

# Market Forces or *Qian Gui Ze*? Interpreting Market Behavior in the Chinese Telecommunication Industry

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Paper presented at the 35<sup>th</sup> Annual Research Conference on Communication, Information, and Internet Policy (Telecommunications Policy Research Conference), September 27~29, 2007, Arlington, VA, USA.

# Market Forces or *Qian Gui Ze*? Interpreting Market Behavior in the Chinese Telecommunication Industry

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*Abstract.* When it comes to a product market where competition is supposed to be among firms who share a single parent – a government agency as dominant shareholder, as is the case in China’s telecommunication industry, standard economic theory offers little help in interpreting market behavior and its consequent market outcome. In China, economic liberalization with political constraint has led to distortions of market conduct, including deviation of firms from profit maximization and regulators from public interest. In the case of telecommunications, the incumbent operators, all of which are government-dominated SOEs, have demonstrated somewhat peculiar behaviors toward such arenas as price rivalry, infrastructure investment, network interconnection, and universal service obligations. These behaviors have proved to be pro-efficiency in some cases but anti-efficiency in many others. Despite the possible variance in underlying incentives, one common characteristic of these behaviors is that they all seem to be influenced by an “implicit law” or *Qian Gui Ze* (“QGZ”) which is imbedded in the current socio-economic system. Unlike a regular explicit system of rules and laws which are relatively easier to understand, this “implicit law” is difficult to fathom. One way to address the issue may be to take a systematic institutional perspective. Based on previous work in this field, this paper tries to synthesize the unique institutional endowment which can have direct or indirect influence on the market conduct of Chinese telecom firms. A two-tiered analytical model is developed in this regard which integrates both “explicit” (formal) and “implicit” (informal) sides at both the economy and industry levels. Particular attention is paid to the evolution of the QGZ and its implications in interpreting market behavior as well as industry performance. Conclusions include that one-sided competition reform in China has not led and cannot lead to sustainable, genuine and meaningful competition in telecommunications in the absence of a self-enforcing formal mechanism of institutions and the development of a parallel market-oriented socio-cultural environment. Second, the current socio-cultural environment itself has been a direct consequence of the one-sided reform and improvement will not come before further movement in political reform. Finally, even if there is a level of competition, it is mostly neo-institutional competition, rather than neo-classic competition. In this sense, the mission of economic reform faced by China seems not merely to cease at neo-classic market reform, instead, China faces the challenge of neo-institutional market reform in which firms are to become real market players under a scientifically designed self-enforcing institutional environment.

*Keywords:* Telecommunications; Market behavior; Industry performance; Institutions; Economic transition; China

*JEL classification:* L96, L5, O17

## I. Introduction

### 1. *Competition Reform: the “Chinese Way”*

China decided in 1992 to eventually move to a market economy right after Deng Xiaoping’s Southern Tour remarks<sup>1</sup>. Before that, even with the previous decade of reform, the economy remained a highly centralized one, operating with planning and commands from government at different levels. In its effort to build the so-called “Socialist Market Economy with Chinese Characteristics”<sup>2</sup>, China’s government is first encountered by the challenge to separate

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<sup>1</sup> Deng Xiaoping, “*Main Points of Remarks Presented in Wuchang, Shenzhen, Zhuhai, Shanghai, etc*”, available at <http://www.oklink.net/lszl/dangdai/dxp01.html> (in Chinese, accessed August 1, 2007)

<sup>2</sup> Jiang Zemin, “*Speed-up the Steps in Reform, Opening-up and the Construction of Modernization to Achieve More Triumphs in the Cause of Building Socialism with Chinese Characteristics*” (speech, First Session of the CPC’s 14th Congregation, October 12-18, 1992), [http://news.xinhuanet.com/ziliao/2003-01/20/content\\_697148.htm](http://news.xinhuanet.com/ziliao/2003-01/20/content_697148.htm) (in Chinese, accessed March 1, 2-007); CPC Central Committee, “*The Decision on Various Issues Concerning Building Socialist Market Economic System*” (official document, 3rd Session of the 14th Congregation of the CPC, November 11-14, 1993), <http://www.people.com.cn/GB/shizheng/252/5089/5106/5179/20010430/456592.html> (in Chinese, accessed March 1, 2007)

government functions from business operations. In so doing, a large scale enterprise shareholding-reform was initiated nationwide and property rights reform has since become government's top agenda and drawn extensive public attention domestically and abroad.

The objective of property reform aims to transform enterprises into genuine market players whose decisions are based on businesses' concern over return on investment, or profit maximization.<sup>3</sup> By means of property reform, most original state-owned-enterprises (SOEs) were restructured into shareholding companies with shareholders other than the government. These reformed former SOEs, in spite of rather diversified ownership, remain almost without exception government dominated in terms of capital share. Accordingly, board members of these reformed SOEs are still nominated and appointed by the government. As a result these companies can still be referred to as SOEs even after the property reform. The constitution of the board of directors is intended by China's government as a liaison point (interface) where decision rights (or principalship) are handed over from the government to companies. By internalizing principalship into the businesses, reformed SOEs are supposed to take full responsibility for their operation and development, such that they compete as market players.<sup>4</sup>

Following the trend of reform, China's government began a series of structural reforms in the telecommunications industry, first signaled by the opening up of nine non-basic services in 1993 and the entry of China Unicom in 1994, followed by the separation of the regulatory agency from businesses in 1998 and by two rounds of divestitures of the former China Telecom in 1998 and 2002.<sup>5</sup>

One striking characteristic of China's market reform lies in the fact that economic reform is executed with fundamental political regime remaining untouched. Meanwhile, the government is still the majority and dominant shareholder of the businesses in most cases.<sup>6</sup> This gives rise to a number of problems in terms of corporate governance, market competition as well as industry regulation, which creates the following concerns:<sup>7</sup>

- Can economic liberalization under conditions of political restraint really lead a market-driven economy?
- Can meaningful competition really take place in an economy with majority state-ownership?
- Can structural reform in an industry with majority state-ownership such as telecommunications in China really lead to genuine and effective competition?

## 2. *Has Telecom Reform Led to Meaningful Competition?*

Fourteen years after the beginning of structural reform, China's telecommunications industry has transformed from a regulated monopoly into a regulated oligopoly featuring six nationwide carriers: China Telecom, China Netcom, China Mobile, China Unicom, China Railcom, and China Satcom.<sup>8</sup> All of the incumbent carriers are government-dominated or owned in terms of capital

<sup>3</sup> According to the central government, the objective of reforming the state-owned-enterprises (SOEs) is to transform them into entities with self-operation, self-accountability, self-development, and self-constraint. See, State Council, Order, No 103, 1992, "*Regulations on the Transformation of Operation Mechanisms of the State-Owned Industrial Enterprises*," available at <http://www.chinaacc.com/new/63/74/1992/7/ad65889011132729913906.htm>

<sup>4</sup> *Ibid.*

<sup>5</sup> For detailed description of structural reform in China's telecommunication industry, see Jun Xia, 2006, "*Head-to-Head or Hand-in-Hand: Does Structural Reform Have Led to Meaningful Competition in China?*" The 34<sup>th</sup> Telecommunications Policy Research Conference, Arlington, VA, USA

<sup>6</sup> Government ownership accounts for roughly three quarters of the national capital stock. See, e.g., National Bureau of Statistics of China, "*China Statistical Yearbook 2005*," [http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20060227\\_402307796.htm](http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20060227_402307796.htm), and <http://www.stats.gov.cn/tjsj/ndsj/2005/indexeh.htm> (in Chinese, accessed Nov. 23, 2006).

<sup>7</sup> See Xia, 2006, "Head-to-Head or Hand-in-Hand," *supra* note 5

<sup>8</sup> This number does not include the Radio, Film, and Television (RFT) network. China Telecom and China Netcom are still wireline monopolists in their respective regions. Both China Mobile and China Unicom hold a mobile license. See Xia, 2006, "Head-to-Head or Hand-in-Hand", *supra* note 5.

structure.<sup>9</sup> Now that competition is supposed to happen between providers of the same service as well as cross-services and carriers are supposed to act as market players under effective government regulation, it is rather complicated when it comes to carriers' market conduct regarding such decisions as market entry, pricing, interconnection, network deployment, universal service provision, and other issues. Although it might be a lengthy task to describe the status of competition in China's telecom industry, one quick impression is that competition, if any, is still limited and carriers' conducts are distorted and generally not market-driven.<sup>10</sup>

Market behavior in telecommunications has proved to be pro-efficiency in some cases but anti-efficiency in many others.<sup>11</sup> For example, price rivalry in mobile service developed in recent years, although still limited is contributing not only to exponentially expanded nationwide subscriber base but also to the development of competition in related segments.<sup>12</sup> On the other hand, carriers' orientation towards interconnection and network deployment are intuitively mostly anti-efficiency, as demonstrated by the strenuous difficulties witnessed in interconnection, particularly in early 2000s, and duplicate infrastructure investment among carriers.

The limitation of price rivalry is demonstrated in both wireline and wireless markets. Over the past several years, particularly since the introduction of Xiao Ling Tong (XLT) local wireless technology, price competition in the wireless sector is developing to such an extent that in some areas carriers are frequently changing tariff schemes in response to competitors' undercutting strategies. Despite this general competitiveness, wireless service players still differ from one another in market positions, with China Mobile enjoying the highest profit margin and XLT the least, if any.<sup>13</sup> Meanwhile, China Unicom seems to be in a very awkward position when it comes to pricing, as it seems to be squeezed between China Mobile and XLT.<sup>14</sup>

In the case of the wireline segment, competition is not as encouraging as in wireless. Since two incumbent wireline carriers are still regional monopolists in their respective regions, a substantial price war has rarely occurred in the sector for several years. Instead of a gradually reduced nominal rate as witnessed in the wireless market, wireline local voice service witnessed an increase in tariffs at the turn of the millennium and the tariff level has kept relatively stable ever since. This, in turn, leads to quenched competitiveness in the broadband market, particularly ADSL which is dependent on the PSTN network, although the entry of the cable modem service from the RFT network has begun to fuel rivalry in recent years.

If price rivalry, even though still limited, is believed to be contributing to industry performance in terms of enhanced availability and affordability of telephony services, then carriers seem to not always behave in a pro-efficiency manner, particularly concerning interconnection and network deployment. Each carrier seems to be striving to build and protect a powerful self-sufficient domain, i.e., an independent and vertically integrated network infrastructure. Cooperation among these telecom SOEs appeared to be difficult. If a bigger network's unwillingness to interconnect with a smaller one is supposedly due to strong positive externalities, then it would probably be hard to find a standard reason for carriers, no matter large or small, in their unitary unwillingness to collocate or share, even if the collocation or sharing can lead to a win-win outcome.<sup>15</sup>

The fact that carriers are less inclined to cooperate in interconnection and collocation does not necessarily mean that they never choose to cooperate. Cooperation issues in China's telecom industry are far less complicated than they first appear to be. For example, carriers can sometimes resort to cooperation (or collusion, to put it more aggressively), explicit or tacit, in network

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<sup>9</sup> National Bureau of Statistics of China, "China Statistical Yearbook 2005," *supra* note 6.

<sup>10</sup> See, e.g., Xia, 2006, "Head-to-Head or Hand-in-Hand" *supra* note 5.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

<sup>13</sup> To gauge the relative market position of China Mobile, the simplest way may be to look at its net profit as opposed against other mobile carriers. China Mobile accounts for roughly half of industry profits. For detailed data in this regard, see *Ibid.*

<sup>14</sup> *Ibid.*

<sup>15</sup> Telecom carriers in China tend to construct their own respective tunnels, transmission towers, and stations which can more often be shared to save investment.

expansion, pricing, and so on. This cooperation can be so intimate that every party involved sticks to its commitment on a constant basis. Part of the evidence can be found in the wireline segment where no major movement in terms of network deployment in a competitor's region has taken place. In this regard, there seems to be a binding pact between China Telecom and China Netcom, the two largest wireline operators in China.

### 3. *Interpreting Market Behavior in Chinese Telecom Industry: the "Chinese Way"?*

The behavior of Chinese telecom firms is sometimes so peculiar that it is not easy to explain by utilizing standard competition theory. For example, an individual may be puzzled by difficulties exhibited in interconnection between carriers who are all SOEs under the same government agency parent and are therefore supposed to be more cooperative with each other. A mystery of this sort is also demonstrated in almost every other area in this market. The efficacy of standard economic theory in explaining telecom firms' conduct is further undermined when the industry has over recent years been undergoing a drastic consolidation and reconfiguration both in terms of structural and personnel adjustment.

The failure of standard economic theory in the interpretation of Chinese telecom industry automatically triggers rethinking for an alternative approach. What then, are real forces underlying the market conduct and industry performance in China's tremendous telecom market? One response to this query probably lies in an institutional approach pioneered by Ronald Coase<sup>16</sup> and expanded by many other economists such as Oliver Williamson, Harold Demsetz, Steven Cheung, and Douglass North. In effect, for decades, scholars and practitioners have been applying theoretical findings in institutions in an effort to explain those that mainstream microeconomics cannot.

Nevertheless, to unveil the mystery of market behavior in China's telecom industry, there existed no ready literature or theory to be borrowed without questioning or adaptation. This is probably because China differs from any other economy in the world in terms of not only existing political, socio-cultural, economic, and technological aspects which form the so-called institutional endowment, but more importantly, the robust and dynamic nature when institutions are treated endogenously as an evolving process. This can translate into complications in applying existing literature to issues in China. For example, unlike other market economies where variance in political aspects may be treated, along with others, as a primary interpretative factor of economic performance, in China the understanding of existing political structure alone may help little in understanding market conduct and economic performance, particularly in industries with substantial government ownership and therefore intervention such as telecommunications.

On the contrary, over the past two decades, there seems to be a tendency in many cases in China for socio-cultural factors to sometimes serve as the sole explanation for the economic activities of individuals or groups. Meanwhile, the socio-cultural part of China's society has been witnessing an earthshaking transition and change, particularly since the middle of 1990s. This is characterized partly, by the pervasiveness of informal rules which are sometimes so widely accepted and powerful that people of China call them *Qian Gui Ze* (QGZ, i.e., "implicit law"). Unlike a regular explicit system of rules and laws which are relatively easier to understand, this "implicit law" is comparatively difficult to fathom. This can add to even more complications in interpreting the economic activities and performance from the perspective of institutions where socio-culture plays a major role, as socio-culture herein is not only an exogenous factor embedded in the current economic system but also endogenously changing over time.

To conclude, interpretation of market behavior in Chinese telecom industry requires not only an alternative approach which for the purpose of this paper is based primarily on economics of institutions, but also a "Chinese way" in applying if not expanding existing theories.

### 4. *Paper Objective and Structure*

The objective of this paper is to interpret market behavior and market outcome in China's telecommunications industry from the perspective of institutions, particularly informal institutions,

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<sup>16</sup> See, e.g., Ronald H. Coase, 1937, "The Nature of the Firm", 4 *Economica* 386; Ronald H. Coase, 1960, "The Problem of Social Cost", 3 *Journal of Law and Economics* 1.

to shed light on possible directions for future reform and provide lessons upon which countries elsewhere with similar situations can draw. The remainder of this paper will contribute to this theme by constructing an analytic model in which the informal law is evolving as a major force in resource allocation in general and a major determinant in telecom industry performance in particular.

Following this section, the paper will first try to synthesize in *Section II* a unique institutional endowment that may have a direct or indirect influence on China's telecom industry. A systemic model will be developed in this regard to integrate both "explicit" (formal) and "implicit" (informal) sides of institutions, concluding that informal institutions tend to play a role in affecting the choices of individuals and firms, and in turn in determining resource allocation and market outcome.

Due to the increasing significance of this "informal law" in determining the economic activities and outcome in China and its telecom industry in particular, careful attention will be paid in *Section III* to how the evolution of this "implicit law" ensues in a powerful QGZ, the nature of it and the specific forms it might take, its historical and cultural origin, and ultimately its possible implications in understanding the telecommunications sector in China.

Based on analyses in previous parts, *Section IV* tries to identify on a sector-specific basis the driving forces behind the behavioral dimension in Chinese telecom industry, and assess the relative significance of market forces and the QGZ, if any, in determining market conduct and industry performance. To this end, careful investigation will be made with regard to the endowment and evolution of industry level institutions, particularly the evolution of industry-level QGZ, and its implications in explaining behavioral dimension in terms of market entry, pricing, interconnection, universal service provision, and network deployment, and in turn the ultimate forces in resource allocation and the nature of competition.

*Section V* concludes this paper by providing the author's insight on current problems and future trends in competition reform in Chinese telecommunications, pointing out the significance of the development of a parallel market-oriented socio-cultural environment in creating meaningful, genuine, and sustainable competition.

## II. Analytical Model

### 1. *Why Institutions Matter*

An institution is by definition a set of formal and informal rules, laws, and norms that constrain the behavior and choice of individuals and organizations in a given situation. In a given economy, institutions should be treated as both the rules and equilibrium of the economic game. This means that the term "institution" in this paper should be approached in two fold manner:

- *First*, an institution is the rule of the economic game which is exogenously determined through the process of political negotiations.<sup>17</sup>
- *Second*, an institution itself is also the equilibrium of the game, which is endogenously determined through the interactions of all parties in question in a given area and can be self-enforced.<sup>18</sup>

Institutions determine economic performance.<sup>19</sup> They may serve as substitutes or complements when the free market mechanism alone fails to function well. Market transactions and the enforcement of institutions involve costs. If we aggregately call these costs transaction costs, then the lower the transaction costs the higher the economic performance; or alternately, the lower the

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<sup>17</sup> See, e.g., Douglass C. North, 1990, "*Institutions, Institutional Change, and Economic Performance*", Cambridge, England: Cambridge University Press

<sup>18</sup> See e.g., Andrew Schotter, 1981, "*The Economic Theory of Social Institutions*," Cambridge: Cambridge University Press.

<sup>19</sup> Ronald H. Coase, 1998. "*The New Institutional Economics*," 88 *American Economic Review*, American Economic Association, 2: 72-74.

transaction cost the higher the productive efficiency of institutions.<sup>20</sup> An effective institution will result in high economic performance at low transaction costs.

In a given economy, transaction cost is dependent on legal, political, societal, and cultural institutions. Different institutional arrangements may result in different levels of transaction cost, i.e., expenses incurred in such activities as the negotiation and implementation of contracts. As an empirical law, a society with integrity and trust will be a society with low transaction costs.<sup>21</sup> Accordingly, in a society where people do not trust or are prone to simply cheat, a great amount of resources have to be expended in determining and enforcing contracts.<sup>22</sup> In an extreme case, this situation can lead to economic breakdown due to prohibitively high transaction costs.<sup>23</sup>

Transactions or exchanges make possible the division of labor in an economy; economic performance can then be improved through specialization. In this sense, holding other things constant, the greater the level of economic development the higher the proportion of transaction activities, which can probably translate into a higher proportion of transactions cost on national output. In a less precise way, these transaction costs can be roughly estimated by summing up the direct incomes of all those individuals and organizations whose economic roles are not directly related to production in an economy. Steven Cheung finds that the percentage of transaction costs on national income in a centralized economy is far higher than that in a private business economy.<sup>24</sup>

The fact that one system of institutions works in a given country does not necessarily mean that the same system can be effectively transplanted wholesale into another economy. Once in a while, when governments issue new laws in the hope of introducing a new set of institutions, the enforcement of these laws actually generates unexpected results under existing political, economic, and socio-cultural conditions. Examples of this sort can be found in many transitional economies where the enforcement of market-oriented laws while leaving other institutional legacies untouched generates distorted market behavior and economic output. The fall of the giant economy of the former Soviet Union is one example where corporate controls were de facto captured by “insiders” (e.g., corporate executives and government administrators of former SOEs) after the execution of a large scale privatization, while these control rights are supposed to be allocated through an effective capital market. This was probably due to unfits between the imported laws and existing institutional legacies, which has led to high institutional costs.

The unfits of new laws with the existing institutional legacy can be found not only at the economy level but also at the industry level. The Chinese telecommunications industry may serve as another example where institutional change or transition (both economy and industry levels) seems not to be in parallel or balanced, as the introduction of disruptive new sector-specific rules (e.g., corporate reform and industry structural reform) is based on a generally unchanged institutional foundation in both political and cultural perspectives.

## 2. *The Application of Institutional Analysis in Telecommunications*

Telecommunications are characterized by substantial economies of scale and scope, consumption externality, and a high level of asset specificity. These characteristics may undermine the functioning of neo-classical market mechanisms to deliver first-best optimality whilst an effective institutional arrangement may help improve industry performance. Despite the existence of an extensive literature on competition and regulation in telecommunications, only a few sources are found based on an institutional approach. Even among the limited number of works, they are mostly focused on causality between institutional endowment and a viable regulatory regime, and

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<sup>20</sup> *Ibid.*

<sup>21</sup> Douglas C. North, 1998, “*A Revolution to Economics*”, Second Annual Conference of the International Society for New Institutional Economics, Paris, France, September 17-19.

<sup>22</sup> *Ibid.*

<sup>23</sup> Steven N. S. Cheung, 1992, “*On the New Institutional Economics*”, in Lars Werin and Hans Wijkander ed. “*Contract Economics*”, Blackwell Pub

<sup>24</sup> Steven N. S. Cheung, 1982, “*Will China Go Capitalist?*” London: Institute of Economic Affairs.

few concern the implications of institutions in interpreting market behavior and industry performance in telecommunications in a transitional economy, particularly in China.

Following North<sup>25</sup> and others, Levy and Spiller<sup>26</sup> developed a framework for empirical analysis of the institutional foundations of regulatory problems in telecommunications, using transaction cost economics to analyze the determinants of performance of privatized utilities in different political and social circumstances. They define the institutional endowment of a nation as comprising five elements:

- A country's legislative and executive institutions.
- The country's judicial institutions.
- Customs and other informal but broadly accepted norms that are generally understood to constrain the action of individuals or institutions.
- The character of the contending social interests within a society and the balance between them, including the role of ideology.
- The administrative capabilities of the state.

Here, what is worth mentioning is that Levy and Spiller treat these elements as exogenous and compares the effect of these endowments in determining the potential for administrative expropriation or manipulation and hence affecting the sector's performance. To elucidate the methodology of this paper, Levy and Spiller's work can conveniently serve as a starting point. Although their general idea on defining a nation's institutional endowment will largely be accepted here, this paper's analysis differs in at least three aspects:

- *Exogenous regulatory processes.* This paper treats regulatory processes as exogenous and focuses on the effect of institutions on individual behavior, and hence market outcome.
- *Priority of informal elements.* The analysis of informal institutions rather than elements of formal ones will be given priority.
- *Institutional change.* As mentioned above, elements of institutions, particularly informal institutions will be treated as both exogenous and endogenous rules of the game. Hence, analysis of the process of institutional change will be emphasized.

### 3. *An Analytical Framework for the Chinese Case: Political vs. Cultural Dimensions*

Over the past two and half decades, there has been a transition of the roles played by formal and informal institutions in affecting economic and societal behavior in China, which is characterized by a general trend toward informal institutions becoming more and more important in determining individual behavior and hence economic performance. Formal mechanisms of institutions such as laws and regulatory rules, although written and de jure legitimate, are sometimes neglected and hence the outcome of implementing these formal mechanisms is actually determined through negotiations among individuals or groups of individuals who might follow rules other than those of formal institutions. In other words, contracting problems are salient in enforcing formal institutions. In extreme cases, individuals or organizations in question would choose to totally abandon formal rules. Uncertainty arises without the existence of an agreed-upon informal mechanism by all parties involved.

Given such circumstances, conventional ideas of treating the institutional endowment of a nation based on a rather balanced composite of elements (or "balanced approach") may no longer be viable for the case of China. It is therefore necessary to first determine the general status of enforcement of formal and informal mechanisms. Although the measurement of the degree to which formal or informal institutions are enforced can be a topic, it is not the purpose of this paper to elaborate. To gauge the level of enforcement, we first treat institutions at economy level as

<sup>25</sup> See, North, 1990, "Institutions, Institutional Change, and Economic Performance", *supra* note 17

<sup>26</sup> Brian Levy and Pablo T. Spiller, 1994, "The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation", 10 *Journal of Law, Economics and Organization*: 201-46.

comprising of two general categories, i.e., formal and informal institutions, and further suppose that the relationship between the two categories are either substitutes or complements. By means of this, we come up with some basic types of general enforcement status of institutions in an economy.

As demonstrated in *Figure 1*, there are roughly four combinations of general enforcement status with regard to the level to which formal and informal institutions are enforced. If formal and informal mechanisms are arbitrarily treated as substitutes rather than complements and they do not share a same objective<sup>27</sup>, then only combinations II (N, Y) and III (Y, N) (see thickened grids) are meaningful for our analysis. In the case of combination II, no formal mechanisms of institutions seem to be strictly enforced, and the economy in question is ruled by informal institutions; while in the case of combination III, the economy is completely ruled by formal mechanisms of institutions. Both combinations II and III are extreme cases. The real world may fall somewhere on the continuum between II and III. For convenience, we define the location on the continuum as the “enforcement location” which represents the relative influence of the formal and informal mechanisms of institutions in an economy.

*Figure 1.* Enforcement Status Matrix

		<i>Are formal mechanisms of institutions strictly enforced?</i>	
		Yes	No
<i>Are informal mechanisms of institutions strictly enforced?</i>	Yes	I (Y, Y)	II (N, Y)
	No	III (Y, N)	IV (N, N)

*Source:* Author’s research.

Instead of using a balanced approach, as mentioned above, this paper follows roughly two lines of questioning (i.e., formal vs. informal institutions) in gauging the general enforcement status of formal institutions and informal institutions. By investigating the development processes of, and the interactions between, the two lines, this paper tries to capture the fundamental scenario in which firms in China’s telecommunications industry behave, and in turn to predict the underlying explanation for this behavioral dimension and hence industry performance. In so doing, a two-step procedure is followed in evaluating general institutional characteristics:

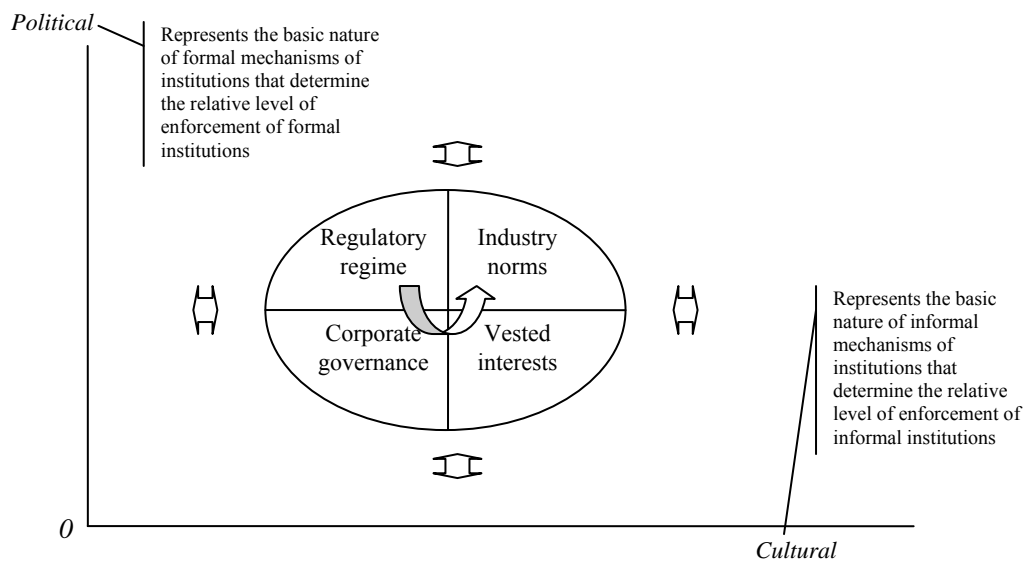
- First, identify the enforcement location (of formal and informal institutions) in China, current and past, by defining the fundamental properties of, and then assessing the status of enforcement, of the two lines.
- Second, based on the assessment of enforcement location which already shed some light on the relative significance of formal and informal mechanisms in ruling the economy, examine the evolution of these institutions and identify the underlying driving forces.

While factors for consideration in determining the enforcement location may encompass a broad range of variables, they actually fall into two general headlines, i.e. *political* and *cultural*. The rationale is two fold. First, China is a country characterized by a one-party political regime, which means the “checks and balances” mechanism, although embraced by the ruling party, can be compromised. Second, China is also a unified nation with a high-context cultural tradition that has been inherited from thousands of years of evolution. Mainstream cultural trends can dominate almost every corner of China, which is particularly expedited by the exponential diffusion of ICT services in recent years. By following these broad headlines, the analysis can be streamlined and therefore focuses intrinsically on core issues and problems that directly point to the industry dynamics after twigs and leaves are trimmed from the general institutional scenario.

<sup>27</sup> If formal and informal institutions are complementary, then it is equivalent to say that they are supposedly compatible with each other, which is not the usual case for a transitional economy like China. Given a complementary relationship between formal and informal institutions, it might be a reasonable belief that the two mechanisms do not share the same objective.

While *political* and *cultural* characteristics define the fundamental institutional environment in which Chinese telecom firms operate, the impact of the environment on the telecom industry may vary from that of other industries. This is because industries in China may differ in some basic features such as, regulatory regime, corporate governance, industry norms, and vested interests.<sup>28</sup> While the economy-level institutional environment may exert somehow indirect influence on a firm's behavior in certain industry, the industry-level institutional arrangement interacts directly with the daily operation of firms. Meanwhile, the economy-level environment defines a fundamental scenario in which industry-level institutions develop and evolve. In this sense, our institutional analysis will be structured into two levels: the economy and industry level. This two-tiered idea is graphically demonstrated in *Figure 2*, where the horizontal axis represents the level of enforcement of the *cultural* dimension and the vertical represents the level of enforcement of the *political* dimension. From this it can be seen that the elements that define the industry level institutional endowment not only interact with each other but also interact with the external environment. *Figure 2* actually defines the basic analytical framework for this paper.

*Figure 2.* Institutional Analysis: A Two-Tiered Framework



*Source:* author's research.

The regulatory regime and corporate governance represent the basic *political* characteristics of industry level institutions in telecommunications in China. Due to its formal nature, they are relatively explicit and independent a topic. Based on the framework defined in *Figure 2*, we first take a look at the evolution of formal institutions in China's telecom sector, particularly since 1980. Then, from the next section, we investigate the evolution of institutions at the economy level (*Section III*) and industry level (*Section IV*) respectively, trying to gauge the institutional determinants in interpreting the behavioral dimension and hence performance of China's telecom industry.

#### 4. *The Evolution of Formal Institutions in China's Telecommunications Sector: 1980-2007*

Primarily embodied in the regulatory regime and corporate governance, formal mechanisms of institutions in the Chinese telecommunications sector is the result of a long period of evolution, particularly the years since 1980. This process of evolution can be typically described as following two general headlines, i.e., regulatory incentives (such as tariffs, ownership, industry structure, etc.) and regulatory governance. The evolution of regulatory incentives and governance are often interrelated as they are supposed to be integral parts of a regulatory regime.

<sup>28</sup> These four elements actually represent both the formal side (regulatory regime, corporate governance) and informal side (industry norms, vested interests) of industry-level institutions. Or for the purpose of terminology consistence, they represent *political* and *cultural* characteristics at the industry-level. In his previous work, the author defines a similar systemic approach. See Xia, 2006, "Head-to-Head or Hand-in-Hand", *supra* note 5.

#### 4.1. Tariffs

Tariff reform in China is marked by softening the stiff tariff regulation practiced before 1980 when tariffs on all telecom services were determined by the government and subject to strict government scrutiny. Before 1980, the telecom industry was run by the government and could barely break-even due to rigid tariff regulation. Telecommunications thus emerged as a “bottleneck” to general socio-economic development. This situation, in parallel with economic reforms, directly led to ice-breaking tariff reform in the early 1980s characterized by a privileged tariff policy in favor of the telecom sector. Hence, the period from 1980 to 1994 witnessed the first crusade of tariff deregulation by the introduction of a regulatory approach characterized by: (a) government-dominated pricing and government-directed pricing; (b) a generally high tariff level;<sup>29</sup> (c) huge initial installation fees;<sup>30</sup> and (d) cross-subsidizing.<sup>31</sup>

The groundbreaking entry of China Unicom and the registration of the former China Telecom in 1994 led to a duopolistic telecom market, which eventually triggered an avalanche of tariff decreases in the mobile market originally monopolized by the government (i.e. the DGT). Since the entry of China Unicom, the former industry regulator, the Ministry of Posts & Telecommunications (MPT) started to exercise asymmetric tariff regulation in 1995. Based on these regulations, China Unicom enjoyed a 10% flexibility in pricing as opposed to the dominant operator – the former China Telecom, although in the end China Unicom only found that it was actually competing with the regulator.<sup>32</sup> This asymmetric philosophy was later mirrored again in 2001 following the registration of another wireline operator, China Railcom, who enjoys 10% to 15% flexibility in pricing.

From 1996 to 2001, tariff regulation in China underwent a five-year-long regulatory effort for “structural adjustment” in the hope of neutralizing cross-subsidizing so that a level-playing-field could be established.<sup>33</sup> After the “structural adjustment”, in 2002 the MII started to adopt a “filing-and-approval” policy in regulating telecom service tariffs. Responding to the new regulatory policy, carriers aggressively adopted service-package-plans as undercutting strategies in a seemingly increasingly saturated market. This largely expanded corporate discretion in deciding their tariffs and eventually led to a more incentive-oriented tariff regulation in the form of price cap regulation in October 2005.<sup>34</sup>

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<sup>29</sup> During the monopoly era in telecommunications, the household initial installation fee in areas such as Beijing skyrocketed from RMB200 in early 1980s to as high as RMB5000 in 1996. The price of a mobile terminal went even as high as RMB280 000. The Directorate General of Telecommunications cut the price for mobile service three times within only one year right after the entry of China Unicom. In the middle of the 1990s, the average level of tariff for international long distance telephone service stood at RMB29 per minute, a figure roughly six times as large as in the United States. High levels of tariffs stopped most potential users from subscribing to telecom services.

<sup>30</sup> The privileged policy of charging enormous initial installation fees has contributed to the rapid development of telecommunications. During 1979 to 1995, capital investment in posts and telecommunications reached RMB0.27 trillion, roughly one third of which came from initial installation fees.

<sup>31</sup> Based on economic development and affordability of subscribers, a tariff system characterized by international service subsidizing domestic service, long distance subsidizing local service, telecommunications subsidizing post services, urban users subsidizing rural subscribers, east-central area subsidizing central-west area, businesses subsidizing households was established.

<sup>32</sup> See, e.g., Xia, 2006, “Head-to-Head or Hand-in-Hand”, *supra* note 5

<sup>33</sup> Cross-subsidy arises from a distorted tariff structure among services. To approach this issue, the central government initiated a crusade of structural adjustments in 1996, 1997, 1999, and 2001, focused on reducing the price of international service, long distance telephony, rental circuits, Internet service, rural telephone service, and initial installation fees while increasing tariffs for local telephone service. See, MII, China Communications Yearbook, 1996~2002

<sup>34</sup> In September, 2005, the MII and SDRC jointly issued a “Notice on the Adjustment of Regulatory Mode in Tariffs of Some Telecom Services” which was effective on October 1 of the same year. According to the Notice, the tariffs of domestic long distance and international telephone service, domestic roaming services of mobile phones, and inter-regional telephone service of local wireline networks are subject to price cap regulation. Tariffs of other services are to be decided by carriers. See, MII & SDRC, 2005, “Notice On the Adjustment of Regulatory Mode in Tariffs of Some Telecom Services”, available at <http://www.enet.com.cn/article/2006/0302/A20060302507243.shtml> (accessed August 13 2007)

#### 4.2. Ownership and Structural Reform

Reform of ownership and industry structure is correlated when the government conventionally acted as the owner of telecom networks. Over a long period of time before 1994, investments in telecom infrastructure nationwide were sponsored by a wide spectrum of government agencies. This accordingly led to a diversified ownership by these agencies. The contour of this style of network ownership was characterized by the co-existence of two general categories of networks: the “public network”, owned and operated by the MPT, and some thirty other “dedicated networks” owned by various government agencies including the army, railroad, and electricity. This condition lasted until 1994 after the entry of China Unicom which broke the status quo of network ownership in China.

Jointly owned by agencies such as the former Ministry of Electronics Industry, the Ministry of Electricity, and the Ministry of Railroads, China Unicom was registered in direct response to the plea by these ministries.<sup>35</sup> Almost concurrently, the “public network” or PSTN network which was owned by the former MPT and PTAs and directly operated by the DGT was also incorporated as a company under the name of China Telecom.<sup>36</sup> As a duopolist, the former China Telecom was owned directly by the regulator (MPT) while China Unicom was primarily owned by other ministries. This meant that government ownership was still the only mode of network ownership and competition, if any, was in a sense intended to happen between ministries.

This simple mode of network ownership among various ministries ended, replaced by a rather diversified co-ownership between one government agency and multiple individual or institutional investors after two rounds of splits and divestiture respectively in 1999 (with the former China Telecom split into four service-specific companies) and 2002 (the divested China Telecom was further dissected into the “South” and “North” companies). After a series of industry consolidations and restructuring, the telecommunications industry in China has now emerged from a regulated monopoly into a regulated oligopoly (featuring six carriers) – or at least structurally appears to be so.<sup>37</sup> Among the incumbent carriers, four were already listed on stock markets domestically and abroad,<sup>38</sup> although they remain government-dominated in terms of ownership.<sup>39</sup> In 2004, further reforms officially transferred the supervision of the state’s portion of the assets from the regulator (as in the case of China Telecom, China Mobile, China Netcom, China Satcom) and other relevant ministries (as in the case of China Unicom, China Railcom) to the State-owned Assets Supervision and Administration Commission (“SASAC”).

#### 4.3. Regulatory Governance

The evolution of regulatory governance in telecommunications has witnessed a rather unstable process that dates back as early as the establishment of the People’s Republic of China (“PRC”). The fundamental characteristic of regulatory governance reform has been the transformation from restructuring within the line-ministry system to the effort toward government-business separation. Despite the variance in governance arrangement in different periods, one constant feature has been the functional interplay of the line-ministry system with other relevant agencies at different levels. The line-ministry system in telecommunications in China usually comprises three levels: central, provincial, and local. The telecommunications industry was historically operated and supervised through the joint efforts of the line-ministry system and provincial governments. Governance reform at central level would ultimately be mirrored in that at provincial and local levels.

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<sup>35</sup> China Unicom was incorporated as a direct result of the State Council Order No. (1993) 178: “State Council’s Reply on the Approval of the Establishment of China Unicom”. According to the Order, the three agencies (i.e., MEI, MOE, and MOR) were approved to jointly establish China Unicom as an initial trial action to deepen the regulatory reform in telecommunications. It is this Order that initially stipulated the business scope of China Unicom which broadly encompasses both wireline and wireless service.

<sup>36</sup> For detailed description of structural reform, see Xia, 2006, “Head-to-Head or Hand-in-Hand”, *supra* note 5.

<sup>37</sup> The six carriers are China Telecom, China Netcom, China Mobile, China Unicom, China Railcom, and China Satcom. Except for China Railcom and China Satcom who are still solely owned by the government, most assets of the other four carriers have been restructured into shareholding companies.

<sup>38</sup> The listed companies include: China Mobile, China Unicom, China Telecom, China Netcom.

<sup>39</sup> National Bureau of Statistics of China, “China Statistical Yearbook 2005,” *supra* note 6.

Right after the establishment of the PRC, telecommunications was operated jointly with post services by the MPT which was established in November 1949. This governance regime lasted until January of 1970 when the MPT was disbanded, and accordingly the operation of telecommunications and postal services were separated from each other, resulting in the establishment of the Directorate General of Posts (“DGP”) that was under direct control of the Ministry of Communications and the establishment of the Directorate General of Telecommunications (“DGT”) under the army. The DGP and DGT were combined again after the central government decided to restore the MPT in May 1973.

Before 1979, although the MPT and the provincial governments with their own Posts and Telecommunications Associations (“PTAs”) jointly supervised and operated the telecommunications industry, more often than not, the provincial governments were given more authoritative emphasis. Since 1979, however, the supervision and operation of the posts and telecommunications industry was restored back to the central-government-driven mode of governance regime within the line-ministry system. That is to say, the central regulatory agency was given more authoritative emphasis. In 1988, the central government decided on a step-by-step plan for the ultimate separation of government and business which was followed the next year by an intra-ministerial reorganization of functional departments within the line-ministry system. This eventually led to the convergence of the MPT and the Ministry of Electronics Industry<sup>40</sup> into the MII and the formation of the State Post Bureau which was divested from the former MPT in 1998.

To the present, the preliminary objective of divestiture of business from government and the establishment of a professional regulatory agency in the telecom sector was fulfilled. This also means the timing to formalize the “fruit of the reform” through legislative efforts. Unlike western countries such as the United States where the regulatory agency in the telecom sector was usually established following a sector-specific law issued beforehand, China’s legislation in telecommunications usually takes place after the event of actual regulatory governance reform. In 2000, the sector-specific regulatory law *Telecommunications Regulations* was promulgated, which defines, among other things, the regulatory responsibility of the MII and reinstates the primary role the MII plays in the joint regulatory authority with provincial governments. In 2001, governance reform at provincial levels was finished. Thus far, a relatively independent sector-specific line-ministry regulatory system has been established which is by law disinterested in the sector in terms of ownership of assets as well as the authority over personnel arrangement in the industry.<sup>41</sup>

The purpose of this series of telecom reforms is meant by Chinese government to create a sound foundation of market-oriented mechanisms to improve the industry performance through separating government from business and creating meaningful market competition among telecom carriers. As mentioned in *Section I*, the effect of this formal path of reform on the intended objective is still controversial as the behavioral dimension in the industry might be distorted and desirable competition may not come before such distortion is addressed. The interpretation of this phenomenon and its implications in future reform lies in a systemic institutional approach as framed above.

### III. Evolution of Informal Institutions and the Rise of the “QGZ”

Following the analytical framework defined in *Section II*, the purpose of this section is to gauge the general enforcement position of formal and informal mechanisms of institutions in China through the lens of broad *political* and *cultural* characteristics. It asks how formal mechanisms of institutions can fail while informal mechanisms of institutions may sometimes supersede in affecting socio-economic activities, and how this situation can evolve to such an extent that the

<sup>40</sup> MEI originally took charge in the manufacturing sector of telecommunications.

<sup>41</sup> Personnel authority was transferred from the MII to the SASAC in the year of 2004. Currently, the landscape of the regulatory system is characterized by participation from various government agencies. In addition to the MII, these agencies include: the State Radio, Movie, and Television Administration (RMF), the State Informatization Leadership Group (SILG), the State-Asset Supervision and Administration Commission (SASAC), and the State Development and Reform Commission (SDRC).

presence of the QGZ is almost totally pervasive in modern China. However, the analysis of this part is of a rather general nature. Based on this section, next section (*Section IV*) will contribute specifically to the assessment of the sector-level effect of the QGZ on market conduct and industry performance in telecommunications in China.

### 1. *The Failure of Formal Mechanisms: The Era of the QGZ?*

The functioning of any formal mechanisms institutions is inevitably imbedded in an informal set of cultural cues, norms, and customs. A formal mechanism of institutions can be loosely described as comprising formal rules, institutions, and processes which are eventually executed and implemented by individuals or groups of individuals.<sup>42</sup> Thus, the effective functioning of a given formal mechanism must meet at least one basic condition, i.e., the rules and processes have to be binding. If viewed through the perspective of new institutional economics, this means individuals or groups of individuals involved should perceive the rules and processes as a binding contract and strictly constrain their private actions to the contract such as to achieve the desired objectives of the formal mechanism. Nevertheless, the objectives of formal institutions are always challenged by the incompleteness of the contract itself, and of the necessary information required to assess the performance. This “bounded rationality” can give rise to a number of contracting problems.<sup>43</sup> In extremis, “bounded rationality” can lead to total collapse of a formal mechanism when an incompatible cultural institution becomes dominant.

For any given objective of a formal institution, it can only be achieved through individual rationality reflected in private choices. In other words, the objective itself and hence the desired private actions has to be a Nash Equilibrium.<sup>44</sup> This equilibrium must meet two conditions, i.e., incentive compatibility and participation constraint. Thus, private choices have to be easy to observe and supervise. To this end, in the first place, an effective mechanism of institutions has to be clearly defined in objectives. On the other hand, the rules and processes have to be well designed so that they are self-enforcing. To insure the intended equilibrium actually comes about, a market-driven economy usually adopts the philosophy of “checks and balances”, which is meant to formally constrain the private actions of individuals or groups in question within the boundary of the contacts such that the collective goal can be achieved. As a political philosophy, “checks and balances” creates trust among members of a society through distrusting in the first place, in one way or another.

A well functioning “checks and balances” mechanism increases the expected costs of deviation from the formal rules and hence provides an incentive to conform to the formal rules. The presence of this mechanism is largely predetermined by the fundamental political characteristics which define the hierarchical governance, basic principle of decision-making, and the control over proceedings.<sup>45</sup> For a given political regime to reach its intended objective, the expected cost of unintended political transactions should be high. Meanwhile, the rule-maker has to assess the compliance cost to ensure a positive expected net social gain from catching and punishing outlawed activities. As a major determinant of the level of compliance, costs of political institutions can vary from one regime to another. While the costs may be determined by a number of factors on which this paper does not intend to elaborate, it might be less risky to say that a low cost for political institutions can only occur in a compatible cultural environment where mainstream values and norms support, rather than impede, the formal political ideology. That is to say, *political* and *cultural* characteristics are interrelated in determining the combined outcome of a given institutional arrangement.

As a socialist market economy, China is a country with historical legacy of thousands of years. The alternation of feudalist dynasties over a time span of roughly four thousand years might have changed everything but fundamental cultural characteristics. In modern China, the political regime is characterized by one-party ruling system and accordingly, almost all formal rules are designed, executed, and implemented through this system. Preferences of individuals or groups of

<sup>42</sup> See, e.g., North, 1990, “Institutions, Institutional Change, and Economic Performance”, *supra* note 17

<sup>43</sup> See, e.g., Oliver E. Williamson, 1985, “*The Economics Institutions of Capitalism*”, New York-London

<sup>44</sup> John F. Nash, 1951, “*Non-Cooperative Games*”, 54 *Annals of Mathematics* 2: 286-295

<sup>45</sup> See, e.g., North, 1990, “Institutions, Institutional Change, and Economic Performance”, *supra* note 17

individuals within the system can be significantly relevant in determining the outcome of the political institutions. Given circumstances<sup>46</sup>, individual preferences are likely to metamorphose into the primary force in deciding the distribution of resources.

In contemporary China, people nowadays tend to pay inadequate observation to formal rules while instead paying keen attention to certain kind of “informal laws”.<sup>47</sup> Evolved through informal bargaining and transactions, these informal laws can be so powerful in actually governing many public and private activities that they are now dubbed as *Qian Gui Ze*, or “implicit laws”. Despite variance in specific forms which they actually take in different areas<sup>48</sup>, these “implicit laws” converge on one common characteristic, i.e., they all follow the “rule-of-power-will.”<sup>49</sup> Consequently, the level of enforcement of the *political* dimension can be overshadowed, if not totally superseded, by the magnificent penetration of the *cultural* dimension.

## 2. *The Nature and Mechanism of the QGZ*

If viewed through the lens of principal-agent theory, the prevalence of the QGZ is synonymous with unintended agency problems in the political dimension. The underlying reason for the unintended agency problem is attributable to political characteristics in addition to the incompleteness of the contract itself. If the later has left room for opportunism, then, a political institution without the installation of a self-enforcing mechanism can further strengthen this opportunism by endowing businesses and public organization “insiders” with unbalanced control rights, thus ensuing in a “inside control” situation. The term “insiders” in this paper may refer to any individuals who actually enjoy unbalanced control, in part or full, over the process of businesses or public affairs.

In a political institution with pervasive unintended agency problems, the “insiders” (business executives, public officials) will become the de facto rule-makers and implementers and hence residual-claimers. In the absence of a strong “checks and balances” system, the cost of breaching institutional contracts is likely to be extremely low. This in turn can lead to the dysfunction of formal mechanisms where “public power” is to be transformed into “private power”. Here, “public power” refers to authority delegated through formal mechanisms of institutions to serve public interests while “private power” refers to those that serve primarily private goals.

The fact that the QGZ means deviation from formal rules does not necessarily mean that it is without any rules to follow. The QGZ actually provides an alternative informal mechanism consisting of a set of informal laws which are unwritten but comprehensible. An implicit form it may take, the QGZ often develops and “nibbles” surreptitiously at formal mechanisms. In cases where the QGZ prevails, the execution of formal institutional contracts is expected to be

<sup>46</sup> For example, in the absence of a “checks and balances” mechanism, private choices with regard to compliance by the formal rules may not be effectively supervised.

<sup>47</sup> As powerful decision-makers on the allocation and distribution of various resources, basic units within the CPC bureaucracy now tend to embrace certain kinds of “implicit laws”. These “implicit laws” usually go against the terms of the formal party constitution. For example, as one principle to help prevent making mistakes, “criticism and self-criticism” has long served as a “magic weapon” in CPC’s road toward success in revolution. This magic weapon has now metamorphosed into formism where “criticism” is distortedly interpreted as the “expression of kind wishes” while “self-criticism” as “demonstration of excuses”. Another example is the process of voting in which nomination is replaced by designation, the invitation of public opinion is no other than the invitation of public obedience, and seeming margin elections but actually single-candidate elections. Probably the most harmful “implicit law” lies in superiors’ practices in performance evaluation of subordinates in which “you are competent if I say you are even though you are not and you are incompetent if I say you are not even though you actually are” has become a widespread buzzword and maxim. The prevalence of these “implicit laws”, among others, actually helps transform the “public power” to serve private interests. See, e.g., CHINANEWS.COM, “*Interpreting Implicit Laws within the Party System: Party Constitution is Pigeonholed and Public Power Becomes Private Power*,” available at <http://www.chinanews.com.cn/gn/news/2007/01-15/854169.shtml>, also available at <http://politics.people.com.cn/GB/1026/5283613.html> (accessed July, 2007);

<sup>48</sup> Nowadays in China, there seem to be QGZ in almost every area. See, e.g., 76U.NET, “*Ten Kinds of Qian Gui Ze in Society*”, available at <http://www.76u.net/club/viewthread.php?tid=17242> (accessed August 14, 2007).

<sup>49</sup> By the rule of will-power, the one who possess authority is the one who can fulfill his will by maneuvering his authority to force others to be obedient to his will that often goes against the Party doctrine.

compromised, if not completely defaulted. As alternative mechanism, a new set of informal rules evolves as the result of gaming among “insiders” in question. Mirroring the nature of the rules itself, the process of the negotiations is also of an implicit nature which usually entails no formal proceedings. Once developed, the set of rules can be relatively stable for certain period of time until a new equilibrium has to be found when situational factors change.

Privatized “public power” (“PPP”) and “inside control” can reinforce each other. That is to say, an “insider” can use his existing control rights to capture even more PPP which in turn, reinforces his position as an “insider”. Thus, there seems to be a scale economy in building “private power” and becoming an “insider”. This cycling of reinforcement can eventually lead to a winner-take-all society in which individuals tend to spend substantial actual resources in gaining power and becoming an “insider”. Becoming an insider can sometimes be the only way to become better-off. It is therefore unaffordable for an insider to lose in the contest for power whilst the only way to protect this position is probably to become even more powerful. Once succeeded in gaining initial power and becoming an “insider”, the individual in question would spare no effort to defend and strengthen his power and at the same time maximize his economic and social benefit (monetary or non-monetary) by maneuvering what he can as an “insider”. As a result, bureaucracy, patriarchy, personal attachment, and personality cults are the featured characteristics of interpersonal relationships within the domain of private and public organizations.

In a winner-take-all institutional environment, the “rule-of-power-will” is an accepted norm when it comes to the process of decision-making and the handling of public power. Organizational activities are largely contingent upon the personal preferences (or will) of individuals (insiders) who have succeeded in privatizing “public power”. Given the limited term of office an insider may take (due to retirement rule), “short-termism” with regard to utilizing the PPP tends to be the optimal choice for the insider in question. In other words, an insider would try his best to maximize net surplus when he is still in possession of power during his term. This is usually done at the cost of long-run organizational objectives. In a typical completely inside-controlled organization, the personal utility function of the insider is synonymous with the objective function of the organization.

The level of individual well-being can be simplified as the function of the level of resources (monetary and non-monetary) owned and consumed by the individual in question. Non-monetary resources can take forms such as respect, friendship, security, and so on. Institutional objectives may be or may not be the insider’s goal, depending completely on their compatibility with their individual well-being. As mentioned previously, in a winner-take-all institutional environment in which the “rule-of-will-power” is observed, one way for an “outsider” to improve his well-being is to become an “insider” or transform from a junior insider to a senior insider. To this end, the individual in question has to write his behavior into the utility function of an insider of higher rank. In so doing, submitting to the personal preferences of the insider of higher rank is usually the quickest way. For those who do not pay adequate respect to the “rule-of-will-power”, he may risk a fiasco in his career contest, no matter how productive he might be in performing his professional duty. Without “checks and balances”, human weaknesses such as avarice, jealousy, brutality, and control can wedge deeply into every professional setting. In this sense, bureaucracy, patriarchy, personal attachment, and personality cults are actually “Nash equilibrium”. Clearly, this equilibrium is usually not intended by a modern political institution.

In a winner-take-all society where “personal attachment” is “Nash equilibrium”, “adverse elimination” can become a standard practice by which those individuals who are more submissive will be given privileged preference while those individuals who are more resistant to give up pride and character will be underprivileged and probably eliminated from the playing field.<sup>50</sup> This happens because as “insiders” with the PPP, leadership of businesses or other organizations tend to show a biased preference toward its subordinates based on their subservience rather than competence. One unfortunate empirical fact is that those who are more productive and moral individuals (elites) tend to be unwilling to give up pride and character in exchange for matriarchal accommodation while those less productive individuals, more often with lower level of morality,

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<sup>50</sup> See, e.g., CCTV.COM, “*The Adverse Elimination Phenomenon in Chinese Officialdom and Its Institutional Origin*”, available at <http://bbs.cctv.com/book/8343964/1.html> (in Chinese, accessed July 1, 2007)

tend to choose the opposite. Consequently, elites are likely to be driven out of market by those individuals relatively inferior in competence and morality. This “lemons market”<sup>51</sup> effect can be extremely anti-productive not only because it encourages wasteful investment in unproductive activities, but also because of the dismaying signal sent through this practice to members of the society. The process of “adverse elimination” not only impedes economic performance by destroying the mechanism of healthy competition in labor market but also cumpers social development through encouraging injustice and immorality, thus a “level playing field” can never really exist.

In a given society, moral development matters not only because it is an indicator of social development itself but also because it influences physical productivity. According to Kohlberg’s theory of cognitive moral development, there are three levels of moral reasoning, i.e., the pre-conventional level, conventional level; and post-conventional level.<sup>52</sup> The level of moral reasoning of an individual is affected by a number of factors. Among all the possible situational determinants of ethical behavior in terms of abiding by institutional contracts, the condition of social justice is probably one of the most important. An economy with a high level of social justice would provide its members with more level playing field. Social justice is not only determined by formal rules but also subject to behavioral influence of the leadership of a society, probably through the actions-speak-louder-than-words effect. In an inside-controlled and winner-take-all society, social justice is not ensured, leading to a lower level of moral development. Moral development is a key element in determining the cultural dimension of a society, as it defines the basic nature and type of a culture.<sup>53</sup>

To summarize, for an informal mechanism of institutions to dominate the scene of socio-economic activities, there have to be two prerequisites. First, the formal mechanisms of institutions are not binding and strictly self-enforcing, thus breaking the balance of *political* and *cultural* dimensions and in turn, the relative enforcement locations. Second, the degree to which the informal mechanism is enforced also depends on how well members of society agree upon certain informal norms and practices in question. During the evolutionary process of the *cultural* dimension, members of the society undergo a process of negotiation and gaming to decide what will be the new equilibrium-of-game. Fortunately or not, in a “bandwagon culture” where people tend to “follow the trend” and be interdependent in private choice, agreement upon a given set of cultural norms and practices is much easier than if in an independent and personalized society.<sup>54</sup> Eventually, when an informal mechanism becomes so prevalent that it functions just like a formal mechanism, it is accepted as the QGZ.

### 3. *Evolution of the QGZ: Only Culture to Blame?*

As mentioned above, the QGZ evolves when the relevant institutional enforcement location leans toward the *cultural* dimension. The question now is: how on the ground has this QGZ actually evolved? To answer this question, careful attention has first to be paid to the uniqueness of a

<sup>51</sup> George A. Akerlof, 1970, “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism”, 84 Quarterly Journal of Economics: 488-500.

<sup>52</sup> Lawrence Kohlberg, 1976, “Moral Stages and Moralization: The Cognitive-Developmental Approach.” In T. Lickona (Ed.), “Moral Development and Behavior: Theory, Research, and Social Issues” (pp.2-52). New York: Holt, Rinehart, and Winston; Lawrence Kohlberg, 1969, “Stage and Sequence: The Cognitive-Developmental Approach to Socialization”. In D.A.Goslin (Ed.), “Handbook of Socialization Theory and Research” (pp. 347-380), Chicago: Rand McNally.

<sup>53</sup> Culture is a cognitive framework consisting of assumptions (something taken for granted) and values (stable, long-term beliefs about what is important) shared by societal members. In a given organization, its culture can be toxic (in which people do not feel valued) or healthy (in which people are well treated). According to competing values framework, there are four types of organizational cultures, i.e., hierarchy culture, market culture, clan culture, and adhocracy culture. See, e.g., K. S. Cameron & R.E. Quinn, 1999, “*Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework*”, Reading, MA: Addison-Wesley; A. A. Berrio, 2003, “*Organizational Culture Assessment Using the Competing Values Framework: A Profile of Ohio State University Extension*,” 41 Journal of Extension 2, Published exclusively on the World Wide Web at <http://www.joe.org/joe/2003april/a3.shtml>.

<sup>54</sup> In modern mainland China, people seem to gradually become more and more interdependent in terms of their behavior in consumption and belief in which the “bandwagon effect” plays an important role.

thousands years old cultural legacy and the current political mechanisms of institutions. Although the QGZ can be labeled as cultural norms or customs its cultivation and development is inevitably bedded in current political regime. In China, the longtime cultural legacy of feudalism mingled with the absence of a “civil society” has ended up with an institutional endowment that is different from any existing regime known on earth. Skewed and distorted, this institutional foundation is doomed to deviate from formal mechanisms of institutions.

Culturally, China has a long history of the “subject society” in which “the land of the earth belongs to the king and the people on the land are also subjects of the king.”<sup>55</sup> In traditional Chinese civilization, the monarchs enjoy privileged rights that are supreme and paramount. The ruling class celebrates the feudal ethical code of “the three cardinal guides and the five constant virtues.”<sup>56</sup> Among the “three cardinal guides”, “ruler guides subject” is the overriding discipline. This ethical code used to be the guiding principles to reconcile various social interests and serve as spiritual instrument for the ruling class to regulate the people. Under this institutional arrangement, the general population was stratified into a rigid hierarchy in which those in lower class are supposed to show unconditional submissiveness to those in higher ranks, hence, bureaucracy and matriarchy connived while fostering servility. Accordingly, in this “subject society”, it is not surprising that the “rule of the superior’s will” would become the social norm widely accepted in practice.

After decades of socialist revolution and civil war, the PRC was established in 1949 when the Kuomintang lost on the mainland. The Communist Party of China (“CPC”) began to lead its people to initiate a series of crusades to “eradicate all the feudalist remnants and build a new society”.<sup>57</sup> During the course of the campaign, most “feudal” ethical values and codes were assailed and disdained. In spite of this, the long time crusade seems not yet to have succeeded in annihilating all the “feudalist remnants,”<sup>58</sup> probably due to the scale economy effect in following these deeply embedded conventions.<sup>59</sup> Particularly, these “feudalist remnants” can resurface (if they were previously contained) during the course of one-sided market reform under a desynchronized transition of parallel political institutions and ideologies.

Politically, the establishment of the PRC did not necessarily mean that the conventional political paradigm was automatically removed from the regime or the mind of the people. Although the government system adopted a similar kind of “checks and balances” mode of governance,<sup>60</sup> this

<sup>55</sup>Refers to a traditional Chinese norm from the ancient poetry anthology “诗·小雅·北山” available at [http://www.chinactwh.com/Article\\_Show.asp?ArticleID=2039](http://www.chinactwh.com/Article_Show.asp?ArticleID=2039) (in Chinese, accessed August 16, 2007)

<sup>56</sup>In the “three cardinal guides and five constant virtues” (sān gāng wǔ cháng, 三纲五常), the “three cardinal guides” (San Gang) refers to “ruler guides subject (君为臣纲), father guides son (父为子纲), and husband guides wife (夫为妻纲)” and the “five constant virtues” (Wu Chang) refers to “benevolence(仁), righteousness (义), propriety (礼), wisdom (智) and fidelity(信)”. This ethical code was used by the feudalist ruling class to repress the people in the hope of transforming them into submissive servants. See, Dong Zhongshu (from West Han dynasty, China), “Chun Qiu Fan Lu” (春秋繁露). See, e.g., Chinactwh.Com, “About the Three Cardinal Guides and Five constant Virtues,” available at [http://www.chinactwh.com/Article\\_Show.asp?ArticleID=1842](http://www.chinactwh.com/Article_Show.asp?ArticleID=1842) (in Chinese, accessed August 16, 2007)

<sup>57</sup> Feudalist remnants refer to all perceived undesirable cultural and institutional legacies inherited from the pre-revolutionary era including, among others, the three cardinal guides and five constant virtues, bureaucracy, matriarchy, personal cults, and so on.

<sup>58</sup>The CPC leadership has long been aware of the existence of “feudalist remnants” in the party system. For example, in his address to the congregation of the CPC Central Committee Political Bureau held on August 18~23, 1980 in Beijing, the late CPC senior leader Deng Xiaoping pointed out that “although our party has undergone twenty-eight years of new democratic revolution, it is still inadequate in eradicating feudalist remnants embedded in our ideological and political organs.....Now we must explicitly define our mission in continuously eradicating feudalist remnants.....” See, Deng Xiaoping, 1980, “*Reform on the Leadership Regime of the Party and State*” (Speech), The Congregation of the CPC Central Committee Political Bureau, August 18~23, Beijing.

<sup>59</sup> See, e.g., North, 1990, “Institutions, Institutional Change, and Economic Performance”, *supra* note 17

<sup>60</sup> Within the Party system there are “checks and balances” organs such as the discipline department and the organization department while without the party system there are People’s Congress, People’s Political Consultative Congress, and the Administration.

system still fails to evade the “rule of the superior’s will” which also challenges the democratic process within and without the ruling party system.<sup>61</sup> This sometimes makes the “checks and balances” system fail to perform any function, and accordingly the party constitution exists in name only.<sup>62</sup> This fundamental characteristic of current political institutions significantly reduces the cost of unintended transactions at various nexus of the public power chain and accordingly increases the expected gain from breaching formal institutional contracts. The equilibrium of the transactions may be reached at the acquiescence in the fait accompli of the transformation of “public power” into private one. In a sense, this type of institutional characteristic reinforces, rather than restrains, the negative effect of cultural norms inherited, and vice versa.

Thus, it seems logical a reasoning that for the prevalence of the QGZ, the undesirable part of cultural legacy is not the only culprit to blame, as the negative part of cultural effect would have been balanced given the presence of a self-enforcing political governance. It seems that in order to extricate from this predicament, parallel transition of cultural and political institutions is an imperative, particularly the establishment of a “civil society”. In so doing, the CPC has been striving over the decades to promote reform in the political governance of the state and the corporate governance of the SOEs. Institutional change can follow either an exogenous path or an endogenous one. In a regime with ingrained vested interests which will be harmed by a change, an endogenously incremental transition is often cumbersome. In other words, the efficacy of path dependence mode of institutional reform depends on where this reform starts with.

#### 4. *The QGZ in Telecommunications ?*

Based on analysis above, it can be broadly concluded that in China the general status of the enforcement of political and cultural institutions tilts toward the cultural dimension in the enforcement space (*Figure 2*). In other words, there supposedly existed an incompatible cultural mechanism of institutions which, to a certain degree, functioned as the alternative to the formal mechanisms of institutions. As mentioned previously, the degree to which this general atmosphere exerts influence on a certain industry is contingent upon the sector-specific institutional environment. Since sectors vary from each other in terms of regulatory regime, corporate governance, industry norms, and vested interests, the general atmospheric influence on each can vary accordingly.

Telecommunications is not only a traditional industry in terms of its historically government-monopolized nature but also a nascent industry in which technological change is among the most dynamic. Since 1994, China’s government has successfully transformed its telecommunication sector from government-operated monopoly into government-regulated-and-dominated oligopoly. This institutional change reflects the government’s intention to bring up the industry performance through a market-driven mechanism. In line with this objective, the central government has taken actions in reforming the regulatory regime at the sector level and property rights at the corporate level. Nevertheless, mirroring one-sided market reform at economy level, government efforts in pushing forward sector-specific institutional change in telecommunications seems more or less to be centered on the formal dimension.

In China, economic liberalization under political constraint has led to distortions of market conduct as well as regulatory activities, i.e., deviation of firms from profit maximization and regulators from public interest.<sup>63</sup> Interacting with the macro political-cultural institutional environment, the sector-specific institutional arrangement in telecommunications can exert direct influence on firms’ behavior. The incumbent operators, all of which are government-dominated SOEs, have demonstrated somewhat peculiar behaviors toward such arenas as price rivalry,

<sup>61</sup> See, e.g., ChinaNews.Com, “Analyzing the *Qian Gui Ze* within Party System: Party Constitution is Pigeonholed and Public Power is Privatized into Private Power”, available at <http://www.chinanews.com.cn/gn/news/2007/01-15/854169.shtml>, also available at <http://politics.people.com.cn/GB/1026/5283613.html> (in Chinese, accessed July 1, 2007); Chinanews.Com, “*Qian Gui Ze* within Party System Sabotage the Party Discipline and State Laws and Cause the Corruptive Style of Party Members”, available at <http://www.chinanews.com.cn/gn/news/2007/01-15/854191.shtml> (in Chinese, accessed July 1, 2007).

<sup>62</sup> *Ibid.*

<sup>63</sup> See, e.g., Xia, 2006, “Head-to-Head or Hand-in-Hand”, *supra* note 5.

infrastructure investment, network interconnection, and universal service obligations.<sup>64</sup> These behaviors have proven to be pro-efficiency in some cases but anti-efficiency in many others. Despite the possible variance in underlying incentives, one common characteristic of these behaviors is that they all seem to be influenced by an “implicit law” imbedded in the current socio-economic and political system. Unlike a regular explicit system of rules and laws which are relatively easier to understand, this “implicit law” is difficult to fathom.

#### IV. Forces in Determining Resource Allocation and Market Behavior

Utilizing the analytical framework developed in *Section II* and the assessment of general enforcement condition of institutions at economy-level in China in this section (*Section III*), this section starts to look specifically at the telecommunications industry, trying to identify various forces (market, regulatory, administrative, or the QGZ) and gauge their influence on market behavior and hence industry performance.

As argued in our previous work, the interpretation of market conduct in China relies on a “system approach”, i.e., the synthetic consideration of political, legal, regulatory, socio-cultural, economic, and technological elements.<sup>65</sup> This paper streamlines them into two sets of elements, i.e., macro-level elements (i.e., *political* and *cultural*) and sector-specific elements (i.e., *regulatory regime*, *corporate governance*, *industry norms*, and *vested interests*). *Section III* already reviewed the fundamental characteristics of the macro-*political* and *cultural* elements, concluded that the QGZ may arise when the level of enforcement of political dimension is inadequate. Based on this estimation, this section looks at the sector-level elements. Broad in meaning as they may be, these elements paint a sketch of sector-specific institutional endowment and have to be first taken close look at before moving on to identifying forces in determining resources allocation and market behavior.

##### 1. *Sector-Specific Institutional Change and Its Dynamics: Regulatory Incentive and Regulatory Governance*

*Section II* already briefly reviewed the evolution of formal institutions in telecom sector in China. By tracking the process of changes in sector-specific formal institutions (*regulatory regime* and *corporate governance*), what is clearly sensed is the government’s intention to establish a cohesive regulatory and corporate environment in which telecom carriers are supposed to compete as full market players (after property rights redefined and restructured) under effective regulation (after government-business separation). The fulfillment of this intention is conditional upon the presence of self-enforcing regulatory governance as well as a compatible parallel sector-specific cultural environment. In the absence of these prerequisites, however, it will be proved that the fulfillment of this intention has largely been compromised.

Particularly marked by the entry of China Unicom in 1994 and government-business separation in 1998, competition reform in the Chinese telecommunications industry over the past decade has mainly been centered on reform in regulatory incentives while little touching regulatory governance.<sup>66</sup> In other words, reform of the regulatory regime itself has been one-sided. If regulatory incentives are taken as stipulating the terms and conditions of institutional contracts, then regulatory governance is designed to cost-effectively enforce these contracts. Despite the fact that the level of self-enforcement of a sector-specific regulation is also dependent on general legal and judiciary conditions (primarily determined by political characteristics), the absence of a self-enforcing mechanism in a given regulatory regime alone would forebode the ineffectiveness of regulation.

It may be taken for granted that the divestiture of networks from the regulator (i.e., MII) would automatically lead to a separated government-business relation so that the MII can act as an independent regulator. Nevertheless, the truth is that the telecom business has never been separated from government in China due to at least two reasons:

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<sup>64</sup> *Ibid.*

<sup>65</sup> *Ibid.*

<sup>66</sup> This seems to mirror the general one-sided economic reform in which political governance remains intact.

- *First*, although the government reform of 1998 did result in the divestiture of telecom networks from MII, the supervisory authority of state assets of the carriers (who are all government dominated in terms of ownership structure) was only transferred from one government agency (MII) to another government agency (SASAC). The latter, as state-assets watchdog, may have conflicting goals with the industry regulator (MII).
- *Second*, even if physical asset ties were divested from the MII, then this is not true for some invisible ties such as woven interpersonal relations between the former line-ministry system and the industry. Thus, regulatory independence cannot be actualized simply as a result of the divestiture. On the contrary, government-business relations would become even more subtle.<sup>67</sup>

As competition watchdog, the MII's level of incentive in enforcing the laws may be inadequate for several reasons. First, the mission of the MII is yet to be clearly defined. Second, mechanism of compulsory enforcement is still absent which is reflected also in the general judicial system.<sup>68</sup> Third, and probably most important, the divestiture of telecommunications network from the supervision of the MII actually ensued in harmed departmental interest of the MII. If the first two issues are relatively easier to address, then the last one would entail even broader political maneuvering. Due to these factors, current telecom regulatory regime is congenitally deficient.

In China, the supervisory authority over the telecommunications industry involves various departments, with the sector-specific regulator (MII) at the center, though. In addition to the MII, other government departments that exert more or less influence on the telecom industry include:

- *State Assets Supervision and Administration Commission* ("SASAC"): Acts as state-assets watchdog, nominating senior executives of telecom carriers and overseeing the return on investment.<sup>69</sup>
- *CPC Organization Department*: Officially appoints and appraises senior executives of telecom carriers.

<sup>67</sup> For example, when the MII wanted to see competition take place as a result of industry restructuring, the SASAC as state-assets watchdog chose to play down the rivalry effect by switching key executives among the carriers.

<sup>68</sup> For example, when carriers breach the terms of institutional contracts, say, defaulting on a responsibility such as interconnection or USOs, the MII can do nothing but lobby. Eventually, issues in question would only be solved through political pressing.

<sup>69</sup> According to the Chinese government, the national State-owned Assets Supervision and Administration Commission of the State Council (SASAC) assumes several regulatory functions. First, it performs the responsibility of the investor as it guides and pushes forward the reform and restructuring of state-owned enterprises; supervises the preservation and increasing the value of state-owned assets for enterprises under its supervision, and enhances the management of state-owned assets; advances the establishment of modern enterprise system in SOEs and perfects corporate governance; and propels the strategic adjustment of the structure and layout of the state economy. Second, it dispatches supervisory panels to some large enterprises on behalf of the state and takes charge of daily management of the supervisory panels. Third, it appoints and removes top executives of enterprises, and evaluates their performances through legal procedures while either granting rewards or inflicting punishments based on their performances; establishes a corporate executive selection system in accordance with the requirements of the socialist market economy system and modern enterprise system; and perfects an incentives and restraints system for corporate management. Fourth, it supervises and administers the preservation and quantifies the value of state-owned assets under the supervision of SASAC through statistics and auditing; establishes and perfects the index system for the preservation and quantification of the value of state-owned assets and works out assessment criteria; and safeguards the rights and interests of the investor of state-owned assets. Fifth and last, it drafts laws, administrative regulations for the management of the state-owned assets, and draws up related rules; and directs and supervises the management work of local state-owned assets according to the law. See, e.g., State-owned Assets Supervision and Administration Commission of the State Council, People's Republic of China, <http://www.sasac.gov.cn/> (in Chinese) and [http://www.sasac.gov.cn/eng/eng\\_index.htm](http://www.sasac.gov.cn/eng/eng_index.htm) (accessed Jan. 7, 2007).

- *State Development and Reform Commission* (“SDRC”): Exercises macro-economic regulation and control, including holding public hearings on pricing in telecommunications.
- *Securities Regulatory Commission* (“SRC”): Sets and enforces rules regarding the public trading of securities and requiring public disclosure of corporate financial documents and records.
- *State Informatization Leadership Group* (“SILG”): Sets the national objective and strategy of informatization, and promotes productivity through the diffusion of information and communication technology.

The overlapping of supervision in the telecom industry gives rise to some coordination problems in terms of the general regulatory goal in telecommunications notwithstanding that multi-supervision also contributes to the balance of power. Taking price competition as an example, the MII, SASAC, and SDRC may have different objectives, if not contradictory interests. While the MII may support the idea of efficiency through competition, on the contrary, the SASAC may not fancy the same idea as it is concerned more with returns on state assets. Part of the evidence can be found from SDRC’s handling of personnel arrangement in senior management among carriers.<sup>70</sup> Similarly, the SDRC may be concerned more with the political economy of telecom tariffs such as the general socio-economic impact of telecom tariff. In view of above-mentioned facts, current regulatory governance is somehow both fragmented and ambiguous in jurisdiction. That is also to say, legislation in competition policy lags behind economic development.

At the corporate level, the formal dimension reform has resulted in three types of formal relationships (rivals, siblings, and partners) among incumbent carriers as demonstrated in our previous work.<sup>71</sup> As a matter of fact, if taking into account of informal dimension, the number of relationships has increased to four including:

- *Rivals* as market participants,
- *Siblings* as state-dominated SOEs,
- *Partners* as network operators, and
- *Factions* as inside-controlled SOEs.

Although at least three formal relationships are not at all designed to be contradictory with one another in terms of regulation, unfortunately, this is not what happens in actual industry practice as evidenced, among others, by difficulties demonstrated in interconnection and other resource-sharing activities as well as by firms’ orientation toward price rivalry and USOs.

## 2. *Industry Norms, Vested Interests, and the QGZ*

Taking the forms of accepted norms and customs, industry culture develops out of interactions between groups of individuals within the industry and the industry’s experience with the external environment. It can also be traced back to some initial conditions in the early development stage of the industry. Industry culture in telecommunications in China can first be traced back as early as the establishment of the PRC. As mentioned above, telecom service in China has historically been monopolistically operated and provided by the government. That is to say, the firm is the industry. Despite regional differences, China’s telecommunications industry in general used to be visualized as “servicing the people.”<sup>72</sup> The industry (or monopoly) typically enjoyed a

<sup>70</sup> Over the past several years, particularly since the transfer of personnel arrangement authority from the MII to the SASAC, most senior executives of the carriers have experienced a switch of position from their original companies.

<sup>71</sup> See also, Xia, Head-to-Head or Hand-in-Hand, *supra* note 5.

<sup>72</sup> In the era of the industry monopoly, all staff of the posts and telecommunications industry were uniformly dressed in straw green which used to symbolize the industry culture and image of servicing the people as demonstrated by the industry motto of the time which states “People’s Posts and Telecommunications Service the People.”

“hierarchical culture”<sup>73</sup> in which business processes were operated like a government organization. Technology in the early stage was similar to other labor-intensive networked industries such as the postal service. These, among others, made the industry develop a distinctive culture, often characterized by the tendency of being internally focused, government-dependent, and matriarchally staffed. Meanwhile, a highly internalized and integrated education and training regime and centralized planning system further strengthened this tendency.<sup>74</sup>

The shell of this internally-oriented and self-centered or exclusive culture solidified itself over roughly half a century until challenged by a series of breakthrough regulatory and technological shocks starting in late 1980s. Technologically, the industry has long been marked as traditional industry as opposed to a high-tech or emerging industry in terms of its production technology and the services it provided. However, technology advancement such as the advent of micro-wave, integrated circuits, and digital technology seemed to change the scene without notice. Economically, the industry has been emerging from a traditionally government-monopolized tertiary industry into a lucrative government-regulated oligopoly and a national cornerstone industry. During the course of these transitions, both process of production and the market environment<sup>75</sup> have changed. Accordingly not only is the conflict of values and assumptions in human side inevitable but also the redistribution of vested interests<sup>76</sup>.

Thus, the successful cultural transition is contingent upon the reconciliation of various values and interests. What would therefore particularly emerge as transitional impediments, among others, may lie in vested interests, government-dependent mentality, cultural separatism, and the inadaptability to regulation.<sup>77</sup> Partly as signs to neutralize these issues, the industry was separated from the regulator first economically (government-business separation in 1998) and then politically (separation of state-assets to the SASAC in 2004). Whilst the first separation did not change much of the industry culture, the second separation did result in a series of aggressive actions taken by the state-assets watchdog (i.e., SASAC). Part of the evidence can be found in the SASAC’s maneuvering in the “major-peer-switches” of senior executives among the incumbent carriers. This exceptional movement in personnel arrangement is presumably intended for the

<sup>73</sup> According to the “competing values framework”, there are four types of organizational culture based on two sets of opposite values, i.e., the extent to which (1) “flexibility and discretion” vs. “stability, order, and control”, and (2) attention to “internal affairs” vs. “external environment” are valued. They are “clay culture” (flexibility and discretion, internal focus), “hierarchy culture” (stability and control, internal focus), “adhocracy culture” (flexibility and discretion, external focus), and “market culture” (stability and control, external focus).

<sup>74</sup> Before 1998, industry-specific sponsored post-secondary education used to be an accepted norm of the national higher education system. There were six Posts and Telecommunications Universities (each of them is abbreviated as a “You” in Chinese pronunciation) at that time all supervised by the former Ministry of Posts and Telecommunications. These “Yous” are in charge of training senior technical and managerial staffs for the industry, particularly the “Bei You” (Beijing University of Posts & Telecommunications) who were and still are meant to be one of the national-key universities and has until now been a major provider of technocrats and managerial elites to the sector. Factionists can be formed based on these “Yous” which in some cases can be exclusive to one another as well as to people recruited from outside the system. Meanwhile, the hierarchical status of an individual graduate is also assessed customarily based on the year of his or her graduation.

<sup>75</sup> These changes may include, among other, (1) the transition from monopoly to market competition in which members of a same matriarchal faction might become rivals in the market; (2) movement of labor forces in which senior technocrat and managerial staffs may come from other than the “You” system; (3) carriers and their divisions are supposed to transform from cost centers to profit orientation; (4) mainstream culture is gradually transiting to the pursuit of materialism and personal accomplishment.

<sup>76</sup> The existence of vested interest group has long been drawing attention of the CPC leadership as well as the general public. Jiang Zemin emphasized in his “7.1 Important Remarks” in 2001 that “...All party cadres must truly represent the people to properly utilize public power and mustn’t utilize public power to pursue private interests and form vested interest groups...” See, Jiang Zemin, 2001, “*On Three Represents*”, Beijing: Central Archive Press, page 162; See also, Yong Jiang, 2006, “*Beware of the Bloated Departmental Interests*”, Liao Wang, available at [http://news.xinhuanet.com/legal/2006-10/10/content\\_5183777.htm](http://news.xinhuanet.com/legal/2006-10/10/content_5183777.htm) (in Chinese, accessed August 13, 2007)

<sup>77</sup> The industry has long been used to following administrative commands or orders rather than regulations. For a long period of time, telecommunications was run under the matriarchal administration of the former MPT. It may take time for the consolidated industry to move from the matriarchal mentality toward a market-driven mindset.

promotion of cultural convergence as well as the avoidance of “malicious competition”<sup>78</sup> and cultural separatism.

Despite the fact that industry culture is generally stable, it often evolves in response to outside forces as well as deliberate attempts to change the institutional arrangement. Over the past decade, particularly since 1998, a series of government reforms, industry consolidations, and the government-propelled convergence in human resources ignited changes in industry culture in terms of assumptions and values held by individuals or organizations.<sup>79</sup> Along with these changes, however, some fundamental characteristics remained intact, among which, cultural separatism and vested interests have emerged as major concerns in bringing up the industry to the next level of reform. Cultural exclusiveness and vested interests are clearly in the way for the healthy development of the industry toward a primarily market-driven one.

While cultural separatism and exclusiveness can take place in every traditionally government-intervened industry in China, the configuration and dynamics of vested interests can vary from industry to industry. During the course of industry transformation in telecommunications, the composition of stakeholders in the industry evolved accordingly, characterized typically by the transition from the conventional “state-collective-individual” paradigm<sup>80</sup> in the era of highly centralized planning economy to the current paradigm of proliferated vested interests. Individuals or organizations that hold certain interests in the industry may range from former officials to private investors, government agencies to academia. Altogether these interest groups can exert influence on the industry-level institutional environment as well as on firm’s behavior.

To summarize, the sector-specific culture in Chinese telecommunications industry is now in the process of transition from a historically internal-focused, culturally exclusive, government-dependent, and factionist-staffed one to an emerging culture in which the inadaptability to regulation and vested interests are among major situational determinants in compromising legislation and the level of enforcement of any formal rules or regulations in this industry.<sup>81</sup> Given this circumstance, it is apparent that some kind of informal forces (or the QGZ) are currently playing an inevitable role, in one way or another, in accounting for the prevailing market behavior mindset.

### *3. Interpreting Market Behavior and Industry Performance: A QGZ Approach?*

Based on analysis above, it is clear that there have generally existed four types of industry-level forces in determining resource allocation or market behavior in China’s telecommunications industry which include:<sup>82</sup>

- *Regulatory force*: Primarily from the MII’s execution of regulatory rules, and also possibly from the SDRC’s role as macro-economic administrator (pricing in particular)

<sup>78</sup> This kind of competition, if any, may not be malicious whatsoever, depending on the lens through which a conclusion is to be drawn. For example, as mentioned above, as industry regulator, the MII may embrace competition as a means to achieve allocative efficiency while the SASAS, as state-assets watchdog may fancy the same idea.

<sup>79</sup> The industry culture seems to be in a process of convergence in which “Yous” gradually become more and more receptive to the outside. Along with stock listing, technology transfer, and the introduction of technical and managerial elites from outside the “Yous”, a rather diversified employee profile has been formed, thus ending the era of “Yous” dominating industry with “Bei You” at the core.

<sup>80</sup> In the era of the centrally planned economy, economic interests were tiered into three layers which represent the state, companies (or departments) and individuals respectively. This ideology of the distribution of interests was advocated by the Party and state until the rollout of the economic reform in early 1990s when the configuration of interest distribution has since been gradually diversified.

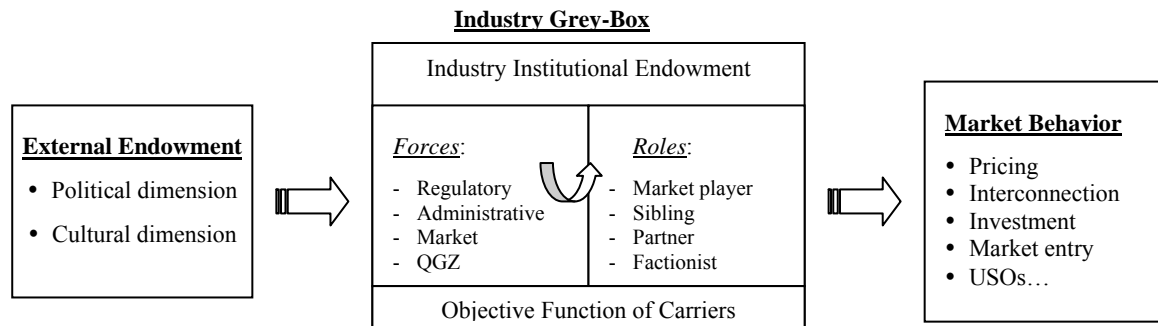
<sup>81</sup> Aware of this fact, the central government of China seems to begin in recent years to deliberately invite agencies and experts from outside the industry to provide advisory service for policy making purposes. For example, the allegedly forthcoming telecom act has been prepared by a team of experts from outside the industry. Despite this arrangement, vested interests can still emerge as an influential force in both the process of policy making and implementation.

<sup>82</sup> See also, Xia, “Head-to-Head or Hand-in-Hand”, *supra* note 5.

- *Administrative force*: Primarily from the SASAC's execution of power as the representative of the state-assets, and also possibly from initiatives of other departments at the central government's discretion.
- *Market force*: Primarily from the private incentive of firms and individuals to maximize private preference.
- *QGZ (informal force)*: Taking the form as industry norms and customs that are determined by fundamental assumptions and values held by members or groups of members who take an interest in the industry.

The existence of these forces is the consequence of current institutional environment (both formal and informal sides) within the industry. As a matter of fact, both the forces (of resource allocation) and roles (played by carriers) are products of the current sector-specific institutional endowment as reflected in the regulatory regime, corporate governance, industry norms, and vested interests. Actual actions taken by carriers depend on interaction between carriers based on their understanding of the industry institutional endowment (and in turn the existence and implications of the forces and roles) and the objective functions of the players.

Figure 3. Interpreting Market Behavior: An Input / Output Model



Source: author's research.

The decision process of carriers with regard to the interactions can be described as a non-cooperative game in which carriers determine their optimal strategies based on incomplete information about the rules of the game and the objective functions of the players involved. The rules of the game can be viewed as being implicitly given by the sector-specific institutional endowment while the objective of a firm is jointly determined by the sector-specific institutional endowment (exogenously) as well as the preference of corporate insiders (endogenously).<sup>83</sup> Due to the incomplete nature of information acquired by carriers as well as by outsiders, the decision process is an "industry grey-box" (as demonstrated in Figure 3). Market behavior is therefore predicted as the output (or equilibrium) of the "industry grey-box" which takes the external institutional endowment as input. This input/output ("I/O") model can serve as the basic framework for understanding the behavior of Chinese telecom firms and in turn industry performance.

The decision box is "grey" because of the incompleteness of information with regard to the extent to which the forces and roles interact and the exact way they exert influence on carriers. To predict the exact nature of a carrier's market behavior, it has to be based on the knowledge of the systemic dynamics of the "industry grey box". As common knowledge as it may appear to be, the information shared by industry players within the grey-box is more often of qualitative nature. Meanwhile, even though the grey-box is presumably common knowledge among the carriers, this does not necessarily mean that the knowledge is common to the general public whatsoever. Specifically, this incomplete information may include, among others, the general knowledge about

<sup>83</sup> The corporate objective of a firm can be viewed as the function of the industry's institutional endowment and the preferences of corporate insiders. That is to say, it depends how well agency problems are dealt with. In a neo-classical competitive market, the objective of a firm is simply to maximize profit, though.

the situations when formal rules may function as well as the situations when the QGZ may function (as indicated in *Table 1*). Notice that information presented in *Table 1* can only serve as general principles, the interpretation of a specific action should be approached on a case-by-case basis.

*Table 1.* Situations when Formal Rules or QGZ Tend to Function

<i>The situations when formal rules tend to function</i>	<i>The situations when the QGZ tend to function</i>
<ul style="list-style-type: none"> <li>• Areas with high political sensitivity;</li> <li>• Areas where there have existed a working supervisory mechanism with inputs from eligible public;</li> <li>• Interventions or commands from an agency that may enjoy substantial job-approval authority over carriers and their leadership;</li> <li>• Regulatory authority is strictly reinforced;</li> <li>• Areas where emerging culture (as opposed to conventional culture) dominates.</li> </ul>	<ul style="list-style-type: none"> <li>• Areas with high involvement of vested interest;</li> <li>• Areas when the terms and conditions of formal rules do not fit the actual market development;</li> <li>• Areas where the extent to which corporate insiders control is stern;</li> <li>• Areas where regulatory authority functions perfunctorily;</li> <li>• Areas where conventional culture (as opposed to emerging culture) dominates;</li> <li>• Areas involving innovation (in terms of both institutional and technological aspects)</li> </ul>

*Source:* author's research.

Despite the fact that efficiency implications of the I/O model itself are not black and white, there remain some general conclusions that can be drawn with regard to the impact of the current sector-specific institutional endowment on neo-classical allocative efficiency. Neo-classical economists see competition as the effective way to deliver optimal market outcome and the level of competition is therefore an indication of the possible market outcome. In light of this, it is apparent that the desirable situation to a neo-classical economist lies in the presence of telecom carriers acting solely as market players driven by market forces to compete under effective regulation. Nevertheless, current institutional arrangements have led to distortions in terms of the nearness of the telecom market to neo-classic competition. As a consequence of this institutional endowment, carriers play four roles amidst four influential forces. As mentioned above, these forces and roles interact with each other, and some forces reinforce a role (such as market force can reinforce a carrier's role of being a market player) while another weakens a role (such as administrative force can weaken a carrier's role of being market player), and vice versa (see *Table 2*).

*Table 2.* Interaction of Forces and Roles

	Market	Regulatory	Administrative	QGZ
Market Player	R	R	W	W
Sibling	W	W	R	R/W
Partner	W	R	R/W	R/W
Factionist	W	W	R*	R

*Source:* author's research

Note: (1) "R" denotes "reinforce", "W" denotes "weaken", "R/W" means the effects of "reinforce" or "weaken" is not that black and white. (2) Whether administrative force reinforces factionist role depends on the goal of the administrator, or specifically in Chinese case, the SASAC. It has been an unequivocal fact that over the years the SASAC has seemed to be happy with its position to quench rather than foster competition.

Every shaded grid In *Table 2*, can be treated as a basic situation in which a carrier plays a given role under a given force, notwithstanding that in the real world a carrier may be encountered by a hybrid of these basic situations. The thickened grids represent those who are in accordance with the goal of neo-classic efficiency while the remaining grids represent either weakening the goal or a vague effect. If we simply suppose that each grid turns up with an identical probability (1/16), then it can be predicted that Chinese telecom industry is at

most 3/16 (three out of sixteen) neo-classically market-driven.<sup>84</sup> If this is really the case, now the question is that, what has been driving the rest 13/16 portion of the industry? Or in other words, what other forces are behind the industry growth?

Over the past decade, China's telecommunications industry has witnessed an exponential growth in terms of both revenue and penetration at a rate much higher than general economic growth.<sup>85</sup> If market forces alone can not account for the growth then what on the ground can serve as alternative determinants. Although technological advances can partly explain this pattern of growth, there should also be other forces at work. In the absence of government directly sponsored investment (as the case before 1998), if holding technology aspect constant, the exponential industry growth can only happen in the presence of certain kind of contest among carriers.<sup>86</sup> This contest can take the form of either *neo-classic competition* or *government-sponsored rivalry* between factions. Recall that Chinese telecom carriers assume four roles (i.e., market player, sibling, partner, and factionist). Among these roles, although both roles of market player and factionist are prone to certain kinds of rivalry among carriers, the nature of the rivalry can be different:

- *First*, rivalry arising from carriers' roles as market players can easily be identified as being of neo-classical nature, and we therefore call it "*neo-classical competition*". Efficiency induced by this type of competition is by definition "allocative-efficiency".
- *Second*, rivalry arising from the roles of factionists cannot be explained by the neo-classical theory of firms but is approached in this article through the lens of new institutional economics, and we therefore call it "*neo-institutional competition*". Efficiency determined by this type of competition is defined as "neo-institutional efficiency".<sup>87</sup>

Despite the variance in nature, "neo-classic competition" and "neo-institutional competition" seem to be substitutable with each other in terms of serving the goal of industry growth (one indicator of industry performance), as the latter can perform a similar competition job when the former fails. Whilst this fact may be applauded by some competition advocates, one thing which must be born in mind is that the second mode of competition may be unsustainable and not genuine as it is based on an unsustainable institutional environment in which carriers may be insider-controlled. After all, you may not expect this government-sponsored inter-factionist competition to last forever.

As a matter of fact, regulatory efforts over the past decade failed in almost every aspect of industrial regulation in telecommunications in China. These efforts include, among others:<sup>88</sup>

- *Market entry*: The evidence of the MII's failure in market entry regulation can be found by looking at, among others, the entry of XLTs (by China Telecom and China Netcom)<sup>89</sup> and the sleeping wireline license held by China Unicom.<sup>90</sup>

<sup>84</sup> This does not take into account the possible market or regulatory failure within this "3/16" market-driven segment. Despite its super simplified nature, interestingly, this ratio roughly coincides with the percentage of state-ownership in the industry's capital stock. State-ownership accounts for roughly 12/16 of the industry capital stock. If subtracting 12/16 from the stock, the remaining 4/16 of shareholders encompass individual and institutional investors domestically and abroad, this is notwithstanding that some of the domestic institutional investors may also be government-dominated SOEs.

<sup>85</sup> See, e.g., MII, Statistical Data, available at <http://www.mii.gov.cn/col/col27/index.html> (in Chinese, accessed August 16, 2007)

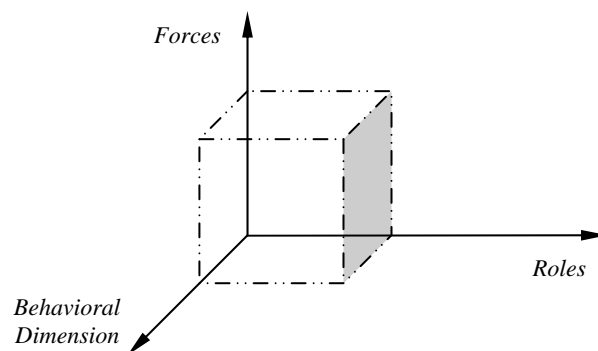
<sup>86</sup> As a matter of fact, it is exactly the case in China's telecom industry where the growth rate, among others, has been a primary factor for the job-approval-rater to evaluate the performance of senior management of the carriers.

<sup>87</sup> It may be an interesting topic to distinguish between the contributions of allocative-efficiency as opposed to neo-classic efficiency to the ultimate industry performance in telecommunications in China. This work may be subject to quantitative methods based on exhaustive panel data.

<sup>88</sup> For detailed description of the status of competition in Chinese telecommunications industry, see, e.g., Xia, Head-to-Head or Hand-in-Hand, *supra* note 5.

- *Price regulation*: Before September of 2005 when the MII and SDRC jointly issued price-cap regulatory rules, most basic telecom services, including mobile communication services, were subject to government-pricing (in the case of dominant carrier) or directive-pricing (in the case of China Unicom and China Railcom). However, it seemed that no mobile carriers cared to observe this regulation and thus broke the rule one after another by cutting tariffs “implicitly”.<sup>91</sup>
- *Interconnection*: Dominant operators tend to be unwilling to provide effective interconnection with dominated firms by either postponing the connection or compromising the quality of service (“QoS”).<sup>92</sup>
- *Universal service obligations (“USOs”)*: Universal service regulation is among the most strenuous regulatory tasks encountered by the MII as carriers tend to take refuge in funding deficiency to compromise the fulfillment of USO tasks assigned to them. The goal of the ongoing Village Access Project (“VAP”) was eventually accomplished only under substantial political pressure.<sup>93</sup>

Figure 4. Behavioral Magic-Cube



*Source*: author’s research.

These facts further strengthen the argument of neo-institutional industry growth. Recall that in *Table 2* we composed the basic situations (each represented by a grid). By adding the dimension of regulatory effort areas (which may represent the basic aspects of firms’ market behavior) to the matrix in the *Table*, we come up with a three-dimensional space with *roles*, *forces*, and *regulatory*

<sup>89</sup> China Telecom and China Netcom entered the wireless market right after the split in 2002 by manipulating the terminology of “technology”, avowing that XLT is wireline technology and therefore the XLT service is wireline service. Technocrat as the MII officials may be, allowing the manipulation of terminology is no different than playing the ostrich. Some industry observers speculate that the regulator might have been captured by interest groups.

<sup>90</sup> China Telecom’s second divestiture, the former MPT attempted to bring China Unicom into wireline local market by awarding the latter, along with its mobile license, a wireline license. The purpose of this attempt backfired because of China Unicom’s insufficiency in capital and difficulty in securing interconnection with the incumbent local wireline operator, the former China Telecom.

<sup>91</sup> Implicitly taking the forms of service-package-plans, rebates, free terminal equipment, free minutes, and direct price discounts, mobile carriers have been breaking price regulatory rules one after another since the turn of the century. As a matter of fact, the MII eventually scored a lucky hit in price regulation as over the years a certain level of price rivalry happened in this industry under, but not because of, regulation.

<sup>92</sup> The undesirable status of interconnection regulation substantially affected carriers’ strategies in network deployment by partly stimulating industry wide duplicate construction in network infrastructure which has sunk hundreds of billions of RMB. For detailed calculation of the duplicate investment, *See*, Xia, “Head-to-Head or Hand-in-Hand”, *supra* note 5.

<sup>93</sup> For detailed description of the status of universal service regulation in China, *see* Jun Xia and Tingjie Lu, 2005, “*Universal Service Policy in China: Building Digital Bridge for Rural Community*”, The 33<sup>rd</sup> Telecommunications Policy Research Conference, Arlington, VA, USA; Jun Xia, 2007, “*Toward a Sustainable Regulatory Regime for USOs in China: Current Status, Support Mechanisms, and Regulatory Governance*”, *I/S: A Journal of Policy and Law for the Information Society* 3(1): 147-181; Jun Xia, 2007, “*Regulatory Incentive and Regulatory Governance: An Institutional Perspective on USOs in China*”, The 35<sup>th</sup> TPRC, Arlington, VA, USA.

*areas* as each dimension (*Figure 4*). This magic-cube like figure is actually the expansion of *Table 2*. It seems that by picking a right geometrical pattern, a certain area of market behavior is predicted.

## V. Conclusions

One-sided economic liberalization with the fundamental political regime untouched in China has resulted in a specious market economy and a skewed institutional environment in which firms, often government-dominated, are supposed to compete under confused roles. In this case, standard economic theory seems to help little in interpreting market behavior and, consequently, market performance as both private and public choices seem to be distorted in terms of deviation of firms from maximization and regulators from public interest. If viewed through the lens of new institutional economics, all of these behaviors involve contracting problems.

In the case of telecommunications in China, the incumbent operators, which are all government-dominated SOEs, have demonstrated somewhat peculiar behaviors toward such arenas as market entry, price rivalry, infrastructure investment, network interconnection, and universal service obligations. These behaviors have proved to be pro-efficiency in some cases but anti-efficiency in many others. Despite the possible variance in underlying incentives, one common characteristic of these behaviors is that they all seem to be influenced by an “implicit law” or the QGZ which is imbedded in current socio-economic system. Unlike a regular explicit system of rules and laws which are relatively easier to understand, this “implicit law” is difficult to fathom. One way to address the issue may be to take a systematic institutional perspective.

The objective of this paper is to interpret market behavior and hence industry performance in the Chinese telecommunications industry from the perspective of institutions, particularly informal institutions, to shed light on possible directions for future reform and provide lessons which can possibly be drawn by countries elsewhere with similar situations. To this end, we constructed an analytic model based on which how the implicit law is evolving as a major force in resource allocation in general and a major determinant in telecom industry performance in particular is carefully investigated. Instead of using the conventional idea of treating the institutional endowment of a nation based on a rather balanced composite of elements, this paper adopted a model which is based on a two-tiered methodology. First, the general status of enforcement of institutions at the economy-level is determined by treating the institutions of an economy as comprising of two general dimensions, i.e., *political* and *cultural*, and hence gauging the relative level to which the formal and informal institutions are enforced. Second, sector-specific institutions are treated as comprised of four basic elements: *regulatory regime*, *corporate governance*, *industry norms*, and *vested interests* which interact intricately with each other as well as interact externally with the economy-level institutional endowment.

By means of this two-tiered analytic model, it is proved that the general enforcement status of institutions in China leans toward the informal or *cultural* dimension while the enforcement of formal or *political* dimension is highly compromised due to the absence of a clearly defined institutional objective as well as a self-enforcement mechanism, thus leaving much room for undesirable parts of China’s cultural legacy to permeate the general institutional system and sometimes disable the functioning of the formal mechanisms. In a typical situation where “public power” is privatized as “private power”, the leadership of businesses or public organizations become “insiders” who actually control over the process of economic activities as well as the proceeding of policy making. This situation is further aggravated to be even more anti-productive when this economy is basically still rooted in a “subject society” in which the “rule of will power” makes the winners take all. Consequently, formal rules are usually not adequately observed, instead, individuals or organizations often follow certain kinds of QGZ. Given this context, the enforcement status of institutions at industry level not only seems to mirror that at economy level but also is further complicated by the sector-specific institutional endowment which has been brewing confused multiple-roles (*market player*, *sibling*, *partner*, and *factionist*) for firms who are to behave under confused multiple-forces (*market force*, *administrative force*, *regulatory force*, and the *QGZ*). The roles and forces are confusing because each of them seems to be sending an equivocal signal to the market.

Based on this macro and sector-specific institutional configuration, an “input and output model” is developed for the interpretation of market behavior and industry performance in Chinese telecommunications industry, in which the interaction process of carriers, who usually share a common knowledge regarding the implication of sector-specific institutional endowment as well as the objective functions of the carriers, is treated as an “industry grey box”. Hence, the behavioral dimension of the Chinese telecom market is further decomposed into basic situations which are supposed to be much easier to predict. Any actual market conduct of firms can therefore be treated as a hybrid of the basic situations. It is this decomposition that helps eventually identify what seems to be the real explanation, in addition to government sponsored investment, to the exponential industry growth over the past decade, pointing out that it is mostly *neo-institutional competition*, rather than *neo-classic competition*, that has been fueling network expansion as well as market penetration.

It is arguably concluded that one-sided economic liberalization and industry deregulation in China has led to neither sustainable nor genuine and meaningful competition in telecommunications in the absence of self-enforcing formal mechanisms of institutions as well as the development of parallel market-oriented cultural institutions; that the current socio-cultural environment itself might have been a direct consequence of the one-sided reform and improvement may not come before further efforts in political reform; that even if there is certain level of neo-classic competition, this competition may not be sustainable under current institutional endowment. In this sense, the mission of economic reform faced by China seems not to merely cease at *neo-classic market reform*, instead, China is probably encountered by the challenge of *neo-institutional market reform* in which firms are to become real market players under a scientifically designed self-enforcing institutional environment.