informatization campaign.

4.3 Institutional reform of content regulators

In China, the government agency responsible for overseeing broadcast media, including radio, television and film, was the Ministry of Radio, Film and Television (MRFT). The MRFT originated in 1954. Shortly after the founding of the People's Republic, the central government created the Bureau of Radio Affairs (BRA) to direct and coordinate China's nationwide radio network. The Bureau of Radio Affairs was placed under the dual leadership of the Central Department of Propaganda (the Party), and the State Council (the State). Specifically, the administrative and technical work of the Bureau of Radio was governed by the State Council, while its propaganda-related work was supervised by the Central Department of Propaganda. This dual leadership was illustrative of the central importance of broadcast technology in Chinese politics. However, it also suggests the complicated and potentially conflicting relationship between the state and the party on matters concerning propaganda and thought work. Although the party has the "absolute authority" to direct propaganda work and policy, the actual implementation of these policies was handled and mediated by the state. This means that when the party and the state disagree, political conflicts tend to arise on the function, work and administration of the BRA and later, the MRFT. This tendency was then confirmed by the opening-up reform and the state institutional restructuring.

During the Cultural Revolution (1967 to 1976), the Bureau of Radio Affairs was renamed the Central Bureau of Radio Affairs, and placed under the leadership of the Military Management Committee, a reflection of radio's critical importance in a period of extensive social mobilization and mass campaigning. The Central Bureau of Radio Affairs was listed as a "direct affiliation" (*zhongyang zhishu bumen*) of the Chinese

Communist Party, and therefore no longer led by the State Council. This organizational

arrangement lasted until 1977, when the dual leadership structure was restored as before

the Cultural Revolution. In 1982, the Ministry of Radio and Television (MRT) was

established to oversee the nationwide broadcast network. The status of the MRT as a

broadcast regulator became further enhanced in May 1986, when the state took the Film

Bureau of the Ministry of Culture and merged it with the MRT into a new department:

the Ministry of Radio, Film and Television (MRFT). By this time, the MRFT had

emerged as a central regulator of broadcast affairs, and had reached its highest

administrative status as a ministerial-level, composing department of the State Council.

In the circular on the function, composition and personnel of the MRFT, the State

Council made the following description of the ministry:

> The Ministry of Radio, Film and Television is a functional department of the State
> Council overseeing radio and television propaganda, as well as the operation of
> broadcast enterprises. It is both a propaganda organ, *and* a regulator of radio, film
> and television industries.

Since its birth, the MRFT has acted both as a player and a referee in the broadcast

services market. Not only did it hold the power to issue and revoke the licenses of radio,

television stations and film studios at every administrative level, it also owned and

managed all the national radio and TV stations. In addition, the agency was also

responsible for creating the framework for content regulation on radio, TV, films, and

imported video programs, and constructing the broadcast network at central and local

level. The dual identity of the MRFT as a regulator and an industry player is illustrative

of all industrial regulatory agencies in China.

In the 1998 state institutional reform, the Ministry of Radio, Film and Television

was moved from its ministry status and its name was changed into the State

Administration of Radio, Film and Television (SARFT). Although it was still recognized by the State Council as a ministry-level agency, it was no longer a "composing department" of the State Council, but a "direct affiliation." This seeming "downgrade" of its administrative level was accompanied by changes in its job description: The function of planning, management and standard making of national broadcast networks was handed over to the Ministry of Information Industry. And the authority to manage imported video programs, previously shared by the GAPP and the SARFT, was now completely assigned to the SARFT.

Very little explanation has been given on why the state had changed the "ministry" overseeing broadcast technologies into a "state administration." One possible reason was that in the midst of the central government's "separating administration from enterprise" campaign, all ministries were expected to meet the political need of divesting itself from the ownership and operation of related businesses. However, on the issue of broadcast media, the state was not willing to relax its control on the country's most powerful propaganda machinery. A practical solution to this reformatory dilemma was to set aside the Ministry of Radio, Film and Television as a special agency. As a special regulatory agency, the SARFT was allowed to continue its ownership and operation of media outlets, while assuming its role as a state regulator. This institutional move offered the opportunity to take the SARFT off the pressure of opening up and privatizing the media industry, and reaffirm the control of the Party and the state over propaganda and thought work.

In the meantime, the Party has never forgotten to stress its standing on "thought work" and its unchallenged status as the absolute authority over Chinese cultural and

political communication. In his keynote speech at the 15th Party Congress, President

Jiang Zemin noted the importance of state control over publishing and broadcast industry:

> "To develop the industries in literature and art, news and publishing, radio and television, is an important part of the (socialist) cultural construction. News production must be aligned with the party principles... (Therefore, we) must strengthen our control over the news and publishing industries, optimize their operational structure, and improve their work quality."

Later, in a speech delivered at the Sixth National Literature Conference, Jiang

again stressed the importance of politics in everyday cultural production:

> "Politics exists concretely in our lives. It exists in the thoughts and feelings of our cultural workers, especially at a time when we're facing western dominance in economy and technology, and the infiltration of western ideologies. To put politics aside, or to say that one could stay away from politics, was simply impossible."

After the 1998 state administrative restructuring, the SARFT was strengthened as

a content regulator of broadcast media. This goal was realized through two institutional

moves: First, the administrative duty of maintaining the technical aspect of the broadcast

and cable networks was taken over by the MII. This way, the MII could coordinate the

design and construction of Internet and digital networks with the existing broadcast

network, and later, move ahead to integrate these two networks, by offering cable

services through Internet access points.

Second, the duty of screening and overseeing video content imported from foreign

sources was taken over by the SARFT. Before this assignment, the MRFT and the GAPP

were both involved in the regulation of video contents. The GAPP believed videotapes

were just a form of publication, and were sold in the same way as books were in its

public-owned bookstores. Therefore, it should have the right to regulate video contents

distributed through its system. The MRFT, on the other hand, argued that video was close

in form to television programs, and should be placed under the jurisdiction of the agency that governed broadcast media.

Is there any benefits, politically, to having video contents under the regulation of the SARFT (broadcast content regulator), rather than the GAPP (print content regulator)? On surface, this reassignment of administrative duty only seemed like a nominal clarification as to which side video technology falls on. However, if one compares the regulatory strength of the two agencies, it would be easy to see that video had been moved from relatively less control up to a level of tightened control. The SARFT, as the central regulator of broadcast and cable programs, enforced a much stricter standard of content regulation than the GAPP, whose influence had been considerably weakened by the flourishing of electronic and digital media. In the late 1990s, when imported videotapes reached a record high circulation in China, to contain their political impact had become a government priority. By moving the oversight of video contents from the GAPP to the SARFT, programs that failed to pass the SARFT's screening criteria and censorship would not be allowed for airing on TV. And in turn, what is not allowed on TV would not qualify as acceptable materials for publication and distribution. In doing so, the state had in effect narrowed the number of video products that could be distributed on China's book market.

The special status of the SARFT demonstrated the state's need for a strong government agency to oversee the development of broadcast media. In the central government's view, the broadcast media were the channels that carried propaganda and influence. Therefore, while decentralization and liberalization measures were introduced in the broadcast system at the local level in the early 1980s, the state must compensate for

this "loosening up" by creating a powerful, centrally-aligned agency which was capable of executing quick and effective intervention. In addition, when the number of TV stations nationwide made the quantum leap from around 30 in 1983, to 6800 in 2001, and when the goal of quickly developing China's broadcast infrastructure had been achieved, it was time to tighten the restrictions and rein in on the stations that exceeded government's development plan. In the words of a deputy director at the SARFT, "in the face of nearly blind expansion over the past decade, to reduce the number of existing stations, and to change their functions as well as the overall market structure, was simply unavoidable" (Xinhua News Agency, 2006).

In its attempts to restore control of the center over China's broadcast network and content, the SARFT frequently cited technical reasons. These technical reasons were utilized to justify the state's move to eliminate the locally-sponsored, small-scale TV stations. Cable technology, for instance, was used to extend the influence of state-owned TV stations and large, regional media conglomerates. Satellite communications and digital TV were used to limit the reach of local, independent stations. These techniques will be discussed at greater lengths in the second part of this chapter.

4.4 Techniques of control under the new regulatory structure

4.4.1 Adjusting the tiao/kuai system

Since the early 1950s, the Chinese media and communications system has been dominated by a bureaucratic structure based on administrative hierarchy (*tiao*) and territorial division (*kuai*). The setup of *tiao* means that for a media organization at a certain level, there would be a corresponding authority that directly supervises and directs its work. The definition of authority is fairly clear among agencies, and there is very little

dispute as to who has the power to govern what. As a result, the *tiao* structure has allowed the Center to quickly disseminate and implement its decisions, as power trickles down along every link on the chain of command. The setup of *kuai*, on the other hand, grants discretionary power to the regional and local government, where the local government Party Committee has the direct right to supervise and intervene in the work of media organizations in its region. The *kuai* structure allows the Center to delegate power to its representatives across different geographic regions, and alleviate itself of the burden of providing all the financial and material support for telecommunications and broadcast construction. The *kuai* structure became even more dominant in 1983, when the State Council effected a critical policy change: It allowed municipal and county-level governments, which were previously only relaying programs from the Center, to build and manage their own full-scale radio and television stations. This decision was largely due to the Center's inability to provide sufficient funding for expanding national broadcast coverage. The municipal and county-level stations, together with the pre-existing central and provincial radio and television stations, laid groundwork for the four-tiered regulatory structure of China's broadcast network.

It should be pointed out that the *tiao/kuai* structure was not a unique character of the media and communication systems in China. It is also a hallmark of China's administrative system, and has been observed in many other sectors such as commerce, finance, electricity and construction. But the study of state-initiated centralization, of how communication technologies were reorganized under a strong, consolidated regulatory scheme, and how state control could be strengthened, involves a systematic understanding of the *tiao/kuai* system. By making institutional changes to the *tiao/kuai*

structure, the state had managed to tighten its control over the press and the broadcast network, and contained, though not completely, the proliferation effects of digital innovation.

The institutional changes of the *tiao/kuai* structure started with reducing the layers of command in the vertical (*tiao*) system. In 1996, the Central Committee of the CCP and the State Council issued the "Circular on Strengthening the Management of Press, Publishing, Radio and Television Industries." This became the first round of government campaigns aiming at cutting down the number of newspapers and broadcast stations. To consolidate the press industry, the policy tightened the licensing procedures for newspapers, requiring all existing newspapers and periodicals be re-approved by the GAPP, while the publication of science and technology journals must be reviewed by the GAPP, and their applications re-submitted via the National Science Committee. The policy also aimed at eliminating the number of newspapers run by nongovernmental bodies. Journals run by trade associations and nonprofit organizations would "in principle" be kept to the minimum, if not entirely wiped out.

For the radio and television industries, the state effected a system-wide recentralization by pushing for an integration of technical standards. The policy spelled out the terms under which radio, over-the-air television and cable television stations should be merged into one operating unit. Radio and television stations at the municipal level either had their licenses revoked, or were reduced into transmission stations. Television stations further down the administrative tiers – at county and township level – were ordered to close down, while county and township level radio stations were allowed to continue their operation, to ensure the vast rural land was reasonably connected and

informed. This series of institutional moves had the effect of transforming the four-tiered regulatory structure of broadcast network into the pre-reform two-tiered system. In the opposite direction to the 1983 policy of encouraging county-level government to establish their own television stations, county-level stations after 1996 were prohibited from carrying their own cultural and entertainment programs, and they must purchase these programs from sources authorized by the SARFT. In a follow-up 1999 directive, the State Council simply ordered all autonomous municipal and county-level cable television stations be dissolved and merged into provincial-level cable networks, resulting in a clear-cut, consolidated two-tiered regulatory structure.

Besides shortening the chain of command in the vertical (*tiao*) system, further reorganizing efforts were made in the horizontal (*kuai*) system, that is, to create large regional media conglomerates. This has stimulated the formation of provincial-level broadcasting conglomerates. In June 1999, the first broadcasting conglomerate, Wuxi Radio and Television Group, was granted its operating license. In the same year, the State Council issued the circular, "Opinions on strengthening the broadcast network construction and management," which explicitly pushed for the creation of provincial-level broadcasting conglomerates. In response to this policy mobilization, in 2000, one of the largest provincial-level broadcasting groups, Hunan Broadcast Group, was established in Changsha, South China. This consequently triggered a wave of media conglomeration craze across the country. In December 2000, the largest broadcasting conglomerate – China Radio, Film and Television Group was founded, by consolidating all the national radio and television stations under the jurisdiction of SARFT into one company. Following this move, Shanghai, Beijing, Shandong, Jiangsu, Zhejiang and

Tianjin all established their own provincial/municipal broadcasting conglomerates. This state-motivated broadcasting organizational restructuring has drastically reduced the number of existing radio and television stations. By the end of 2000, of the 4147 county-level broadcast stations, more than half (2400 stations) were eliminated, and another 2216 prefecture-level stations were relicensed (Yearbook 2001, p.53). Then, in 2002, the number of full-service television stations further dropped to 357, including the national central television (CCTV), 33 provincial stations, 27 provincial capital city stations, and 296 regional city stations (Shanghai Television Festival Committee and CCTV-Sofres Media, 2004). More than 1200 broadcast stations survived at the county level. But they were reduced to transmission stations, and no longer allowed to produce and broadcast their own programs.

From the late 1990s, in the background of rising media commercialization and technological convergence, the *tiao/kuai* structure of China's media and communications system, an administrative structure characteristic of the planned economy period, has been gradually giving way to a recentralized system which facilitates integrated and coordinated control. It is worth noting that this recentralization was accomplished through an overall "liberalization" of the media market, and by introducing the commercial logic to the previously pure ideological work of media organizations and outlets. This phenomenon lends support to the argument that state control and the market may not necessarily go against each other. They might instead, to use the words of Judith Polumbaum, engage in an "intricate dance" that simultaneously reinforces and contradicts each other (Polumbaum, 1998). The state could utilize the market as a mechanism to justify its hold over "cultural and thought work," citing economic

standards such as profitability, efficiency and scalability as the reason for making changes in the regulatory *tiao/kuai* system. In other words, the market logic has replaced, though not completely, the ideological guidelines and direct administrative orders as the rationale for restructuring the *tiao/kuai* system.

4.4.2 Unifying technical standards

Harmonizing/unifying technical standards was one of the primary methods used to centralize the media system and secure effective control. Unifying technical standards was cited as a framing rationale in state policies as to why the state needed to consolidate the broadcast industry, and to reconfigure the highly fragmented telecommunications infrastructure.

In the 1996 broadcast industry reform, unifying technical standards was cited as the key reason for the decision to merge over-the-air, cable and satellite television stations at the county level into one operating entity. The decision to consolidate the television industry was made on the basis of the multiplying number of local cable stations that had appeared in the past decade. The widespread of cable technology, and the state's "open attitude" to local government setting up and operating local stations since the early 1980s, contributed to the multiplication of cable channels at the municipal, prefectural, and county level. It was estimated that by 1996, China had 944 over-the-air TV channels, 1,258 cable channels, 1,005 "education stations" operating commercially and nearly 2,000 county-level TV stations (Guo, 2003; Lynch, 1999).

In view of the "runaway development" of cable TV stations below the provincial level, the SARFT, on behalf of the state, launched a series of regulatory campaigns aimed at cutting down the number of local cable operators – advancing the argument that it must

avoid "repetitive construction" and "waste of technical resources." In the "Opinions on Strengthening the Construction Management of Cable Networks," jointly issued by the SARFT and the MII, it was stipulated that from September 1999, to stop repetitive construction, no transmission optic fiber networks can be constructed without approval of the supervising broadcasting regulatory boards, and that the national backbone network constructed by the central government must be utilized over the local networks. To "avoid waste of technical resources," the SARFT further stipulated that there could be only one television network for each administrative region, which was known as the "one locality, one network" policy. Two years later, the SARFT did an assessment of the merging progress and found the policy to be highly effective, as the number of broadcasting institutions nationwide had decreased by 68%. The SARFT then decided to consolidate the municipal and provincial level stations in a similar fashion. As a result, cable TV stations below the provincial level ceased to exist as of July 1, 2001.

In the telecommunications sector, similar phenomena had developed along the lines of telecom network multiplication. Besides the national telecom networks operated by the Ministry of Posts and Telecommunications, other parallel bureaucracies, such as the Ministry of Railways, the Ministry of Energy, and the Ministry of Mining had all embarked on the construction of their own telecommunications networks. It was argued that these bureaucracies required advanced communication capabilities to meet the demands of their production activities, and therefore, they couldn't rely on the rudimentary and generalized network facilities provided by the MPT. On the other hand, there were reasonable incentives for these bureaucracies to construct their own communications network, because they did not share profits with the national service

monopoly. As a result of this development, by 1993, of China's 32 million telecommunications lines, 12.74 million (nearly 40%) belonged to administrative bureaucracies other than the MPT. The private networks even constructed their own long-distance trunk networks, which operated independently of the MPT's public network.

The proliferation of private and independent networks gave the state the cause to construct a "unified network" for coordinating and managing telecom services. The state first responded to the "proliferation problem" by calling to stop any ongoing construction of independent networks, and then sought to consolidate the existing networks by launching the Golden Bridge Project in March 1993. The Golden Bridge Project proposed to link all government bodies, large and medium-sized enterprises, educational and research facilities, and other important organizations and individuals into a unified national data network, and externally, to the Internet. Although connecting independent networks to the Internet can be seen as an act of facilitating information flow and data exchanges, it actually facilitated the central state's attempt at tightening its control over existing domestic communications networks, as it followed up with a decree in January 1996 that from then on, no one would be allowed to construct or operate interconnecting networks without approval from the State Council.

Using technical standards as a method of control put the state in the central position as a standard setter. The proliferation of technical standards and private networks has given the state the cause to strengthen its role as the allocator of "information resources" and the planner of the informatization objectives. The construction of communication networks might be viewed as a ministerial imperative. But the construction of a *unified* national communications network can only be a state-level

imperative. The state's role as a standard maker enhances its ability to coordinate and negotiate between different interests in the development of information technology, and promote itself as the "neutral" regulator in the face of competing market forces and industry players.

4.5 Conclusion

In the late 1980s, the original institutional setup of communication technology regulatory agencies has been increasingly ineffectual and self-conflicting in governing the development of communication technology in China. It motivated the government to reform the regulatory institutions overseeing the telecommunications and media industry. The result was the creation of a recentralized, consolidated regulatory system that put the power of directing communication technology development into the hands of fewer policy makers. The institutional reform in communication technology development was a process in which the state expanded its jurisdiction and tightened its regulatory strength over certain "key areas" in the communication and information industry. These "key areas" included imported video contents and the Internet. The consolidated regulatory system was put together in response to the fragmentation of state power in controlling and shaping the media and telecom industry. The consolidation of state power does not guarantee the state would retain absolute power over the telecommunications and media industry. But it did enrich the state and gave rise to a host of new control techniques that marks China's post-Mao politics.

Changes in the regulatory structure of communication and information technology have demonstrated that the bureaucratic system of control is giving way to a system-based, technology-empowered form of control. This suggests that the state's control of

the communication and information technology no longer depends on strict divisions between different institutional departments, but on close coordination and in some cases, institutional bargaining between state agencies with divergent interests. The institutional bargaining gave the state greater room to adjust its regulatory strength over the "problematic" areas in communication and information technology development. The state's role as a mediator and rule-maker was further enhanced by the use of technical standards as the rationale for adopting policy changes. It allows the state to justify its decision (and the authority to make decisions) on technical rationality, and to turn away from the costly techniques of direct control, administrative intervention and ideological restrictions.

Chapter 5

Visualizing an information society:

Nation-building and the importance of imagination

In his observation of Chinese communications system and political culture,

Lucian Pye (1990) remarked that researchers who were interested in the relationship

between the two had almost without exception examined the ways the Chinese

Communist Party used communication to mobilize and steer public opinion, to

indoctrinate and to raise the level of political consciousness, and to change the attitude

and behavior of the society. Most of these research attempts, however, focused on the

content and the *organization* of Chinese political communication (Houn, 1961; Yu, 1964;

Liu, 1975). These studies carefully documented how political authorities used

technologies such as radio, print and television to construct the ideological environment

in which the Chinese people lived, and how they propagated the state's goals and values.

But there was very little said or studied on the *technological* aspects of communication.

This is not to say that these research projects made no mention of the technical aspects of

the communication process. Many of them did. But the centrality of the content-driven

approach in studying communication and Chinese politics has led to a lack of research

effort (and interest) in the technological side of the communication problem. As a result,

little is known of how the technical qualities of communication technology was presented

and discussed in China's policy discourse, how the state perceived and understood

different types of communication technologies, and how the perceptions of these

technologies may affect the way in which the state exercised its power. The study of the

political utilization of communication technologies in China was treated as a given fact, rather than a subject open to critical inquiry, examination and reflection.

If one steps back from the content-driven approach in studying Chinese political communication, it would be easier to see that the very process of communication, mediated by various technological platforms and regardless of its contents and ideological baggage, was one in which a collective identity took form and evolved over time. This collective identity, enhanced by a feeling of being connected to a wider community, a perception of narrowed distance between the center and the local, and a shared pride in China's technological advancement, contributed to the larger cause of nation-state building. In this chapter, I intend to show that the formation of a collective national identity is not merely an outcome of communicative acts enabled by various forms of technology. Nor is it simply built on the content, which tends to be ideological or nationalistic in nature, of various communication/propaganda campaigns. Essentially, the emergence of a collective identity has to do with what the state says about technology, and how it shapes and presents the "technological reality" in which the Chinese people live.

The state's power over communication technology, as argued in the previous chapters, does not only consist in the capacity in constructing advanced, technically leading communication systems, but also in its ability to shape the "rhetoric of technology": how technologies are to be felt, thought of, experienced and remembered in Chinese public culture and social memories. The rhetorical construction an "information society," for example, conjures the vision of what China's technological future will look like, and gives people a sense of belonging to a community and nation. Besides, it fuels a

sense of pride and nationalism in China's assertion and ambition to become a technological power. In doing so, the state may effectively defuse the conflicts and tensions that arise from rapid economic development and socio-structural changes.

In this chapter, I will analyze China's rhetorical construction of an information society in three areas. First, I will look at the development of e-government projects, which blanketed across the nation in the early 1990s. This series of e-government projects was one of the state's concerted efforts at transferring government agencies' political clout into the online world. It could also be seen as an extensive rebuilding of state apparatus and assertion of power on a new technological platform. Second, I will look at the presentation of "high technology" and "national achievements," how it fosters a shared sense of honor and pride in China's public culture, and produces momentum for the state's indigenous innovation policy. Third, I will examine the rhetorical construction of "shared participation" through state-choreographed, mega-scale events. I will use the Beijing Olympics opening ceremony of 2008 to illustrate the role of communication technology in creating a sense of cohesion in Chinese cultural experience.

5.1 The development of e-government projects: the politics of talk

Starting from early 1992, the General Office of the State Council set up an implementation plan for adopting office automation systems for government administrative offices. This became the origin of e-government movement in China. The plan required government offices at all levels to build an office automation system in support of administrative decision-making and public services. The rationale of this decision was simple: China was facing an overbloated administrative structure riddled with problems in operating inefficiency, functional overlap and bureaucratic

procrastination. The purpose of this office automation movement was to equip government offices at central, provincial, municipal and prefectural levels with computers, and wiring them up into an interconnected network. It was expected that the wired computer network will harmonize the relationship between central and local agencies, and reduce internal frictions within government divisions.

In line with the plan to connect government agencies with computers, from 1993, a series of "Golden Projects" were introduced as part of the information infrastructure construction program aimed at improving administrative capabilities. The "Golden Projects" consist of three parts: The "Golden Bridge" is a backbone economic information network which connects private and government department networks across the country. The "Golden Card" is an aggregate of information databases from financial service agencies, allowing credit verification and interregional banking transactions. The "Golden Customs" is to set up specialized exchange data networks connecting the foreign trade sector, banks and customs service agencies, so that requests and applications can be processed more efficiently. All three projects were predominantly devoted to business and commerce, highlighting the state's priority in utilizing information technology to drive economic development. Publicized and praised as the government's "pioneering" efforts at adopting techniques of "scientific management," the "Golden Projects" were intended to strengthen the state's control over economic activities by "allowing the government to act across ministerial and industrial demarcation lines" (Zhang, 2002, p. 170).

In the early days of the e-government movement in China, the state focused on creating specialized databases, and computerization of bureaucratic work. The design of the Golden Projects revealed a disproportional emphasis on unifying and connecting central and local offices, building and sharing electronic databases, and enhancing the state's monitoring of business activities. Yet the e-government promise of increasing public access to government information and delivering public services, was not included in the Golden Projects plan. As a result, the public awareness of the Golden Projects was low. According to a national survey conducted in 2003, 48.7% of the Chinese population did not know about e-government or only heard of the term. This lack of public awareness was exacerbated by the exclusivity of the Golden Projects, which were built as a specialized database with limited application scope and information demand. As a result, the state-sponsored program lacked genuine user demand and true developmental momentum. As of May 1998, five years after the Golden Projects' initiation, the number of government-registered websites was only 145.

With the limited impact of the Golden Projects in mind, in January 1999, the state initiated a new round of e-government movement named the "Government Online Project" (GOP), which stipulated that 80% of the state organs must put themselves online by 2000. The State Economic and Trade Committee, National People's Congress, the China Consultant Conference, the Higher Superior Court, and more than 40 other state ministries were the first group of agencies which joined the program. This became a major administrative push for the proliferation of government websites. Under the direct command from the superior offices, government agencies at central and local levels responded with alacrity. By June 1999, the number of gov.cn domain names increased

more than ten times from 145 to 1470, representing 720 government departments. Then, by 2002, the China Internet Network Information Center reported 5864 gov.cn domain names online (CNNIC, 2002), and by the following year, the number had jumped up to 7,796.

The promotion of e-government through administrative measures certainly helped explain the rapid growth of government websites. The hard, quantified criteria of e-government development had made the quick proliferation of government websites somewhat predictable and easy to understand. However, to what extent does the quantitative change in government websites reflect a qualitative change in administrative services is a different question. A broad assessment of the Government Online Project in 2001 revealed that most of the government websites fell short of the ideals they were set up to fulfil (Yang, 2001). Many of the websites were structured in a generic fashion, with a brief introduction of the agency, a chart illustrating its organizational structure, a biographical paragraph of its leaders, and some archived information on official activities and announcements. Essentially, these websites fulfil a "broadcast" function, which was not fundamentally different from the ways in which old technologies, such as television and print, were utilized by the state.

If the e-government projects did not substantially contribute to state administrative capability and service quality, then why did the state want to move government agencies online? If e-government websites did not fundamentally alter the ways in which state agencies work, would it nevertheless allow and furnish opportunities for the state to talk about change and progress, creating a picture of an improved government? What messages did the state intend to convey to its people, through these

massive, promotional acts of a digital government platform? Answering these questions would require a reading and a decoding of state policies on the e-government projects.

To perform the analysis of state policies and the official rhetoric on the e-government program, I collected the policies issued by the State Council and the Ministry of Information Industry, the agency responsible for e-government planning, from January 1999 to October 2007. In addition, I went through the press releases from the State Council on the subject of e-government during the same period. All policies analyzed were at the central level, as policies issued by provincial and prefectural governments were too diffuse in number and they tend to follow, if not repeat the same logic and language seen in central government policies. A qualitative reading and analysis of these policies and press releases yielded three main themes: First, e-government was closely associated with improving state transparency, openness and accountability. Second, e-government was described as the "scientific weapon" to fight corruption. Third, e-government was the "technological catalyst" that fuels the transition from a state-centered government, to a people-centered government.

The most visible theme in the state rhetoric about e-government was that it boosts government transparency and openness. This is hardly anything new, considering that transparency and openness underlie nearly all political rhetoric on e-government projects in different polities over the world. What makes it worth examining in the Chinese case, however, is that allows an authoritarian state to open itself to the talk of transparency and democracy. While emphasizing the importance of transparency and democracy, party officials have come to attribute, and sometimes reduce a political problem to a "communication crisis." For example, on the issue of "illegal brick kilns", the Governor

of Shanxi attributed the problem to the lack of open communication between the state and the people. In an article about the "Internet era" for state administrators, he argued that open, unchecked communication is key to the crisis prevention and decision making:

> "In the face of challenges presented by the Internet age, party members and state administrators must update their thinking. They must confront rather than avoid public opinion, and get creative in solving problems. From SARS incident to the water pollution in Songhua River, to the illegal kilns in Shanxi Province, these lessons showed that blocking, covering and burying information online is an increasingly useless tactic. We must share information with the public regularly and learn to lead public opinion, before we regain the control of political work."

The state rhetoric on increasing transparency and openness through e-government was lined with examples about "creative" and open use of new information technologies. In one news release, Liao Xinbo, deputy director of the Public Health Department of Guangdong Provincial Government, was profiled with his blog. Liao even gave himself a nickname online, as "Brother Bo." Liao's blog was devoted to announcing public health-related news in Guangdong and everyday stories about his work. He was reported to have been updating the blog on a daily basis in the past 16 months. The act of Liao was described as "an incredible gesture that brings officials closer to the public," and was deemed conducive to the trust relationship between the state and its people:

> "For state officials to write blogs – although it's considered personal, and had little to do with institutional reforms – it at least sends the signal that the state is bringing itself closer to the public, and it builds toward a solidified, trustful relationship between our administrators and citizens. "

The second theme that emerged out of the state rhetoric on e-government projects was that it provides the technical means to fight corruption. In a review of e-government development in Shandong province, information technology was compared to a "modern, technical weapon" to fight corruption.

"At the Qingdao Public Housing Fund Management Office, the first thing the staff do when they arrive in the morning is to turn on the computers, and monitor the operation of public housing fund in the city in real time. This electronic monitoring system has simplified the management of public funds. Only a few years ago, 10 million of the public funds were found missing and abused by local officials."

While commenting on the effect of information technology use, Wang Zhongfu, director-general of the State Administration of Industry and Commerce was quoted as saying that the use of new information technology can improve the uniformity of administrative services, and curb the influence of personal connections in the issue of business licenses. In another commentary, websites by the Supreme People's Procuratorate, and by the local public procurator offices were praised as setting an exemplary model for reducing corruption – by allowing informants to report on bribery and corruption cases online. Arguments on the effectiveness of e-government projects in curbing corruption tended to fall on the "incorruptible" nature of technology, and expressed clear admiration for the "impartiality" of the "system":

"This system can collect the latest input from all operating branches. As soon as the data was put in, it can be viewed directly, and cannot be changed or manipulated. The system is secure and confidential. So it ensures that inspectors can access the latest information, detect problems and ensure compliance. Such a system greatly improves the integrity and efficiency of government oversight work."

Third, state policies and media argued that e-government construction would eventually contribute to the transition from a state-centered to a people-centered government. From a technological perspective, it was argued that unlike the traditional model of public service, where people had to travel to government offices to get things done, the new technology can "push" information and government services to people's fingertips, thereby changing the ways people are served by public offices:

"In traditional government-people relationship, the public has to go to the government offices to obtain related information…But in the e-government mode, people can log on to government websites to check information of interest to them. With mobile technology, the government can even push information to mobile handsets, so that people don't have to visit government offices or websites. Obviously, this active public service mode, compared with the passive mode, is more amenable to the needs of the people."

Following the idea of a people-centered government, reports on e-government projects have turned toward the imagination of a better "digital future." "It is expected," argued an article written in 2001, "that in near future, people could stay home while getting their tax payments, real estate transactions, or business registration applications submitted and processed online. In the old days, these procedures could take hours or even weeks to complete." In addition to convenience, talk of e-government projects also associate information technology with driving down crime rates, reducing traffic jams, increasing consumer satisfaction, and contributing to a safer, happier society:

"The application of a new police information system will reduce the amount of time needed to process cases by half. The launch of the system will tremendously improve the operating efficiency of our city's public security system, and greatly aid the police force in preventing crimes, solving cases, and enhancing our sense of security."

Similarly, argued an article on the "smart traffic" system:

"Transport is an important part of people's lives. The 'Shanghai City Traffic Network' is designed to stay close to people's everyday life, and offers a large number of traffic service programs…The electronic maps, as one of the free electronic mapping systems in Shanghai, was widely used and loved by the local residents."

The state rhetoric on the development and construction of e-government in China has painted a picture of safer, stronger and happier society. But to what extent does this picture represent reality, and not just an illusory vision or a technological dream that produces an elusive sense of wellbeing, is a question worth considering. No doubt, what

the state had chosen to say about e-government and information technology had invariably fallen on the benefits, while the discussion of drawbacks and downsides, such as privacy, information gap, and the outsourcing of government services were not included in any part of the talk. From this perspective, there is reason to believe that e-government in China, with selective and exaggerated claims on its benefits and payoffs, has been used to fulfil a developmental and propagandist agenda. It allows the state to talk about the benefits and wellbeing it *can* deliver through information technology, while the actual fulfillment of these promises was largely left to imagination and interpretation. By continuously talking about the ideals of information technology, the state created an expectation of "getting there", and gained the authority over the interpretation of the effects and benefits of e-government initiatives, while presenting itself as the self-congratulatory leader and dispenser of technological fruits and social benefits.

5.2 TD-SCDMA: The creation of a Chinese standard and the politics of innovation

In May 2000, the International Telecommunication Union ratified TD-SCDMA as one of the world's three major 3G network standards. TD-SCDMA is China's independently developed 3G standard. And although Datang Telecom, the patent holder of the technology, was only responsible for 7.3% of the technical patents, the Chinese government nevertheless had chosen to champion TD-SCDMA as the "Chinese standard" for the next generation communications network. The acceptance of TD-SCDMA as an international standard, as argued by some scholars, has also given rise to the practice of using technical standard to gain competitive advantage (Suttemeier, Yao and Tan, 2010). Being the first "indigenous technology" which was recognized as an international

standard, the state quickly found the political value of TD-SCDMA. It was made the

"poster child" for China's quest toward technological independence and innovation. On

the success of TD-SCDMA, the state had managed to build a narrative of China's

"miraculous ascendance" as a technological latecomer. It was, in many ways, a

reinforcement of the belief that "only technology can save China," and that "indigenous

innovation" is key to what Chinese policy makers had called the "leapfrog development"

(*kuayueshi fazhan*).

To examine the state's rhetoric on the new 3G standard, I sampled People's

Daily's coverage of the TD-SCDMA technology in the year following its acceptance as

an international wireless standard. The reason that I chose People's Daily over other

national broadsheets and trade publications is that it's the most representative outlet for

government opinions, and it's the major site for the state to communicate its standing,

values, and policy initiatives. From May 2000 to May 2001, the People's Daily published

23 articles on the subject of TD-SCDMA. They included 18 news stories and 5 editorials.

To retrieve the articles, the key term "TD-SCDMA" was entered as the search criteria of

People's Daily full-text database. The search yielded 41 articles, while 18 of them only

mentioned the word "TD-SCDMA" in passing, and did not contain any substantial

content on the subject. These 18 articles were then removed from the sample collection.

The researcher went through the 23 articles in chronological order, and identified the

themes and recurrent patterns on the subject.

The first point that emerged from the development on the TD-SCDMA standard

was that it was highly publicized as "the first high-tech breakthrough" in China's one

hundred years of history. The development of the standard was significant because it

broke the "technological monopoly" long held by western developed countries. This perspective of covering the TD-SCDMA drew a contentious picture between China and the West, a picture in which western countries deliberately used intellectual property as a means to hold back the progress of developing countries, so that they could continue to reap and exploit labor from the developing world. According to the article, the "technical oppression and exploitation" from the developed world supplies the incentive and driving force that leads China to push ahead in its independent technological innovation.

> "As one of the three main technical standards for 3G wireless communication, the success of TD-SCDMA is highly significant. Since Alexander Bell invented the telephone in 1876, in the 125 years of telecommunications history, the developing countries have never owned an international standard. Standards in world telecommunications history have always been monopolized and controlled by Europe and America."

> Similarly, an editorial on why China joined the 3G competition argued:

> "Although China is now No.1 in the number of mobile, fixed telephone and broadband lines, and No. 1 in user population, due to the lack of industrial standardization and intellectual property rights, power has remained in the hands of international telecom giants, from research and development to product manufacturing. As a result, we had to pay enormous royalty fees…But now, we have almost caught up in the global 3G race. It is hopeful that through commercialization, we can change our status from a follower to a rule-maker of the game."

In news coverage of the TD-SCDMA, the sense of accomplishment was even heightened by considering the limited resources and time that had been given to the project. It was a reminder that this technological achievement should be evaluated with the consideration of China's status as a technological latecomer. Because of this, the recognition of the TD-SCDMA as an international standard was a confirmation of the state's policy on driving indigenous innovation, and a proof of the effectiveness of the "leapfrog development" strategy. As pointed out by one article:

"Compared with the other two 3G standards, WCDMA of Europe and CDMA2000 of U.S., the TD-SCDMA standard had a late start, and had much less investment. Up to now, the state has invested less than USD100 million in the project. The fact that we could achieve the same results with much less capital, and in a narrower time frame attests to the effectiveness of the reform and innovation policy advocated by the Party."

Following this point, the People's Daily went ahead to create the perception that TD-SCDMA is a "Chinese standard." In response to the criticism that only 7.3% of the technologies constituting TD-SCDMA were developed and owned by Datang, Liu Chunhui, a technology journalist who wrote on the People's Daily, argued that the small percentage actually represents a significant proportion of the "core technologies" constituting the TD-SCDMA standard, and that when evaluating the role of patents in a technical standard, one should put quality before quantity:

"Given the complexity of developing a technical standard, not a single company can claim full ownership of the technologies. Comparatively, the core technology patents held by China on the TD-SCDMA standard are both critical and indispensable."

In addition, to establish the perception of TD-SCDMA as a "Chinese standard," the People's Daily went further to stress it was not only "made in China," but also "made for China." It pointed out that TD-SCDMA was designed and developed "with the specific characteristics of China in mind." For example, the standard is especially suitable for densely populated countries and regions, runs on lower energy consumption, costs less to build, and can facilitate the smooth conversion from 2G (GSM) to 3G networks. These three technical advantages meant that TD-SCDMA is a standard "cut out" for China, and these advantages are crucial to the commercial success of TD-SCDMA in the Chinese market.

By firmly asserting and constructing TD-SCDMA as a "Chinese standard," the People's Daily then used it as a base to call for industrial support and acceptance. Although it was selected as one of the three major 3G standards, TD-SCDMA was found to be technological immature and not ready for wide market application. However, this inadequacy did not prevent the state media from promoting and "selling" it to mobile manufactures and consumers. The association of TD-SCDMA as a "Chinese standard" and the overwhelming importance of "national interests" seem enough to make people overlook its technical immaturity and the risk of market failure. On the matter of TD-SCDMA, "national interests" had certainly triumphed over the rules of the market or technical rationality in deciding which standard should be used for China:

> "Whether the 'Chinese standard' can take an important seat before the 3G market finally shapes up will determine whether we will be led by other countries in the next 20 years. Under these circumstances, we must get together the support from administrative departments, technology developers and mobile service providers, and ask them to collectively push forward the development of the TD standard."

With the rhetorical construction of the state policy and media, by 2001, TD-SCDMA had emerged as a "national technology" which attests to the correctness of China's developmental strategy, and the effectiveness of the government's indigenous innovation policy. This gave form to a "politics of innovation" in China's information technology development. As technology historian David Edgerton had pointed out, the relationship between the state and technology is prone to being discussed in terms of national inventiveness and innovation (Edgerton, 2007). The politics of innovation has allowed the state to exercise its power and influence over the technological field. The power of the state is not limited to its ability to organize the research and development of new technical standards, but more importantly, consists in its ability to construction the

standard as a national technology, and through consistent persuasion and promotion, push for market adoption of a technologically inferior standard.

A closer look at the TD-SCDMA standard yields some revealing contradictions to what the state had been saying about the 3G standard. The TD-SCDMA consists of two parts: core network and radio network. Of the 260 core network patents, China owns 16. The core network of TD-SCDMA originates from the WCDMA standard, which means that foreign firms like Nokia, Ericsson and Siemens would have access to technologies that comprise the core of the TD-SCDMA standard. In this sense the TD-SCDMA is by no means a standard "based on Chinese independent innovation". In addition, the state's claim on TD-SCDMA as a "national standard" is compromised because it relies on the United States GPS satellite system to be simultaneous, which has left the technology vulnerable to national security breaches. As the chief sponsor, engineer and developer of the TD standard, the state must be aware of these technological drawbacks. But why would the state insist on promoting the TD-SCDMA as a national standard and its wide market applications? The consideration underlying the decision is surely political rather than technological. Presenting TD-SCDMA as a national standard clears the way for further state input and intervention in technological development. The organization and allocation of resources around innovation projects allowed the state to position itself as the central planner of technology development activities, and in the process of constructing a new national technology, enhances its power as a standard setter and driver of technological innovations.

5.3 Shared participation: Beijing Olympics and the politics of spectacle

In the sixty years of the People's Republic, perhaps no events were more heavily publicized, extensively covered and propagandized by the state media than the 2008 Beijing Olympics. The Olympic Games were taken as a once-in-a-lifetime opportunity for China to present its economic, technological, cultural and social achievements to the rest of the world. At the same time, and perhaps even more importantly, the Games presented a hard-won opportunity for the state to communicate to its people the "political feats" it had managed to accomplish, and to paint an authoritative picture of an "open and real" Chinese society. As China scholar Judith Polumbaum pointed out a few years ago before the Beijing Olympics, the Games would likely give "Chinese citizens new purchase on a sense of national greatness and collective destiny."

Covering the Beijing Olympics was no less than fighting a battle of conflicting images and perceptions, because both foreign and Chinese media organizations have been running with competing representations of the Chinese society, environment, and culture. The use of communication technologies constituted a significant competitive factor in this media race. To emerge as a winner of this competition, the Chinese state had pervasively used communication technologies to construct the image that represented a "rich and strong" China, creating the vision of a nation moving ahead on the "road to recovery", and poised to become a "world power."

On the other hand, the fact that the Olympics were both a sporting and spectatorial event allowed the state to cultivate a sense of "shared participation" among the audiences. But the extensive use of communication technologies also presented a problem for the Chinese state: Because sport events were typically broadcast and watched

live, it would be virtually impossible to preview, censor or screen messages that go out in real time in these broadcast events. In this sense, the same communication technologies that give state the edge of constructing the "reality" of Chinese society also pose a subversive risk. While recognizing the economic benefits of communication technologies, the Chinese state may have to face an unwanted consequence – that information will travel faster than the state needed it to, on a technically well-equipped and sophisticated communication network which the state had worked strenuously to put together in the first place.

To analyze what the state and state media said about the Beijing Olympics-before, during and after the Games - would be a subject that merits a separate study. Instead, I will not look at what the state said about the Olympics in general, but what it said about *communication technology in Olympics, or communication as an embedded technology in creating and mediating the spectacle of Beijing Olympics*. Specifically, I will look at the role of communication technology in cultivating and maintaining public interest and enthusiasm about the Games. On this basis, I will critique how the state packaged a sense of cohesion and unity by enabling the collective experiencing/watching of a historically meaningful event. The result would otherwise be impossible to achieve, without meticulous planning and coordination of communication technology use.

August 8 of 2008 was a record-making day in Chinese history. On this day, 842 million Chinese audiences watched the opening ceremony of the Beijing Olympics broadcast live by the China Central Television. On average, 68.8% of the national TV audience watched the opening ceremony broadcast, setting a new record of audience rating for any events in Chinese television industry. During the broadcast, when the torch

bearer, Chinese sport star and entrepreneur Li Ning lighted the main torch at the National

Stadium, the audience rating climbed up to over 90%. It was estimated that more than

90% of Chinese families watched the ceremony. By all measures, the Beijing Olympics

opening ceremony was the most wide-reaching and publicized media event of the year.

To ensure adequate media coverage, China Central Television used seven major national

channels to carry the program. Besides television, online video broadcast, video-on-

demand and mobile video were also utilized as supplementary techniques to supply

alternative channels for watching. A new mobile television technology, CMMB (China

Multi-Media Broadcast) was developed and deployed by the State Administration of

Radio, Film and Television in 37 municipal, and provincial capital cities. "We'll use all

forms of techniques to construct the widest broadcasting platform for the Beijing

Olympics," said Sun Yusheng, vice director of China Central Television in an interview

in July 2008, "Everyone should have the opportunity to watch the Games, and witness the

glorious moment that belongs to our whole nation."

While publicizing the "high-tech" means of broadcasting the Olympic Games,

state media have focused their coverage on the Party providing broadcast access to

remote areas and underprivileged social groups. Gaining access to watching Olympic

broadcast was not only framed as a social welfare, but a proof and reiteration of the

Party's egalitarian values. Being able to watch the live broadcast of the Olympics

opening ceremony and the sport events was depicted as the most urgent needs of people

living in remote areas, where central and local government have both stepped in to lay

down the technological infrastructure necessary for broadcast signal reception. The China

Economic Daily, a national broadsheet, for example, reported in May 2007 that the state

had set aside 2.5 billion yuan as reserve fund for over-the-air broadcast facility construction in geographically remote areas. One of the beneficiaries of this policy, according to the report, was Yuanyang County, an ethnic minority autonomous county located in the south of Yunnan Province. With state funding, the county had thus far built up 200 TV relay stations. As a result, more than 4800 families in 233 villages could access at least one channel of radio and television programs. At its conclusion, like numerous news stories of this kind had done, the article cited the words of a Hani minority woman: "Thanks to the support of the Party and state, our life is now considerably improved."

Four main target groups were highlighted in media coverage of the Beijing Olympics and preparatory work leading up to the Games: ethnic minorities, migrant workers, residents in remote areas and disaster refugees. In Sichuan Province, where a magnitude 7.9 earthquake hit the region on May 19, 2008, an important component of the after-disaster report was how local governments provided the facilities for earthquake refugees to watch the Olympics opening ceremony. The report even pointed out that one of the signs of recovery in the earthquake-hit region, was that refugees could watch the ceremony together with the rest of the country. The "collective watching experience," argued the report, produced a "family feeling," a sense of belonging to a larger community, and of not being "left out."

On the night of August 8, the opening ceremony of the Beijing Olympics delivered to the world a visually spectacular story that showcases China's ancient history, its culture and civilizations, its prosperity, strength and its vision for the future. The visual presentation of an open, strong and flourishing China owes much of itself to the

elaborate use and deployment of communication technologies. The broadcast began with 2008 drummers striking stylized drums in a final countdown to the opening. It was followed by a series of fireworks explosions in the form of giant footprints that walked along the ancient central axis of Beijing, starting from the Yongding Gate in the south, through Tiananmen Square, then north to the Olympic Park and then to the National Stadium. The episode, named "Footsteps of History," was meant to symbolically link China's past with its present. The ceremony following the prelude was in itself a visual feast, featuring, for example, the largest LED scroll in the world, Chinese ancient paintings and calligraphy, giant, coordinated formations of actors clothed in ancient scholar costumes, and moving images on the walls of the National Stadium leading up to the torch lighting ceremony.

However, on August 9, it was exposed that the "giant footprints" made up of fireworks that led the prelude to the opening ceremony, was in fact produced through computer animation. It was later confirmed by the visual effects team who worked at the opening ceremony. The 55-second computer animation film took the team nearly one year to finish, and was inserted in the broadcast sequence at the exact time to simulate the actual fireworks going outside the National Stadium. Even those who were present at the National Stadium saw the computer graphics from the giant TV screens, and thought it was filmed from a helicopter. To make sure this insertion was as unnoticeable as possible, the production team even consulted the Beijing Meteorological Office to simulate the hazy effects of Beijing's smoggy sky at night, and added a camera-shake effect to make it look like footages shot live from a helicopter. Media reports prior to the opening ceremony even pointed out that audiences in the Birds' Nest Stadium for the

opening ceremony may not be in a good position to view the fireworks, because most of the fireworks would not be visible from their seats. In other words, watching the television broadcast of the event at home is probably a "better," if not wiser choice. To millions of audiences in China, what they see on TV that evening is perhaps even more "real" than what they see at the actual site of the ceremony, since the live broadcast was aided by sophisticated, high-tech means. In the end, what the TV screen offered was an improved version of China's reality, a comforting and visually appealing image of which China wishes and desires to be seen.

The Beijing Olympic opening ceremony serves as a good allegory to demonstrate the extent to which China's realities are mediated by communication technology. Communication technology is no longer merely the technical instrument used to capture, record and present reality in China. It is now the very source and material of which the "reality" is made and constructed. As Latham (2009, p.50) pointed out in his study of the Beijing Olympics media coverage, the "reality" of the fireworks display was "conceptualized and constituted through and in the media, not separate from or outside them." Being able to create a media spectacle that looked flawless and awe-inspiring outweighed concerns about being untruthful. To Chinese state administrators and media practitioners, the political need of presenting a "strong and rich" China, was integral to delivering the "Chinese Olympian dream." And to deliver a spectacular and impeccable image to the living rooms of millions of Chinese households, as a shared watching experience, was a political imperative that dictates the support and enhancement of all technological means.

After the press exposure of the digital simulation use in live broadcasting the opening ceremony, officials at the BOCOC (Beijing Olympics Organizing Committee) responded with a comment that the fireworks display was "technologically too complex" to be filmed live. The digital animation was added in to help audiences appreciate the "complexity" of the fireworks. Put in another way, it was the technical difficulties involved in live broadcasting a complex scene that made such as practice justifiable.

The BOCOC could have come up with some different reasons for the digital manipulation. Reasons alternative to the "technological difficulty," for example, could be the need to accurately visualize the artistic design behind the "giant footsteps," as articulated by the internationally renowned Chinese artist Cai Guoqiang. It could also have been explained by the imperative of "maintaining the image of Beijing Olympics," since a less-than-perfect view of the fireworks would probably compromise the aesthetics of the opening ceremony, which in turn, reflects on the success of the Beijing Olympics. However, the fact that BOCOC had sought to justify the digital manipulation through "technical reasons" illustrates the emerging centrality of technology in Chinese political discourse. Although the technology-based explanation doesn't mean that the public will buy or accept the rationalization as it is, it does provides the framework and the rhetorical space in which the issue can be discussed in technical terms, and thereby diluting the attention on conjecturing and interpreting the political meaning of the act. This move, however, is not to "de-politicize" the Beijing Olympics. It is, more precisely, a form of politics enhanced and transformed by technology.

Staging an elaborate, meticulously planned media spectacle that showcases China's cohesion, strength, and national pride the Beijing Olympics has allowed the

Chinese state to present and glorify its political credentials. The state's masterful use of communication technologies in creating a visually impeccable image of the Beijing Olympics is indicative of the centrality of communication technology in creating the reality of Chinese society. In the case of the Beijing Olympics, communication technology is more than just the medium between "reality" and an "idealized China". It is the very source and materials of which the reality of China was made and constituted. The spectacle of an "idealized China" was collectively experienced, continuously re-experienced, and will most likely perpetuate in the common memories of a nationally significant moment. This spectacle conveys meanings about China's social reality that are disconnected from its material basis, and yet so engrained in collective experiences and memories that it is through consuming the spectacle rather than the object itself that the Chinese people understand the world around them.

5.4 Concluding remarks

In the development of communication and information technologies, it can be said that these technologies were not merely perceived by the Party as technical instruments, but political devices that can give rise to a variety forms of "technological play". The politics of talk in the e-government development, the politics of innovation in promoting the TD-SCDMA standard, and the politics of spectacle in staging the Beijing Olympics opening ceremony were representative examples of the "politics of technology" through which the state created the vision of an information society, mobilized support for its "indigenous innovation" programs, and constructed the media spectacle the Chinese people could collectively experience, take pride in and memorize.

The exercise of the "politics of technology" illustrated how communication and information technologies can be politicized to fulfil the Party's objectives, and the extent to which communication technology has come to mediate China's political ideals and social reality. Through the practice of technology politics, the state has acquired the ability to cast political questions in technical terms, and political tactics in "technical responses". Communication technology, therefore, has empowered the Chinese state, not in the sense that it allowed the state to reach and influence the minds of millions as it did in the revolutionary years, but in providing a more enduring and resilient mechanism for the state to assert its influence and will.

Chapter 6

Conclusion

After thirty years of economic reform and opening up, information and communication technology has been firmly established as a crucial and central component in China's developmental and economic policy. This research traces the rise of information technology and the "informatization" drive in China's political rhetoric. Unlike in western states, in China, the state takes a central role in deploying and diffusing communication technologies. In this process, the state embedded its values and goals into the design of an information society, and into how a specific form of communication technology should be utilized and managed.

The underlying rationale that motivated the state to pursue the "informatization" strategy was China's ongoing legitimacy crisis. In this process, the state has made its transition from bureaucratic and ideological control to a form of "soft control" that rests on scientism, professionalism and system-based rules. The utopian vision of an "information society," the nationalist pride in China's technology achievement, and the shared experience of cohesion and unity enabled by communication technology contribute to the formation of a collective national identity, which in turn boosts political legitimacy, and defuses the conflicts and tensions that arise from rapid economic development and socio-structural changes.

What, then, are the implications of this study? What does the state's embrace of information technology inform us about how politics is conducted in China? To what extent does China's current "politics of technology" differ from the Maoist era? What

does the state's transformed exercise of control mean for media organizations and the general public?

6.1 China as a developmental state and the embrace of information technology

In his *MITI and the Miracle of Japan*, Chalmers Johnson invoked the concept of "developmental state" to characterize the role of the Japanese state played in Japan's extraordinary and unexpected post-war enrichment (Johnson, 1999, p.34). In this research, I would argue that in a similar way, the Chinese state had been central and indispensable in laying the groundwork of the communication and information networks, and in the promotion and construction of information technology. Specifically, I looked at the state's information technology policy during the reform and opening up period from 1978 to 2010. This is a period characterized by economic liberalization, decentralization and institutional fragmentation. In this light, it might be easy to conclude that the development of information technology in China followed the same way that the market economy worked in China: by attracting foreign direct investment, introducing the market to a previously strictly planned and regulated national economy, and reforming the institutional framework which would allow more power to flow to the hands of local administrators and business entrepreneurs. Research that looked at the telecommunications and media reforms in China has displayed a tendency to conclude that it is the market and the liberalized economy that breathed life into China's information industry and instilled vitality into a previously underdeveloped, technologically primitive field.

But in the case of information technology development in China, the state had assumed a much more active and substantial role than the market. The state makes key

decisions about how much capital goes into communication infrastructural construction, determines tariff rates of telecommunication services, regulates the profitability of telecom service providers, formulates the technology standards on which communication and information services are to be developed, and provides subsidies to universal services in geographically remote areas. In the development of communication and information technologies, the Chinese state is both a designer and an engineer, an organizer and an evaluator, a legislator and a market player. The fact that the state was present in nearly every stage of the information technology planning and construction process attests to the "strong state" model of telecommunications and information technology development in China, and the "strategic interests" it takes in making informatization a developmental priority.

China is by no means the only state that takes an active interest in constructing communication networks. Given their political significance, it is not unusual for communication and information technologies to be constructed and regulated as a "public utility". What makes the Chinese case of communication and information technology development worth examining, on the other hand, was that the state is not only actively involved in creating the hardware facilities of China's communication network, but also has made efforts to construct a rhetoric that guides and influences the use of communication technology. Beneath the appearance of acting as an efficient planner, organizer and network builder, the state is also particularly adept at creating the cultural and ideological environment that makes the introduction of certain changes smooth, natural and uncontestable. The active and systematic construction of the meanings of technology is integral to the success of the state's reform programs, because it allows the

state to substitute itself for society the definition of societal goals, and appoint itself as the "only and ultimate representative of people's interest".

In delineating the meanings of communication and information technology in China, the state has managed to tie the construction of the communication and information infrastructure with the objectives of "political construction." The term "construction" is widely used by state media and policy makers to describe the process in which the state sets up its system of political values, doctrines and beliefs. The fact that the term was employed in describing the process of building the technological and political framework of the post-Mao Chinese society illustrated the "constructivist" approach taken by the state to shape the "physical" as well as "spiritual" environs of economic development. It has aligned the "construction" of technology infrastructure with the "construction" of political ideals. The Internet, for example, was equated with the digital space of the "socialist harmonious society." It fulfils a greater role than setting up a digital economy. At the same time, it is expected to regulate social relationships, ease political tensions, close China's gap with the western world, and symbolically represent China's embrace of modernity and globalization. The meanings conferred on the Internet were far more than technological or economic. Through consistent and centrally choreographed programs such as the "government online project", the Internet becomes an extension to the state's power apparatus, a stage for the "politics of talk," rather than an alternative to social expression, public deliberation and dissent. The Internet, in such a developmental context, is first and foremost a political device, which is used to embody the state-sanctioned values, beliefs and interests.

China in the reform era is undeniably a developmental state, because it has identified "economic development" as its first priority and basis of legitimacy. As Johnson (1982) had pointed out, "a state's first priority will define its essence." In the thirty years of the economic reform, the essence of the Chinese state was economic development, or more precisely, economic development driven by technological modernization, in which information technology plays a leading and transformative role. The "developmental imperative" in Chinese political rhetoric cannot be better articulated or captured than in the following speech of Jiang Zemin:

> "Development is an irrefutable argument. It is a strategic principle we must always adhere to. This is not just a question of economy. It's a question of grave political importance…To continue improving the quality of our lives requires development. To increase our ability to manage risks requires development. To complete the reunification of Taiwan and mainland requires development. To make China an internationally respected power requires development. It is as simple as this: He who wants to make wishes must be rich."

A sense of "developmentalism" has pervaded China's post-Mao policy discourse, which, by Johnson's definition, is a "dominant developmental discourse on the necessity of industrialization and of state intervention to promote it." To Deng and his successors, development was the first and the last doctrine of China's economic construction. Anything less than it, and anything other than "developmental" would be considered a political anomaly. The developmental imperative translates into a practical question: It means that for the state, it has to find a way to define and measure the degree of progress, providing a map and a vision of where China is in its developmental and modernization path. In a way, to mobilize and organize the entire Chinese society around economic construction activities is not enough. A bigger and more important question is to create a

perception that China is "in progress," that it is moving on the right road. To do this, the state has to continuously set up new goals of development, and keep fulfilling them.

Compared with the goal of "four modernizations" from the Deng Xiaoping era, "informatization" offers something new and flexible for the interpretation of "progress". Economic benefits brought by information technology, such as creating jobs and distributing information to even out regional development gaps, certainly present a picture of "progress". At the political rhetorical level, it represents "a new developmental path" of achieving economic progress through technological modernization, a succession as well as aggrandization of the strategic importance Deng had previously laid on technology. At the same time, as the designer, planner and builder of the communication and information network, the state retains the flexibility and authority in interpreting the degree of success in China's "informatization" campaign. To do this, the state created specialized units such as the National Informatization Leadership Group, the China Internet Network Information Center, which worked together with the State Bureau of Statistics to regularly announce the degree of progress at various stages of the "informatization" construction. "Informatization," in this sense, has become both a means and an end to China's modernization plan.

Although in many ways the Chinese state in the reform era fits the description and classification of a "developmental state," there are areas in which it differs from this model. For one thing, the developmental state theorists posit a national bureaucracy as totally depoliticized, socially disembodied, and in rational pursuit of a self-evident national interest (Pempel, 1999). This is hardly the case in China. There are competing agendas and conflicting interests in the Chinese "informatization" move. Analysis of

China's telecommunications and media regulatory systems revealed that state agencies are in constant conflict with each other. The institutional frictions between the Ministry of Posts and Telecommunications and the Ministry of Electronics Industry, between the content regulator SARFT and the information industry regulator MII lent evidence to the fact that there is nothing "plan-rational" about the pursuit of the "informatization" goal. This has propelled the state to embark on a series of institutional restructuring campaigns, which aimed at consolidating differing interests, neutralize inter-agency tension, and unite these departments around the common goal of moving toward an information society. To what extent are these restructuring measures effective will only be revealed by time. But it did lead to further power consolidation in the telecommunications and information sectors, facilitating the state's control over communication and propaganda systems.

The developmental state theory was born as an explanatory model for the East Asian industrialization. In the developmental state model, one of the key arguments is that politicizing certain "economic" decisions may not only be inevitable, but also desirable (Chang, 1999). And technology has certainly made the "politicizing" process easier and manageable. It mediates as well as delivers the goals of China's industrialization plan. Through technology, the state is capable of coordinating changes, providing a vision of progress, restructuring its institutions, and managing social conflicts, which are the necessary functions performed by a developmental state (Chang, 1999). China presents an interesting case where technology is used to express the interests of the developmental state, which is not limited to promoting economic growth, but more fundamentally, in preserving its authority, building up a strong regulatory

regime, and enhancing its capacity to dictate and shape the policies on China's
telecommunications and media industry.

6.2 The new politics of communication technology and the political logic of

information technology development in China

Too often the development of communication and information technology in
China was identified as an economic driven project. The nationwide construction of an
elaborate and technically advanced communication network is usually rationalized on the
ground that an underequipped communication network would hold back China's
economic development (State Council, 1982). But besides the obvious economic
explanations, is there a political logic to the rise of information technology in China? To
what extent the state's rhetoric on information technology reveals or betrays its political
motivation for adopting information technology development as the master plan for
China's modernization is one of the central questions of this research. This question can
be analyzed in two parts. First is a comparison of the politics of communication
technology between the Mao era and the reform era, the latter I would refer to as the
"new politics of communication technology." The second would be the political logic of
the information technology construction.

Undeniably, communication technology has always been an area that receives
special attention and differentiated treatment in Chinese politics. Mao Zedong had
attributed the victory of the communist revolution to the Party being in close contact with
the people, and through consistent and enduring communication campaigns, creating a
united political coalition against the nationalist government (Mao, 1957). Effective
utilization of communication technology has stood at the heart of the state's governance

and transformation of society, in its ability to set collective goals, engineer public opinion, and mobilize public support. To the Chinese central leadership, communication technology is first and foremost a political technology.

For totalitarian political orders, there is a close connection between the state and modern technology. A totalitarian regime is typically theorized as an autocracy based upon modern technology and mass legitimization (Friedrich and Brzezinski, 1956/1966). Control over communication technology is one of the key features of totalitarian regimes. Under the totalitarian order of the Maoist era, the state was the primary and practically the only constructor of China's communication facilities. The state exercised a paternalistic influence over how communication technologies should be deployed, and on what kinds of contents should be carried and distributed by these technologies. Technology policy of the Maoist time was characterized by its preoccupation with the "mass line", namely, that science and technology should not be restricted to the hands of a few technical experts and elites. The Maoist state encouraged and actively pushed for the widest participation of the general public in science and technology programs, thereby eliminating the gap between mental and manual labor, and making the public feel they're the masters of the technological environment (Lee, 1973). But the style of participation, however, is more concerned with implementing than defining policy objectives.

Therefore, in the Maoist China, the development of communication technology followed a path that mirrored Mao's "mass technology" approach. On one hand, the state encouraged grassroots participation in political and social programs through communication technologies. The aggressive push for radio and television network, and

the construction of a village-level loudspeaker system in the 1950s and 1960s lends evidence to the strategy of creating an extensive, wide-reaching communication network to promote the interests and agenda of the Party (Liu, 1975). One the other hand, "participation" means carrying out or implementing the state's ready-made program initiatives. The public was shut out of the policy debate and formulation process. Communication technologies in the Maoist time worked as the "organ" of the state, mobilizing and activating support for the state's programs, while creating the appearance of "democratic" participation with state defined objectives among a wide range of citizens.

In the post-Mao development of communication technology, the politics of communication technology evolved in a different direction. Through reforms in the media and telecommunications sectors, the state had decentralized some of its power to local levels, creating a more fragmented and commercialized industrial structure. This has led to a transition from the totalitarian role of the state in dictating the finance, operations and editorial content carried by media and telecom companies. At the same time, the state compensated for the loss of control by creating a recentralized regulatory system, and setting up strong, consolidated state-owned media and telecommunications firms. The state was also the largest beneficiary of a commercialized, market-oriented media and telecom system. By 1997, China Telecom, the national monopoly on telecommunications service, had a gross profit margin of 15%, and emerged as the state's second largest tax revenue contributor after the lucrative tobacco industry (Chen, 1999).

Under the new environment of technological and structural developments, what can be seen in the Chinese politics is an increased "play of technology". Cable technology, for instance, was used to extend the influence of state-owned TV stations and large, regional media conglomerates. Satellite communications and digital TV were used in the 1990s to limit the reach of local, independent stations. Through technical upgrading and standardization, the state had successfully eliminated independent Internet service providers (ISP) and the so-called "illegal Internet cafes". The exercise of control through technological measures was found to be more effective than directly outlawing content and restricting behavior, because it allows the state to accomplish its political objectives without articulating or explicitly revealing them.

In contrast to the decentralization and fragmentation of political power in the overall economic reform, what can be seen in the area of communication and information technology development is a recentralization of political authority. Notably, the recentralization of authority has increasingly come to ride on the technological rationale, through various forms of technical standardization and upgrading. This technological rationale has allowed power to be continuously generated from the top, consolidating the institutional fragmentation brought by reforms in the telecommunications and media sector. In this process, technology was gradually incorporated and built into China's political logic. Through technology – communication and information technology in particular – the government can extend its promise on continued economic growth and a well-connected, egalitarian welfare state. Technology has provided the blueprint and the execution plan of realizing such promises. It reveals the vision of an imagined

technological future, while at the same time, prescribing the technical process and the justifiable causes which will lead to the fulfilment of these political ideals.

6.3 The transformed exercise of control

In his study of the developmental states, Alexander Gerschenkron (1968) suggested that late industrializers would feel strong pressures toward the centralization of the institutions of both capital and administration. This pressure might help explain the Chinese state's efforts at recentralizing its control over the development of communication and information technologies. Part of the pressure behind the recentralization effort was that it found the bureaucratic system of regulation that it inherited from the Maoist time was no longer effective. The convergence of media technologies has rendered the division between content and technology regulation increasingly hard to define. To regain its control of a critically important industry and technological field, the state must create an effective and agile regulatory system that can replace the original system of bureaucratic, regimented control. Another important consideration was that the state has come to the realization that the practice of propaganda, ideological indoctrination and forceful hand of administrative intervention can no longer be used in the marketplace and a liberalized economy. These considerations have resulted in a reformed regulatory system of China's communication, media and information industry, and a transformed exercise of control over the content and structure of China's communication network.

In the course of reforming the bureaucratic system that governs the communication and information technologies, the state has created a system that does not rely on administrative power, but on scientism, professionalism, and the role of the

marketplace. The utilization of the market mechanism in achieving its control and regulatory objectives demonstrated that state control and the market may not necessarily go against each other. The market rules of profitability, efficiency and scalability can be used as "hard lines" that eliminate the existence of small and independent media outlets. The creation of large, regional media conglomerates was justified on the ground of enhancing media "professionalism," while the unification of technical standards exemplified the state's emphasis on "scientific development and decision making." They have all contributed to the reduced role of direct control in the planning and construction of communication and information technologies.

The transformed exercise of control can be seen as a response to the rise of the market economy and the importance of technology-driven growth in China's developmental plan. In retrospect, the introduction of reform has not only shifted the state's work focus from ideological propaganda and class struggle to economic performance and technological advancement, but also has affected the ways in which things are conducted in Chinese politics. What has come to define China's political process is a sense of "technical rationality," where policy proposals must be framed and worded in technical terms, and the definition, consideration, and solution proposed to resolve a policy issue is increasingly colored by the spirit of "scientific management." This change is necessary, and to a large extent inevitable, because it is difficult to persuade people to continue believing in the ideologies of class struggle, and the capitalist-socialist clash, particularly in the vision of a global marketplace. For the effectiveness of the reform programs, a platform of consensus must be established to supply, essentially, a set of procedures of redefining societal goals, one that enhances the

role of rationality (Janowitz, 1975). This should be a platform that is amenable to changes, and at the same time, does not fall into the naivety of either idealism or materialism. Technology seems a well-fitted answer to all these questions. While it was chosen as the mediating platform between China's political ideals and social reality, and in negotiating the space between future and present, technology enabled power to flow to and consolidate in the hands a small group of people, and paradoxically, creating a perception of fairness, impartiality and autonomy that seems to bring China closer to its democratization ideals.

To media institutions, the shift from direct intervention to technological, system-based control does not mean that the strength and extent of control have been changed. Rather, the transformed exercise of control suggests that the state can easily interfere with the operation and content of the media organizations citing technology-related considerations and concerns. This, indeed, has been a practice in the past few years. In 2011, for example, the state censured the Chinese search engine giant Baidu for "manipulating its search results" and "misdirecting consumers". The hidden intention of the move, however, as some had pointed out, was the state's increased concern over the power of microblogging (Ryder, 2011; Chao, 2011). Understandably, the attack on Baidu was directed at its technological reliability and its violation of market rules, not its microblogging service. The incident reveals an emerging trend in China's media regulation: to curb the influence of a media organization, the state only needs to problematize its technological performance, question its business integrity, and then proclaim itself as the enforcer of technology standard and market rules.

As the state continues to practice system-wide, technology-mediated control, the Chinese media will learn to work with uncertainties and scanty, ambiguous legal guidelines. A chief characteristic of system-based control is that the state communicates the idea of what is acceptable and what is not acceptable for news production without having to spell out the rules. When there are no clear boundaries of what is acceptable, the state may elect to interpret the ambiguous guidelines to its own advantage. For example, in those political sensitive times, such as leadership transitions, the state may signal the tightening of control by punishing reporters who had "gone too far". In other times, it might relax its grip on the media, creating the impression of increased political tolerance and press freedom. In addition, the absence of clear legal rules suggests that it is less likely individuals will find and play on the loopholes in the legal procedures. In this light, it would not be surprising that since 1949, despite repeated proposals to pass a national law on the media industry, not a single and specific media law has been legislated in China. Similarly, despite the rising importance of the telecommunications industry, there has been no national legislation in telecommunications. The lack of formal legal control has left China's media and telecommunications industry largely to the disposal of state administration and intervention, which facilitates the exercise of "scientific management" and soft control.

Between the direct coercion of an authoritative state, and the political ideal of "rule by law," what can be seen in China's media and telecommunications industry is a direction toward "technological control". Namely, technology has become the mediating agent between two models of state control: the "rule by people" and the "rule by law". State control exercised through technology may incorporate the elements of both

"people" and "law", while opening the space for policy adjustments, debate and negotiation. Technology offers a set of operative procedures rather than a given position in solving conflicts, thereby making it easy for the state to construct it as a system of "legitimate norms". Indeed, the goal of exercising control through technology cannot be more effectively accomplished than creating a "technological society," that is, a society that has high respect for "scientific decision-making" and a society that takes technology as the universal regulatory agent of social relationships. The policy rhetoric on communication and information technology reflects the state's efforts at constructing such a "technological society". China's developmental drive, and the fading influence of political ideology have made such a transition easier, and far more than just a temporary trend.

6.4 The future of the politics of communication technology

In any given society, there is no doubt that technology will be connected and integrated with politics, and it is not a phenomenon unique to China. However, considering that Chinese politics of communication technology arises out of the legitimacy crisis and developmental drive, and that media and communication are critical components of the Chinese political system, the politics of communication technology illustrates the changes that has been taking place in Chinese political processes in the course of the economic reform and opening up. In the face of pressing need for economic growth and the search for sources of political legitimacy, the choice of communication and information technology as a driving force in China's developmental plan is more than an accidental decision. And the informatization drive is an even more pronounced move in this direction. Although a technically sophisticated and comprehensive

communication framework has already been deployed in place, it doesn't mean that the state will retire itself from the position as a central network planner and builder in any time soon. The institutional structure and technology foundation that had been laid out in the infrastructural construction will secure the state's dominant position in the media and telecommunications sector.

The Chinese politics of communication technology lends evidence to the observation that the state and the central Party are extremely adept at politicizing technology to suit their own purposes. The tendency to "politicize" nearly every subject of Chinese public life suggests that when evaluating the impact and significance of a certain form of technology, political interests must be put before economic interests, and that one should always take into account the political endowment that precedes and underlies these technological changes. In the midst of using economic and technical rationale to account for the development of communication and information technology in China, it is probably time to put politics back in. To the Chinese authorities, the question in front of them is simple, whether to approve or to pursue a certain technology policy depends on whether it can be used to enrich and empower the state, not the public, or the society. But the different interests of the state and the society have been cleverly united by repeated communication efforts and rhetorical construction. It is only by scrutinizing the meanings that have been conferred on technology that one gets closer to unveiling the state interests and agenda, and through these realizations, the public may start thinking about what freedom is, and what to do with it.

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