1 From Iron Fist to Somewhat Invisible Hand

In 1980 there were 2 million telephones in China, by 2000 there were 230 million, and by 2005 there were 744 million. How did this happen? The simple story is that the government abandoned the command economy and embraced a socialist brand of market economy, and telephones boomed in China like they did in most countries around the world. The back story, however, is more complex. As a capital-intensive network industry where just getting competing operators to agree to complete each other's calls often requires government guidelines, telecommunications service markets are characterized by extensive regulation, even in the most liberal of economies. For a socialist market in transition, the shift from iron fist to invisible hand is challenging. In China, the liberalization of the telecommunications market is a prime example of the planned economy discarded and the piecemeal construction of an uneasy foundation for a rules-based market economy. To add a further twist to this change, the telecommunications network in modern society is the common carrier of ideas and information. Because ideas and information are not ideologically neutral, alongside China's liberalization efforts for the network are companion efforts to control the content of communications across the network. Although many of the challenges China faces in liberalizing its telecom market mirror those of other countries, China's tactics for regulating the content of communications services are unique.

As Barry Naughton and Dali Yang document in their recent book, *Holding China Together: Diversity and National Integration in the Post-Deng Era*, there are two main strands in the current research on the Chinese economy. One strand documents the deconstruction of centralized national power and the disintegration of the economic and social governance, focusing on the rise of provincial and local authorities, rampant problems of corruption, the emergence of informal or illegal markets, and other developments that suggest that the fabric holding together the nation is torn. The second strand documents the rise of China as a great power, highlighting its rapid economic growth and its share of the global market, whether in exports or imports, in either goods or services.[1] As Naughton and Yang argue in *Holding China Together* and Yang argues again in a separate book, *Remaking the Chinese Leviathan: Market Transformation and the Politics of Governance in China*, neither is the national state disappearing in China, nor is it yet a great power, but rather it is still in the midst of transformation. In some respects, the central state's goal is to limit the role of government; in other respects, the central state's goal is to extend its power—for example, in building regulatory frameworks to oversee industries that were previously run as part of the government.[2] The telecommunications sector is one of these industries in which the role of the state is in metamorphosis.

Currently, there are two major explanations for what drives economic reform. As put forward in 1988 and 1992 by Lieberthal, Oksenberg, and Lampton, one is that government bureaucracies vie for resources, prestige, and authority, and the final policy decisions that emanate from the government are essentially the negotiated compromises among these parties.[3] Although this explanation for Chinese government policy has fallen out of favor recently as more of the economy escapes central planning, in the relatively highly regulated sector of telecommunications, it is actually still quite relevant. A second explanation put forward by Barry Naughton is that once unleashed, the economic reform process in China is fundamentally self-reinforcing. A state-owned monopoly is broken, new actors enter the market, prices begin to reflect market supply and demand, state-owned enterprises must adjust to compete, and the cycle begins once again.[4]

These two explanations actually nest one in the other, as Xu Yi-chong argues in a study of China's electricity reform.[5] Telecom re-

form also bears out this argument, as does an examination of other network sectors in China, such as banking and airlines. At the heart of each of these sectors is a former monopoly that is divided into smaller enterprises. However, these smaller enterprises remain giants in the sector compared with private companies that may have entered. The giants often represent the commercial interests of various government ministries, all of which must arrive at some consensus for any major policy reform to go forward. These bureaucracies compete to achieve policies that are most advantageous for themselves and the industries they represent. However, nonstate forces are continually changing the context in which these bureaucratic negotiations take place; they are the forces that push forward the reform cycle. Markets expand, innovative services arise, and consumers become more demanding. Policy reform, often in the case of network industries appearing in the form of increased government regulation, is required to meet the demands of the new context. If this does not happen, failures follow: power shortages occur, phone calls fail to connect, bank lending dries up, and planes fall out of the sky. Those familiar with life in China in the last twenty-five years will recognize all these travails. These highly regulated industries differ from others, such as manufacturing, where in a liberalized market the hand of government is nearly invisible.

Up until 1994, there was a monopoly in telecommunications services; competition since then has brought more services and cheaper prices.[6] The government has allowed new firms to enter the market by two means: on rare occasions, by issuing a license to a new firm, and, more frequently, by slicing up an existing operator into several bits. Only a few countries in the world, such as the United States and Brazil, have been as vigorous as China in divesting incumbent telecom operators. The Chinese government split China Telecom once in 1999 into four companies, and again in 2002 into two companies. In 2007, rumors swirled again about the possibility that China Unicom might be split. Past reorganizations of companies by the government have created expectations of future ones.[7]

In this regard, telecommunications policy reform has mirrored reform in several other sectors of the Chinese economy. In the 1980s, the airline monopoly was devolved into regional operating bureaus, and new companies were permitted to enter.[8] Also in the 1980s, the People's

Bank of China was designated as the central bank, and four other banks were separated from it.[9] In the electricity sector, change occurred more recently. After a period of consolidation, the main State Power Corporation was split into several regional units in 2002.[10] Although this divestiture of national monopolies is unusual compared with other countries, within China it is a regular phenomenon. This is shown in detail in Chapter 4, which explores the entry of new firms into the market and discusses the contending forces and dramatic ministerial struggles that led the government to break up China Telecom twice.

Paralleling the dismantling of monopolies is the reform of regulatory structures. Between 1990 and 2000, the government offices with responsibility for communications services went from three ministries to one ministry, plus one administration with reduced status; the ministry that won the battle was separated from the telecom operator, reducing its staff of hundreds of thousands to a couple of hundred. These transformations of the regulatory structure represented victory for the telecommunications ministry over the electronics manufacturing ministry and, to a certain extent, over the television and radio ministry. In the meantime, technically above the fray but still deeply involved in it, were various transformations of offices within the State Council, a higher government body than the ministries with oversight in this policy area. Competition among government ministries to launch their own operators into the telecom market was fierce because the market was so lucrative. In other sectors of the economy, similar regulatory transformations have occurred. In the airline sector, the Civil Aviation Administration of China (CAAC) was separated from airline carriers in 1985.[11] In 1995, a new banking law separated commercial banking from the central bank, the People's Bank of China, and established the China Banking Regulatory Commission.[12] In electricity, the State Economic and Trade Commission was established as a comprehensive regulatory body for the sector in 1997.[13]

Furthermore, recent regulatory reform of network industries is not unique to China. Worldwide, there has been a rise in regulatory agencies, reflecting a fundamental reassessment of the usefulness of regulatory oversight for some aspects of economic development. In 1990, there were only thirteen telecom regulatory agencies in the world;[14] by 2005, there were over 130 such authorities.[15] This is part of

a broader global trend: the rise of regulatory agencies in a range of countries across a range of sectors, such as banking, water, and power.[16] Chapter 3, on the evolution of the policymaker, places the rise of the Ministry of Information Industry in the context of broad administrative reform in China and evolving international consensus on good regulatory practice.

For a telecommunications regulator, once a monopoly is broken, one of its first tasks is to deal with prices. At the wholesale level, this is known as interconnection. Interconnection policy governs the settlement of traffic and money between operators. When a subscriber of Operator A wants to telephone a subscriber of Operator B, this is possible only because the interconnection regime in the market governs how and at what price that telephone call will be handed off from one operator to the next. Monopoly markets have no need for an interconnection regime. Therefore, the government's decision to move from a single to multiple operator environment means a new interconnection regime has to be constructed. In recent years, the interconnection regime in China has been evolving with difficulties. China Telecom, as many incumbent telecommunications operators do, resisted interconnection with competitors in order to protect its profits. The two state-led breakups of China Telecom rose in part out of the company's unwillingness to comply with the interconnection regime. The success of the interconnection regime thus depends on the ability and will of the regulator to intervene and reflects the government's commitment to a competitive telecommunications market.

Although when compared with other countries China's interconnection regime is still rudimentary and has considerable room to evolve, it is quite advanced when compared with policy developments in other sectors of the economy. As of 2005, interconnection between regional power grids had not been resolved. The implication is that because use of natural resources cannot be optimized over large areas and because major generation sources are separated from major usage areas, more investment in power generation is required if grids remain separate rather than interconnected.[17] Although interconnection in telecommunications appears more advanced than in China's other network sectors, as will be shown in Chapter 6, one of the issues at the heart of competition policy is the ministry's struggle to enforce its regulations on operators

more accustomed to blunt instruments of government power than to following administrative rules.

Although in many respects the telecom sector is similar to other network sectors in China, it differs in that its service is often not ideologically neutral. Electricity in and of itself is not rightist or leftist. Money transferred from one bank to another is not ideologically fraught, although the lending of it might be. In telecommunications, the service being transmitted is information. An essential aspect of political power is controlling the ideological debate, which depends significantly on the communications of those who govern to those who are governed. Although such sectors as electricity, the airlines, and banking are all politically sensitive industries, telecommunications is especially so, and the limits on nonstate and foreign actors in the market have been more strict in the telecom sector than in others. Compared with other countries, China has been especially keen to involve its propaganda apparatus in the development of the communications network, an approach with long-term political implications. In other sectors, such as electricity, the airlines, and banking, there seem to be no parallels.

For example, new technology has enabled both cable television and telecommunications networks to offer quite similar services. Both can provide telephone and Internet service; in many countries, television service is available over telecom networks. In China, the convergence of cable television and telecommunications networks touches on questions of programming and content, which are the province of the State Administration for Radio, Film, and Television (SARFT) and the Chinese Communist Party's Propaganda Department, responsible for ideological discipline nationwide. Whether telecommunications interests will let the SARFT companies enter the telecommunications service market without concessions similar to those allowing telecommunications companies into broadcasting remains unclear. This tension curtails China's telecommunications industry from straightforwardly taking advantage of the latest technology developments. Chapter 3 examines the nexus between China's communications market and the government's ideological framework.

Reflecting its interest in controlling the content of communications, the state retains management of the telecommunications networks. Although the government has allowed some competition, only

state-controlled operators are permitted to compete. Furthermore, China's approach toward foreigners interested in the communications services is to attract maximum capital while minimizing managerial influence. Prior to joining the World Trade Organization (WTO), the Chinese government permitted certain limited foreign investment in telecommunication services in 1994 in China Unicom. However, the government forced out these investors beginning in 1997. Subsequently, China's commitments under the WTO agreement established a formal map of how limited foreign investment in telecommunications would be permitted over several years' time. Even the most open of China's commitments does not permit foreign control over network operations. Today, all foreign investment in China's major telecom operators has been portfolio investment through shares offered on foreign stock exchanges.

In contrast, in electricity, the airlines, and banking, entry requirements for private investors and for foreign investors in practice appear more relaxed. In the airline industry, foreign investors have been permitted to hold minority shares in carriers since 1994.[18] Purely privately owned carriers Okay, Spring, and United Eagle Airlines received licenses in 2004.[19] In the electricity sector, private and foreign investment has been permitted in principle since 1994; the first foreign investment occurred in 1996.[20] Although there are more restrictions on foreign investment in the electricity grid, foreign investment in electricity generation is encouraged. In banking, foreign investment is permitted in the four largest national banks. In 2005, large foreign banks and investment groups purchased significant, if minority, shares in both China Construction Bank and the Bank of China. Among smaller banks in China, joint ventures are common, and foreigners may have managerial influence, such as in the Shenzhen Development Bank, which has foreigners as both chairman and president.[21] In telecommunications, such extensive participation by foreign investors in management of carriers is not under consideration. Chapter 5 discusses in detail the deep ambivalence of the state in allowing outsiders to manage its communications networks.

The debates on China's regulatory reform, monopoly breakup, wholesale pricing, and foreign investment are all stories that largely focus on large bureaucracies negotiating with each other on the next policy

step. However, it is also essential to examine how policy reforms have brought about changes in the larger context in which these negotiations were taking place, changes which themselves ultimately have a bearing on future reforms. In telecommunications, consistent with Naughton's theory, price reform is a key factor in propelling reforms in a self-reinforcing way. In addition, technological change has a similar effect, especially as a major factor in changing costs and, therefore, prices.

In principle, the government regulates the prices that consumers in China pay for voice telecommunications services. Usually, there is a single price or a single range of prices, which should apply nationwide for per minute local calls, domestic long distance calls, and international calls. Likewise, there are prescribed price ranges that consumers should be able to obtain for wireless service packages. General pricing rules are set in Beijing by the Ministry of Information Industry and are implemented at the provincial level by provincial communications administrations. To a significant degree, Beijing has been successful in moving away from a pricing regime that uses international and long distance calls to subsidize local calls, a major challenge not unique to China and an important step toward a competitive market. However, there is some evidence now that in some segments of the market, companies are offering service packages that more closely cater to the demands of consumers, rather than following the pricing rules set by the government. Although consumers may not be organized into a single lobbying group, by voting with their wallets they have an impact on policymaking.

A parallel example of the government's loss of control in another sector is the airline industry's price wars of the 1990s, once supply met demand for air travel. In 1998, for example, carriers began offering 40 percent discounts on domestic fares. The government's response was to ban discounts, increase ticket prices, and prohibit carriers from purchasing new aircraft for two years.[22] In electricity, user tariffs are set below cost, discouraging investment and contributing toward power shortages.[23] Tariffs in telecommunications in China were also once set below cost, but policy reforms in the 1990s enabled operators to recover investment costs, and network build-out expanded. The history of several network industries confirms Naughton and Yang's argument that once price reforms begin, they can become self-reinforcing. Chapter 7 is

an overview of retail pricing of telecommunications services in China and provides insight into the future flexibility that will be required in regulation.

Technology is still changing quickly, and the regulator's ability to adapt to these changes affects the future development of the market. One such example is Internet Protocol (IP) telephony, which emerged in the late 1990s as a new technique for delivering voice signals over the telecommunications network. Only after losing a lawsuit and following considerable public discussion did the Ministry of Information Industry permit experimental launch of IP telephony service in China in 1999. When introduced, the service became cheap and popular very quickly and several companies competed to offer the service to the public. A second example is "Little Smart" wireless phones, an old but inexpensively deployed technology that was introduced to China in the late 1990s. This technology allowed an operator to provide consumers with a cheap wireless phone service built on the foundation of a wireline telecommunications network. The state's initial reaction was to ban the service, but in the face of its widespread popularity, the telecommunications ministry gradually ceased declaring it illegal.

In other sectors, popular resistance to regulatory constraints has also spawned informal markets. In electricity, when power is unreliable, companies invest in their own electricity generation.[24] In banking, when caps on interest rates force bank lending to dry up, non–bank lending by private parties to each other takes off.[25] When such unregulated parallel markets emerge prominently, the government must either adapt or look as if it has ceded authority in that economic sector. That risk is often an impetus for further reform. Chapter 8, on IP telephony and Little Smart service, takes a closer look at how technological change enables the growth of informal sectors that, in turn, force the liberalization of government policy.

Although a detailed comparative analysis across China's industry sectors is beyond the scope of this investigation, this study of the telecommunications market does contribute to an understanding of the nature of economic reform in these network industries, which are the lifeblood of modernizing economies. Through the next several chapters, a picture emerges of the policymaking scene in China, as encapsulated in Figure 1.1. The major actors are large bureaucratic organizations. In the

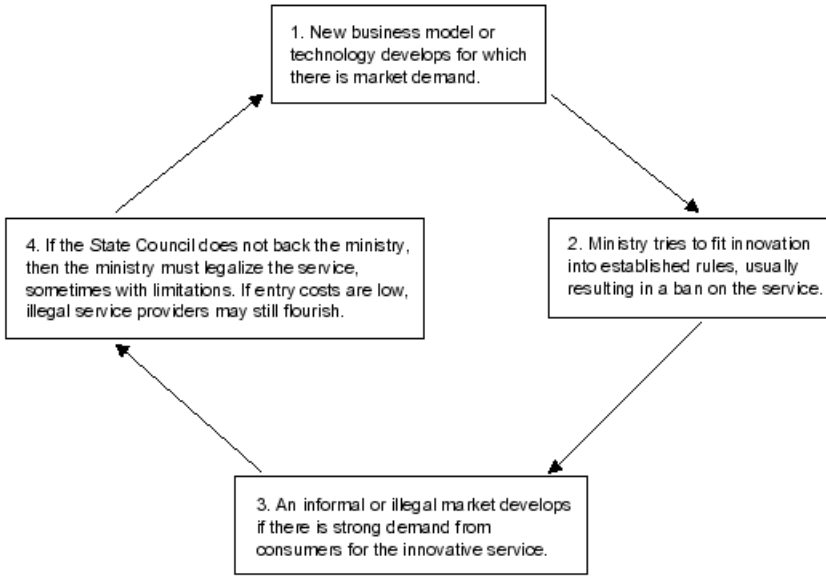

FIGURE 1.1 Government response to service innovation

communications area, these are still defined by specific industry interests. Other government organizations, such as the railway and the television bureaucracies, are backers of state-owned companies that compete with telecom ministry-backed operators. Each unit pursues its own interest, some economic and some ideological. The State Council is responsible for brokering compromises. However, outside this tight circle are forces that alter the relative strength and importance of the bureaucracies. Technical or business innovations that serve customers better can give some organizations a competitive advantage over others, altering the balance of power among actors negotiating for policy outcomes.

The data collected for these case studies are from individual interviews I conducted, from a variety of meetings and conferences, and from news media and academic publications in the United States and China, in both English and Chinese. Between 1996 and 2007, I worked in the International Bureau of Federal Communications Commission (FCC), the communications regulator for the United States, during which I led, organized, and participated in dozens of meetings with hundreds of Chinese officials and business people. All the views in this

book, of course, are my own and do not reflect the views of the FCC. During three extended trips to China in 2002 and 2003, I conducted a series of interviews expressly for this book.

The last twenty-five years in China have been a period of enormous change in communications policy and regulation. These are the policies that govern the infrastructure on which ride cell phones, e-mail, and the whole range of Internet services. These services seem so new that it is possible to forget that they were preceded by a whole range of communications services—from message couriers to postal mail. Chapter 2 thus begins with a history of the telegraph in China, in which the concerns of today are certainly foreshadowed.