

CRGP Working paper #0068**Relational governance for large infrastructure projects: Case studies of Beijing T3 and Bird's Nest projects in China**

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ABSTRACT

Large projects in China have aroused international attention in the last decade. Large, global projects involving multiple firms and public organizations generate impacts on a wider socio-political environment and can trigger opportunistic behavior by stakeholders. Previous studies suggest that relational governance can be a complementary mechanism to formal contracts and can promote common problem-solving behavior that helps overcome turbulence in the course of projects. But the sources and elements of relational governance remain understudied. To fill the gap, the paper develops a model consisting of the level of integration and organizational control, longevity of relationship, governmental ties, and idiosyncratic arrangements. Two of China's highest profile large projects—Beijing T3 and the Bird's Nest Olympic Stadium—were used to explore the governance mechanisms underlying the projects' progress in the face of technical challenges derived from their unique designs. Relational governance emerging from the structure of China's socialist society was found to provide continuous support for reciprocal and

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obligatory cooperation in the relationship between the State and State-Owned Enterprises. The weakness of relational governance in the context is discussed.

Keywords: Relational governance, large projects, China, Beijing Airport Terminal 3, Beijing National Stadium

INTRODUCTION

Large infrastructure projects are complex, temporary systems with networked organizational forms that have attracted scrutiny by scholars from both organization and management studies (Scott, 2011). Large, global projects are becoming increasingly prevalent with the rise of less developed regions. Nevertheless, they are often plagued by delays, budget overruns, re-negotiations and disputes (Miller & Lessard, 2001a). Large projects are characterized by high levels of uncertainty, interdependency, and asset specificity, all of which create unique challenges to coordination and governance. They comprise a web of actors from multiple sectors including the government, designers, contractors, suppliers, and, sometimes, foreign actors. These actors who must perform many interdependent tasks often have conflicting interests and different priorities. Moreover, these projects often involve high levels of technical complexity and uncertainty as well as significant capital investment that can only be recouped long after the project is completed and enters an extended operations phase.

The characteristics of large projects—especially their size, in-situ manufacturing and/or assembly and complexity—necessitate widespread external contracting for specialized engineering, construction, financial and other services and can give rise to opportunistic behaviors. However, for the same reason, legal/contractual governance alone is insufficient, because: (1) the contracts are necessarily incomplete; and (2) negotiation power shifts significantly after contracts are signed. Therefore, other mechanisms of governance must be explored and employed simultaneously.

Relational governance, mechanisms undergirded by existing normative and cognitive institutions, can support relational contracting among parties. It is a bonding and commitment resting on relationship and trust (Jeffries & Reed, 2000) and thus can help overcome turbulence

in the course of projects (Rahman & Kumaraswamy, 2002; Henisz, Levitt, & Scott., 2012). The relational perspective of governance is important to both theory and practice but is relatively understudied (Carson, Madhok, & Wu, 2006). In particular, how to incorporate relational governance in managing large construction projects as well as the sources and elements of relational governance is less understood as compared to relational contracting and partnership among non-project-based organizations such as apparel firms (Uzzi, 1997), outsourced R&D in technological intensive industries (Carson et al., 2006), and buyers and suppliers in the manufacture industry (Zhou, Poppo, & Yang, 2008).

This paper aims to further our understanding of relational governance in large projects and thus selects two large projects in China as case studies. The reasons are twofold. First, large projects in China have drawn international attention. In recent years China has been one of the focal areas of the world's construction industry. At the end of 2010, four out of world's twenty most expensive infrastructure projects in progress were in China, according to The Associated Press (Kurtenbach, 2010). How China, an economically and technologically backward nation thirty years ago, is able to deliver some of the most technologically complex and expensive projects in the world becomes an intriguing question¹.

Second, China's infrastructure projects have used an organizational arrangement of high internalization and vertical integration (i.e., government planned, financed, designed, and constructed) in its command economy. Even after its economic reform, the State is still in charge of large infrastructure projects that are relevant to national development strategies and require government funding. According to the Statute entitled "Measures for the Administration of National Key Construction Projects" promulgated in 1996, the State "coordinate[s], guide[s] and supervise[s] the work for national key construction projects" (Article 21) and mandates local

governments provide supports in forms of land and funds. If they fail to do so, the State “has the authority to suspend the approval of any new construction project in the locality for the next year” (Article 22). In addition, the State allows negotiated bidding or tender invitations to be used in these key projects. This shows strong legal support for the success of projects, under which the State preserves great decision-making power in the sector of construction projects, including determining “key” national projects. This deliberately preserved flexibility in China’s regulatory systems creates room for relational contracting practices that have were in place long before formal contract laws were promulgated in China. Therefore, China’s large, complex, and novel projects that have proceeded at a surprising speed without any obvious, reported disputes or major flaws can shed some light on how relational governance contribute to project success. More importantly, the institutional context where relational governance is emphasized offers insights on how legal/contractual and relational governance constrain opportunistic behavior differently. This leads to a discussion on the weakness of relational governance in large projects.

We have studied two high profile projects in China—Beijing Airport’s Terminal 3 (T3) and the Bird’s Nest Olympic Stadium (Bird’s Nest)—to explore the governance mechanisms underlying the projects’ progress in the face of novel technical challenges derived from their unique designs. Both were successful in terms of schedule and scope and finished on time for the Olympic Games in China in 2008. Although one of them adopted a BOT concession model while the other adopted competitive bidding for construction, we found similar relational governance practices. We argue that relational governance (i.e., relational ties that generate commitments) contributed significantly to the success of these large Chinese projects, given the fact that the current large design and construction firms are spinoffs from government functional departments and have historical ties and paternal-subordinate relations with the State.

By presenting the two high profile projects, this paper illustrates for Western readers how large projects are managed in China. It develops a framework to examine the sources and elements of relational governance in the Chinese projects, which are deeply rooted in the institutional context of China. Because of this, the findings from these cases are not necessarily transferable to other contexts. Finally, the paper suggests that relational governance can effectively overcome unexpected hurdles and technological difficulties and facilitate information sharing and learning among contractual parties in the face of uncertainty. However, for large development projects that aim to provide public goods and improve public welfare, sufficient legal/contractual governance needs to be in place in order to curb collusion that can derail the fundamental goals of the projects.

THEORETICAL BACKGROUND

Large Projects and Their Governance

In the literature of large projects, various terms, such as complex project (Barlow, 2000), major project (Morris & Hough, 1987), giant project (Grün, 2004), megaproject (Flyvbjerg, Bruzelius, & Rothengatter, 2003), large project (Miller & Lessard, 2001a, 2001b) have been used to describe projects with multiple, large organizational actors involved in delivering a large-scale complex system or deliverable, e.g. an airport terminal or a power plant. Organizations participating in a large project include multiple firms, public organizations, authorities and political decision-making bodies – and often also several discrete clients or owners (Grün, 2004). Organizations have different objectives, generally some conflicting ones, and they exhibit changing priorities while being subject to the impacts of a wider socio-political environment (Morris & Hough, 1987; Williams, 2002; Grün, 2004). The literature on large projects generally reports failures. Flyvbjerg et al. (2003) present convincing data to show that the majority of large

projects encounter cost overruns and lower than predicted demand, and they fall behind schedule.

An emerging discourse focusing on project governance can be identified. This research is separated into two clusters. Firstly, several articles address the question of what kind of external governance large projects should be subjected to by their owners and other powerful stakeholders, such as regulatory actors (Association for Project Management, 2004; Crawford, Cooke-Davies, Hobbs, Labuschagne, Remington, & Chen, 2008). This stream of research adopts the assumption that large projects are strategically too important and risky to be allowed to operate highly autonomously. Secondly, an increasing number of scholars stress the importance of governance that is internal to a large project. In particular, such contributions focus on how core project management techniques such as schedule and risk management and control of progress payments can – or should – be complemented with additional governance mechanisms typically neither addressed in project management research nor project management practice (Winch, 2001; Miller & Hobbs, 2005). Such mechanisms include, for example, practices for goal alignment, information sharing, and problem resolution. In essence, internal project governance sheds light on how the owner of a large project can ensure the keeping of promises throughout the entire project delivery chain, often consisting of as many as several hundred firms, in the face of uncertainties and unexpected exceptions (Orr & Scott, 2008).

To continue this line of research and deepen our understanding of internal project governance, this study focuses on relational governance, a concept widely discussed yet still relatively abstract and ill-defined—beyond the idea that recurring transactions generate a shadow of the future to moderate opportunistic behavior—in much of the extant transaction cost economics and legal contracting literature (e.g., Williamson, 1979). Relational governance

establishes a foundation for collaborative processes that can enable project actors to deal with unanticipated events and problems collectively (Henisz et al., 2012). It rests on relational contracting and emotional engagement generating reciprocal cooperation and motivating project actors to work together in the face of project turbulence (Miller & Lessard, 2011a). Therefore, exploring the mechanisms of relational governance and their mobilization empirically contribute to a more comprehensive understanding of the cultural and normative aspects of project governance.

Relational Governance

Based on institutional theory (Scott, 2008), Henisz et al. (2012) categorize governance mechanisms into regulative, normative, and cognitive institutional supports. Regulative institutional supports rest on specified contractual mechanisms providing legal and financial incentives to mitigate opportunistic behavior. Based on perspectives of transaction cost, regulatory governance mechanisms can mitigate high risks under unified governance structures or by introducing third party intervention and commitment (Williamson, 1979). Regulative governance mechanisms rely on formal processes to generate cooperation; in contrast, normative and cognitive mechanisms rely on informal processes that appeal to collective group norms and shared personal values.

Normative and cognitive mechanisms support relational governance that emerges from repeated exchanges, shared values and identities, mutual agreements, and social norms and functions as a complement to regulatory governance (Poppo & Zenger, 2002). Sources of relational ties can be endogenous and exogenous (Li, Yao, Sue-Chan, & Xi, 2011). One form of relational contracting is the internalization of control, replacing the autonomy of contractual parties with hierarchical authority and organizational control (Williamson, 1979). For instance,

to reduce transaction costs, actors can actively establish cooperative ties through organizational agreements such as strategic alliances or vertical integration (Dyer & Singh, 1998). By doing so, contractual relationships are transformed into partnerships and employment relationships and firms can employ organizational controls to constrain opportunistic behavior.

Moreover, embeddedness in a pre-existing social group and repeated transactions contribute to relational tie formulation. Repeated interactions among partners accumulate mutual obligation through social exchange and mutual understanding that facilitate predictability of each other's behavior (Gulati, 1995). They also generate normative pressure for conformity to expectations once actors are granted the "trustworthy" status in order to maintain this reputation (Gulati, 1995; Poppo & Zenger, 2002). Thus, a key determinant of relational governance is the *longevity of relationships*, a history of working relations from which norms develop over time (Poppo & Zenger, 2002).

On the other hand, the external institutional framework can compel social actors to form one type of tie rather than other types (Li et al., 2011). The social context of the relations determines that certain relational ties add surplus and symbolic value to the contractual value of an exchange. Based on the characteristics of relational ties that channel valued resources and enhance the outcome of actions (Lin, 1999), relational ties generate greater value when located in certain strategic or hierarchical positions: (1) where useful information about opportunities is available; (2) with power derived from decision-making authority or access to valued resources; (3) with social credentials that are perceived by other actors as certifications; and (4) that are symbolic representations of identity and recognition that provide emotional motivations and entitlement to opportunities or resources.

This concept is important in the Chinese context where social relationships (guanxi) are crucial in both personal lives and social exchange, which is termed “the art of guanxi” by Mayfair Yang (1989). Yang pointed out that the art of guanxi is used in China as a counter-technique of power to re-direct resource distribution under the state redistributive economy. Although there is condemnation for the self-interested use of guanxi in cases of corruption and embezzlement, the popular discourse is actually mixed with admiration for successful mobilizations of guanxi that rest on the traditional Chinese ethics and kinship culture of reciprocity and obligation. The art of guanxi is closely intertwined with the state redistributive economy under which the power of resource distribution, decision-making, sanction, and certification is centralized in government agencies or related government organizations. As a result, relational ties with government-related actors possess much higher value than other social ties. In addition, because the Chinese government is both the judge and the participant in transactions, firms strive to cultivate ties with the government through which resources and stability are obtained (Li et al., 2011).

This is particular salient in the context of the construction sector where the State controls the market. For contractors or suppliers, participating in national key construction projects means much more than earning the value specified in contracts. Entering a relational tie with the State generates much greater value by acquiring access to “insider” information, major decision-makers, social credentials, and public recognition. More importantly, it resembles being granted a trustworthy status that opens up opportunities on other key projects. Contributing to a national key project successfully is a form of public recognition and certification to the clients of other high priority projects, a market with much fewer competitors. In addition, a majority of large players in the Chinese construction industry are State-owned enterprises that tend to use guanxi

as their main governance mechanism (Zhang & Keh, 2010). Therefore, relational governance is a crucial element in Chinese project governance that deserves close examination.

To study this phenomenon, we selected two Chinese large projects: Beijing National Stadium, the “Bird’s Nest”, and Beijing Capital International Airport Terminal 3. Both projects were conducted before the Beijing Olympic Games and faced pressure to complete challenging tasks within a tight schedule. Focusing on relational governance necessitates the use of a network or pair of firms in a project as the unit of analysis. We thus viewed the major actors in each of the two Chinese large projects as two relational networks and looked into their relationship history.

We propose to use idiosyncratic and project-specific arrangements as indicators of the existence of relational governance in the projects. Relational governance is underpinned by the law of forbearance that permits quick bilateral adaptation (Williamson, 1991). It comprises self-sustaining and reproducing mechanisms that rest on social relationships in which actors expect a long-term cooperation and a continuity of relationships. The expectation produces incentives for mutual adjustment, exchange-specific investments, reduction in short-term gains (Poppo & Zenger, 2002), and even acceptance of short-term losses. In turn, *idiosyncratic* arrangements—exchange-specific adjustment and arrangements—reinforce the willingness for future cooperation (Dyer & Singh, 1998). Therefore, idiosyncratic arrangements such as special working arrangements and project-specific investments that aim to meet projects’ challenging requirements are attributes of relational contracting. Figure 1 presents the research model of relational governance used in the paper.

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The findings are expected to provide an empirical case of relational governance mechanisms, their characteristics, and contextual conditions. Thus they permit a discussion regarding potential strengths and weaknesses and whether these mechanisms are unique to China's specific institutional context or can also be applied in other institutional contexts.

METHOD

Our empirical data consists of publicly available information. The material was collected from existing literature concerning the projects in both Chinese and English, newspaper articles reporting incidents on the projects, and the companies' websites. We conducted content analysis and reviewed the incidents and special arrangements of each project. In addition, we conducted three interviews with the project managers of three largest Chinese contractors who participated in the two selected projects. Each of these interviews lasted from one to two hours. We asked the project managers questions about their project management approaches, how they resolved project difficulties, how they responded to design changes and owner's requests, and whether they considered using litigation as a means of solving conflicts. We also asked them to provide examples, validate incidents reported in the news articles, and confirm whether these were common practices in the Chinese construction industry.

Due to the Chinese culture emphasizing relationships, and its significant difference from Western cultures, these two seemingly successful large projects in China's institutional context including the enduring elements (e.g., pre-existing Chinese institutional systems) and the transitional elements (e.g., China's current phase of economic development) offer interesting cases to examine relational contracting and governance mechanisms contributing to the project success and their supporting institutional elements.

The main designers and contractors in the studied construction projects were large established Chinese companies. Foreign organizations acted as expert technical consultants providing design and engineering solutions. Both projects were successes in terms of scope, functional requirements, and timeline: both were finished in time for the Olympic Games. A key assumption in this study is that large complex projects in the Chinese context have cost and schedule outcomes that are rarely seen on large projects in the Western context; thus the big differences in project governance may contribute to the difference in outcomes.

We use the following tentative measurements of relational governance (see Figure 1):

1. **Level of integration and organizational control:** a high level implies that there is a strong use of organizational control (hierarchical governance) rather than contractual control (market governance) (Williamson, 1979).
2. **Longevity of relationship:** the length of prior, historical cooperation experiences.
3. **Governmental ties:** Political ties; background of the leaders of major SOEs in the two projects.
4. **Idiosyncratic arrangements:** Firms are willing to combine resources in unique ways to realize strategic advantages over firms who are unable or unwilling to do so. These arrangements include special working arrangements that help to achieve the two projects' short duration and lack of disputes.

Concerning the validity and reliability of the research, the use of secondary, publicly available data has both advantages and disadvantages. According to Yin (1989: 17) archival analysis in case study research can be used to answer such questions as what, how often and when. The use of this kind of public data allows us to discuss the data and our findings in the analysis openly,

by posing the data and the findings for public critique. Such public critique may help to test the correctness of the content of our analysis. Moreover, our sources of evidence are strengthened and validated by our interviews (Yin, 1989). Although we only obtained interview permission from three informants, they were valuable and ideal sources of information for this study. All of them worked in the three main contractor companies and participated in the two cases. They were thus able to provide answers our research questions.

RESULTS

Bird's Nest: the Beijing Olympic Stadium:

The Beijing Olympic stadium—the “Bird’s Nest”—was built for the summer Olympic Games in Beijing in 2008. It held the opening and closing ceremonies and athletic track and field events of the 29th Olympiad. It also hosted the Summer Paralympics from September 6th to September 17th, 2008. Table 1 presents the major milestones of the project.

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Main actors

Under a Build Operate Transfer (BOT) public-private partnership model, a consortium led by the China International Trust and Investment Corp (CITIC) won the concession tender. CITIC is a mixed consortium composed by three companies: the state-owned China International Trust and Investment Corporation (CITIC); the state-owned Beijing Urban Construction Group Corporation (BUCGC); and the private Golden State Holding Group Cooperation (GSHGC) (Liu, Zhao, & Wang, 2010). Their proportional equity in the consortium was 65%, 30% and 5% respectively.

The consortium funded 42% of the stadium's roughly 500 million dollar budget. Besides financing part of the stadium, the CITIC consortium was also responsible for the construction and will be responsible for operation and maintenance of the project for 30 years after the close of the 2008 Olympic Games. The remaining 58%, funded by the BMG, was entrusted to the Beijing State-owned Assets Management Co (BASAMC) as the city government's representative. The CITIC consortium and BASAMC jointly set up a Project Company to work on the stadium project. Figure 2 describes the structure of the Bird's Nest project company.

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The design contract for the National Stadium was awarded to the consortium formed by Herzog & de Meuron (Switzerland), Ove Arup (UK) and China Architecture Design & Research Group (CAD), which managed to beat out the competitors with a design for a stadium that would resemble a bird's nest, which is now the nickname of the stadium. Major contractor and subcontractors were members of the CITIC consortium: Beijing Urban Construction Group Corporation, CITIC Guoan Group, and CITIC International Contracting Inc. Figure 3 shows the main actors in Bird Nest project.

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Level of Integration and Organizational control

The government took a crucial and leading role in providing incentives and support for the project organization. It also exerted significant control over the project and, in turn, influenced the project outcome. The incidence of design changes demonstrates the government's top-down control still outweighed market mechanisms (i.e., the BOT arrangement).

Originally, the People's Government of Beijing Municipality (Beijing government) required that the design of the stadium “shall have a retractable roof, with the configuration designed to fully reflect the characteristics of modern sports buildings.” The officials believed that “the stadium with a retractable roof would turn out to be a significant architectural legacy of the 2008 Olympics.” However, the retractable roof was eventually abandoned and the construction of the Stadium was halted on July 30th and resumed on December 28th 2004.

The direct cause for the design change and stopping of the construction was a petition submitted to the central government by a group of academicians from the Chinese Academy of Sciences, the most distinguished academic establishment in physical sciences and architecture. In the letter, the academicians criticized the stadium design for its “extravagance, huge costs, wasteful use of steel, engineering difficulty and potential safety problems.” In response, the central government ordered a construction standstill and started a financial, safety, and design review of the project. After the review, the central government cut down both the budget and the amount of steel. Finally the Beijing government instructed the concessionaire to remove the retractable roof and some 9,000 spectator seats. This design change saved 15,000 tons of steel and estimated \$50 million as well as considerable construction time. However, it also limited the Project Company’s future commercial use of the stadium in various types of weather and occasions (Liu et al., 2010). The Project Company nevertheless complied.

Longevity of relationship and governmental ties

ARUP and Herzog & de Meuron had worked together before quite successfully on the Allianz Arena, a soccer stadium in Munich Germany that hosted a semifinals game during the 2006 World Cup. Furthermore, the Chinese actors have a much longer history of working with the government.

Beijing State-owned Assets Management Corporation is the successor to Beijing State-Owned Assets Operation Cooperation established in 1992 (see the official website of the Beijing State-owned Assets management corporation). It finances and operates large projects such as Beijing IC Design Park and Beijing Science Park. Its top managers are all party members.

CITIC has strong political ties with the central government. It is the successor to China International Trust and Investment Corporation, which was established in 1979 by Rong Yiren, the 5th Vice President of PRC, initiated and approved by Deng Xiaoping, leader of China's economic reform. Its chairman of the Board of directors is a party member (CITIC official website).

BUCGC has even longer history working for the government. It grew out of the China People's Liberation Army Basic Construction Engineering Soldiers and was established in 1983. Since then, the company has contracted a large number of national key and symbolic projects, such as China Theater, Office Building of Beijing People's Congress, State Aviation Command Center, and Beijing International Airport Terminal 3 (see the official website of BUCGC subsidiary). Similarly, its top managers are party members. It is under the supervision of the Beijing government.

Golden State Holding Group, holding just 5% of the equity in the concession, was founded in 1986 as Golden State Import & Export Ltd and changed its name to Golden State Holding Group in 1997. Although it is registered in California, it entered the Chinese market in 1988 by importing the first water treatment plant into China (China Water, 2011). It worked with the Beijing government in large projects such as Beijing Gaobeidian Wastewater Treatment Plant (1990-1999) and wastewater treatment plant in Beijing Economic and Technical development

zone (2001-2006) as the contractor (China Water, 2011). Table 2 shows the nature of the relational ties of the main actors.

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Idiosyncratic arrangements

Due to the five-month delay, the main contractor BUCGC entered into extended negotiations regarding compensation with the People's Government of Beijing Municipality, which ultimately bore most of the cost (Liu et al., 2010). This did not delay the project's on-time completion.

Due to the nationalistic importance of the project the government was involved in many phases of the project. For instance, on January 23rd, 2003 the Ministry of Finance, the State Administration of Taxation and the General Administration of Customs jointly issued 'Notices on Taxation relevant to the 29th Olympic Games'. These notices provided many tax incentives that included making imported equipment for the stadium free of customs and value-added tax (Liu et al., 2010). Other support from the Beijing government included:

- Land at below market cost
- Capital at below market interest rates: while contributing the 58% of total investment of 3.13 billion RMB, the Beijing government would not receive any dividend from the project;
- Necessary infrastructure connections to the site (water, electricity and roads, etc) and creating convenient conditions for the construction and operation of the stadium. For example, a special passport was issued to the Project Company that permitted the easy movement of the large steel structure components needed for the stadium;

- During the Test Competitions/Events and the Olympic Games, the government agreed to pay fees to the Project Company. BMG also undertook to cover all expense of special equipment used for the opening and closing ceremonies. This was because such equipment could not be used for daily operations after the Games had ended; and
- During the 30-year concession period, BMG is not allowed to develop a new competitive stadium nor to expand any existing competitive stadium in the northern area of Beijing.

Construction involved the relocation of 4,707 residents from 2,043 households in the surrounding area. When questioned, the Chinese government maintained that the relocation process was smooth and residents relocated voluntarily (Fan, 2008).

Beijing T3: Beijing Capital International Airport Terminal 3

The Terminal 3 building was designed to increase the total annual capacity of Beijing Capital International Airport's passenger throughput to 60,000,000, cargo throughput to 1,800,000 tons, and aircraft movements to 500,000. The project also aimed at delivering a modern image at the gateway to the nation and at becoming the largest airline hub in the Asia-pacific region (Jing, 2008). This expansion involved the construction of a third runway and another terminal for Beijing airport, and a rail link to the city center, creating the largest man-made structure in the world in terms of area covered. Table 3 summarizes the milestones of the project.

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Main actors

A management team (Beijing Capital International Airport Expansion Project Headquarter, "Headquarter" hereafter) under Capital Airports Holding Company (CHA) represented the client and oversaw the approximately \$3 billion project (based on the official website of Capital

Airports Holding Company). The project was financed by CHA, Civil Aviation Administration of China (CAAC), the Chinese aviation authority, and National Development and Reform Commission, a successor to the State Planning Commission, which has managed China's centrally planned economy since 1952. CHA is a large, state-owned enterprise specializing in airport operation, which belongs to CAAC. One of its wholly-owned subsidiaries, Beijing Capital International Airport Company Limited (BCIA), a Sino-foreign joint-stock company, purchased the shares of the project from CHA in the course of construction so that it owns and operates the entire Beijing Capital International Airport (Beijing Capital International Airport Company Limited, 2006).

CHA solicited building design schemes from designers around the world in February 2003. A joint venture (JV) of Foster + Partners, London (architect), Arup (structural and mechanical engineers and fire consultant), and NACO, Netherlands Airport Consultants won the competition (Wang, 2006; Yung, 2008). The JV subsequently worked with one of the largest local architectural design institutes, the Beijing Institute of Architectural Design (BIAD).

Through competitive bidding, the construction and supervision contracts were awarded to Beijing Urban Construction Group Corporation (BUCGC) and CIECC Construction Supervision Company in March 2004, respectively. The latter was a subsidiary of China International Engineering Consulting Corporation (CIECC), a large state-owned consulting enterprise. In August, another large contractor, Beijing Construction Engineering Group (BCEG), joined the project team (Wang, 2004). Figure 4 shows the main actors of the project.

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Level of vertical integration and the use of organizational control

This project is closely supervised by the State Council, which established a leading team comprising members from ministry-level organs including National Development and Reform Commission and the General Administration of Civil Aviation of China to oversee this project and to get a quick passage of governmental regulations or approvals needed to complete the project. CAAC is authorized to “enforce the unified supervision and regulation on the civil aviation activities of the whole country and in accordance with laws and State Council’s decisions, to issue regulations and decisions concerning civil aviation activities within its jurisdiction”.

Longevity of relationship and governmental ties

All three partner firms in the Terminal 3 JV had extensive experience working with each other: Foster + Partners have been working with ARUP for 30 years and with NACO for around 20. The Beijing Capital International Airport was the JV’s third airport together, the forerunners being Stansted Airport, London, in the late 1980s and Chek Lap Kok Airport, Hong Kong, in the late 1990s, and they have also worked together on many other infrastructure projects abroad. For each airport terminal the JV’s engineering structure has been similar.

BIAD is a large state-owned architectural “design institute”—a state-owned design and consulting enterprise— established in 1949, following the founding of the People’s Republic of China. Since then, it has worked with the government in designing symbolically important landmark buildings including the Great Hall of the People, the National Museum, the Cultural Palace of the Nationalities, and the Worker’s Stadium that delivered the image of modern China. BIAD’s close tie with the Beijing government was reflected in the fact that it was selected and contracted for the design of 12 out of 37 XXIX Beijing Olympiad competition facilities while

most other firms contracted no more than three (Beijing Institute of Architectural Design, 2008). Table 4 lists the main architectural firms and the number of design competition facilities.

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BUCGC's long working relationship and strong ties with the government have been described above in the Bird Nest project.

BCEG was established in 1953 as Beijing Construction Engineering Bureau with the approval of the Prime Minister (Xinhuanet News, 2007). The Bureau recruited engineers from other government units including People's Liberation Army Engineering Soldiers and transformed into BCEG after the reform. It was involved in many representative buildings in Beijing and is under the supervision of the Beijing government. Its top managers are party members (BCEG official website).

CIECC was established in 1982 in response to the demands for reform and technological advancement and was positioned directly under the National Development and Reform Commission. Because of its position as the state's think tank, it drew talent from major government agencies such as the State Economy Commission (no longer existing) in its early stages (Deng & Wang, 2009). In 1998, as part of the reform, it was transformed into a state-owned enterprise under the jurisdiction of the State-owned Assets Supervision and Administration Commission, investor of state-owned assets on behalf of the central government. It remained one of the main consulting firms reviewing project proposals (including high speed railways and nuclear power plants) and preparing feasibility study reports for the central government (Deng & Wang, 2009). It was also involved in the feasibility study of the T3 project in 2002 (Business Post, 2008). Its top managers are party members (CIECC official website). Table 5 shows the relational ties of the main actors.

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Idiosyncratic arrangements

Similarly to the Bird's Nest, the central government's support was salient and crucial in this case. The National Development and Reform Commission approved the project on the same day the contract was signed with the contractor and supervision companies. There were still 10,000 people living in a village on the location of the Beijing T3 just couple of months before the construction was scheduled to begin. The relocation of the village was conducted swiftly and didn't cause any delays to the project. Although the authorities claim that there were no appeals over land acquisition, media sources have learned that those who tried to protest could not file official complaints. This speedy and unopposed exercise of eminent domain to displace the village would have been impossible for an arms-length foreign firm to accomplish in this context. The contrast with India is particularly striking, where local farmers in the path of planned developments have stopped major projects from proceeding including the construction of a large manufacturing facility for Tata to make its low cost automobiles.

A more unique arrangement was the role played by BIAD between the client and the foreign JV. Based on the initial contractual arrangement, BIAD was responsible for detailed design and construction drawings after the JV completed conceptual design. The JV needed time to design and engineer the project and suggested that the construction could begin in October 2004. BCIA insisted that the construction must start in March 2004 which left only six months for the JV to design the project. In the end, both compromised: BIAD was involved early on. Due to the tight and fixed schedule, Chinese firms conducted a common practice of fast-tracking design and construction simultaneously, which was difficult for the JV to adapt to. To bridge different practices and norms, BIAD applied its experience and knowledge in designing the

airport's Terminal 1 and 2 in interpreting the foreign JV's concept design, issuing construction drawings ahead of the JV's progress (Wang, 2006). When the JV finished the "conceptual design" at the end of June 2004 based on the contract, part of the building structure was already completed (Wang, 2006).

The commitment local actors showed in meeting the irrational deadline and fulfilling the government's requirements was also reflected in the arrangement of construction work. The Headquarter only employed 108 professionals. All of them worked and lived on the jobsite in the course of the project. Under their close supervision and management, there was not a single reported delay of work due to waiting for materials or drawings (Jing, 2008). The Headquarters separated the entire duration into four stages by setting major milestones. At the beginning of every stage, it held a mobilization meeting and asked participants to give up vacations, and vow to complete the tasks on time. A specific incentive system linked to safety, quality, and schedule targets was approved by the CAAC to facilitate this acceleration (Xinhua News Agency, 2005). In reality, a large number of workers skipped holidays and weekends for nearly four years and worked continuously. For example, the roof was supported by 298 large-scale, shuttle-shape latticed steel columns with diameters ranging from one to three meters. This created difficulties in welding and installation. The work was completed by about 90 technicians continuously working for 24 hours with the outside temperature near 40 degrees Celsius (Jing, 2008).

DISCUSSION

Of these two large projects that successfully met their aggressive schedule goals, one adopted a BOT concession delivery model while the other adopted competitive bidding for construction, but both involved similar relational governance mechanisms. Both projects demonstrated a high level of internalization of planning, design, and construction within a web of governmental

agencies and government-controlled enterprises that formerly had a traditional hierarchical relationship. This can be viewed as a form of virtual vertical integration. Chinese central and local governments remained dominant actors that exercised decision-making power, controlled the resources, and provided strong support for the projects, while other contractual parties had limited autonomy. In addition, party memberships served as implicit ties that channeled the State's organizational control over these large enterprises. Although large enterprises are "privatized" from government agencies or departments, the authoritarian and administrative control of government only changes its form: Direct order give way to inferred command and influence over the career prospects of large enterprises' managers (The Economist, 2011a). This is a manifestation of control through fiat and doctrine of forbearance that underpin relational contracting through vertical integration (Williamson, 1991), and a historical legacy of the centrally planned Chinese economy controlled by the Communist party.

For instance, there is a clear historically-rooted paternal attitude shown in government's active support to the state-owned enterprises. Due to the huge perceived national importance of the Olympic Games, the success of these two projects was a prerequisite. This encouraged the authorities to take actions in terms of legislation, tax reduction, acquisition of lands, and forceful relocation of existing residents, thus facilitating the on-time delivery of the projects. In addition, many design requirements were decided by the state/government rather than the actual operators. Even when this led to a design that generated less operational revenue in the Bird's Nest case, a BOT project, the concessionaire complied.

Moreover, both of these Chinese projects were orchestrated by experienced consortia and state-owned enterprises that possessed long historical ties with the government and membership of its senior managers in the communist party. The role of the foreign companies was merely to

act as experts and consultants bringing western know how. Their ties with the government and the client were mediated by Chinese actors. These Chinese firms were state-owned enterprises that owned a large and flexible construction workforce, which was one of the most important aspects of the success of the projects. The entire project teams shared a strong commitment to complete these symbolically important projects that reflected national pride on time. They sacrificed their vacations and worked around the clock. Although many design changes occurred because the design and construction proceeded simultaneously, no claims or disputes delayed these projects. Local media acclaimed that this is a strength that only exists in a socialist society. Both the scope and the organizational structure of the projects were altered during the project because of changes in the client's preference. These specific working arrangements indicated the existence of *idiosyncratic arrangements* that greatly contributed to meeting the requirements of projects.

All informants confirmed that in large and high-profile projects like these two cases, “success”—i.e., on time completion—was imperative. There was tremendous political and administrative pressure for the success of the projects. The government selected firms that they could trust, firms that would make things happen in the face of difficulties and uncertainties. These firms were often state-owned enterprises, because they carried out a special role in the society and were obliged to serve the interests of the nation and the government before asking for compensation or benefits. Because of this, contractors working on the same project exchanged ideas and novel practices on the weekly basis and solved problems collectively in order to meet the demanding schedule goal. In addition, when being asked about whether there were claims and disputes, the informants said that as long as the government had sufficient resources, which was mostly the case, it paid the expenses without the firms needing to submit formal claims or

enter into disputes. There were reciprocal relations and mutual understanding between their companies and the government.

From this analysis and comparison of the two large projects, it becomes clear that the relational governance mechanisms underlying the on-time completion of the two large projects were rooted in China's unique institutional context, in which social ties with the government have a special meaning and value to enterprises. Especially for state-owned enterprises, these ties have political and normative meanings deeply connected to their historical and social roles. Governmental ties that secure crucial resources and business opportunities are important to the future of these enterprises. In addition, ties of party membership that lay the path for enterprises' managers to subsequent positions as governmental officials serve as conduits to power and resources. These ties thus generate strong incentives and a credible threat of punishment of defection from cooperation for managers of state-owned enterprises, if they fail to adapt to the government's demands.

For instance, Li et al. (2011) demonstrate that relational (social) ties with government are valued more than other ties in China. Companies will undertake heroic efforts to preserve such ties. Companies involved in the design and construction of these projects all had long and established relationships with the government. These ties brought them several other projects related to the Olympic events, enabling new business opportunities.

In addition to the pre-existing social and political structures in a communist society, China's relational governance mechanisms of large projects incorporate shared identity emphasizing national glory and pride (i.e., collective norms and values). The national pride that was reflected in framing these projects as symbols of national pride and promoting their international status to motivate the workforce's sacrifices was historically rooted in social values.

The value-driven commitment was amplified when China's hosting of the Olympic Games was tightly connected to its political identity, foreign relations, and economic development due to the transitioning quality of China's development. Projects of the Olympic Games are thus imbued with great ideological and political meaning. At the same time, because the case projects are showcase projects, they were able to exert political and normative pressure in mobilizing unusual amounts of resources and commitments. Therefore, China's strong tendency to build showcase projects may not be merely a symbolic act for national pride. Rather, it has practical gains as it draws both physical and human capital resources and invokes commitments.

However, although the blurred boundaries between public, private and party create flexibility and commitment in rapidly and smoothly overcoming difficulties, they have weakness that cannot be ignored. Because these governance mechanisms are derived from China's institutional and transitioning context, it may be difficult to duplicate these mechanisms in other institutional contexts. The line between public and private is not as clear as in the Western countries, and the state of economic development differs from the Western. Moreover, it is questionable whether these mechanisms are sustainable. After China's period of economic transition, workers' devotion to symbolic projects may fade, since the majority of them are only children now.

More importantly, the governmental dominance and control as well as enduring close ties between the government and large enterprises in the construction sector has incurred controversies regarding a lack of transparency, safety, indebted projects, and corruption (The Economist, 2011b). The recent corruption scandal in the Chinese railway industry illustrates serious consequences of the lack of transparency (Wines & Bradsher, 2011). The secrecy of the processes and activities of development projects makes it difficult to find the sources of any

problems and accidents and attribute blame, and also prevents enterprises from correcting errors and making improvements. Moreover, it calls into question the cost of the high level of adaptability built on a high level of internalization of development activities and highlights what is at stake in the acceleration of development. Consequently the effectiveness and perceived legitimacy of this kind of relational governance of development activities may decline over time.

CONCLUSION

In this paper we have studied relational governance by proposing a model consisting of the following dimensions: the level of integration and organizational control, longevity of relationship, governmental ties, and idiosyncratic arrangements within the two projects. We have identified the institutional context that supports the relational governance mechanisms in the two case projects and the weakness derived from this context. These empirical cases to elaborate the relational governance mechanisms used in these projects provide important implications for large project governance.

First, normative and ideological pressure can mobilize significant commitment from project participants. Second, reciprocal relations and mutual understanding underlying trust among project participants can contribute to coordination and cooperation. Third, shared goals motivated by common normative and ideological pressure seem to effectively blur the boundaries between project participants and to encourage problem-solving and knowledge sharing practices.

However, the contexts and characteristics of the relational ties matter. Relational contracting in the form of a high level of vertical integration undergirding by political and normative forces of the party results in adaptability and easy mutual adjustments, free from any overt conflict. Nevertheless, this form of relational contracting between the government and

large enterprises in a sector dominated and controlled by the government leads to conflicts of interest. For example, large enterprises may compromise their professional standards to satisfy the government's political needs in order to secure their future transactions with the government. Moreover, their historical parental-subordinate relationships determine that the contractual relationships in the two cases are unequal. The government is thus virtually the judge and the player. In addition, the internalization of nearly all activities leads to a lack of transparency and monitoring, which encourages bad practices and collusion. These undercut the social benefits which the large projects should deliver. Therefore, complementary forms of legal/contractual governance for large projects also need to be in place to prevent collective opportunistic behavior of project participants and to protect the interest of the public.

This study has shown that, although relational contracting provides effective mechanisms to cope with turbulence of large projects, overly relying on these mechanisms without the support of independent regulatory governance mechanisms can be problematic. Future research should be conducted to explore the role relational governance plays in other contexts than China, where different cognitive and normative institutions are present. Other forms of relational contracting in which contractual parties have more equal status and autonomy can be explored. Especially, endogenous relational ties that are formed by deliberate and purposeful actions (Henisz et al., 2012) can be an interesting comparison to our case of relational ties that are exogenously and historically shaped.

NOTE

1. However, the 2011 collision of two high speed trains—allegedly due to failure of a signaling system—suggests that the level of technical and quality management required to execute these projects successfully may not always have been in place.

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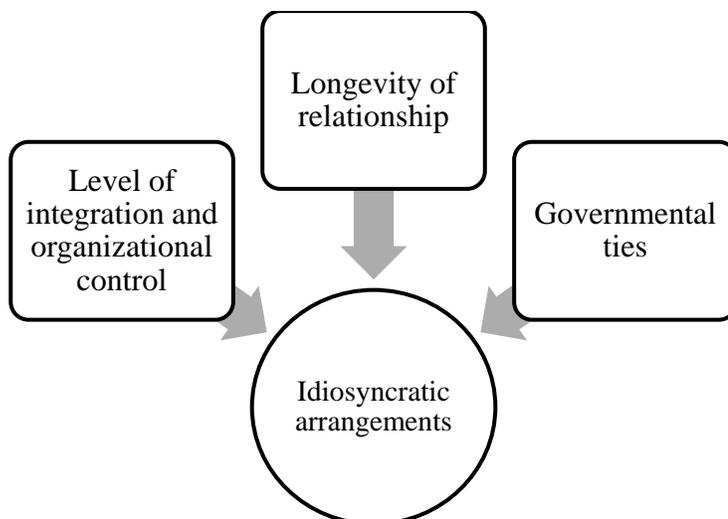


Figure 1 Research model of relational governance in Chinese large projects

Table 1 Milestones of the Beijing Olympic stadium project

Date	Milestones
October 29 – November 20, 2002	Design competition
March 25, 2003	Design of Bird Nest recommended by evaluation committee
April 30, 2003	Field inspection and pre-bid meeting
August 9, 2003	Signing of concession agreement and National Stadium Agreement
September 2003	Establishing project company
December 24, 2003	Groundbreaking ceremony
July 30, 2004	Cancelling of retractable roof stopped construction
November 2004	Completing revised design that reduced 22.3% of the amount of steel used in the project
December 28, 2004	Resumption of construction work
June 28, 2008	Completion ceremony

Source: Official website of the Bird Nest: <http://www.n-s.cn/cn/about/memorabilia/> [in Chinese]; Liu, Y.W., Zhao, G.F., Wang, S.Q. (2010).

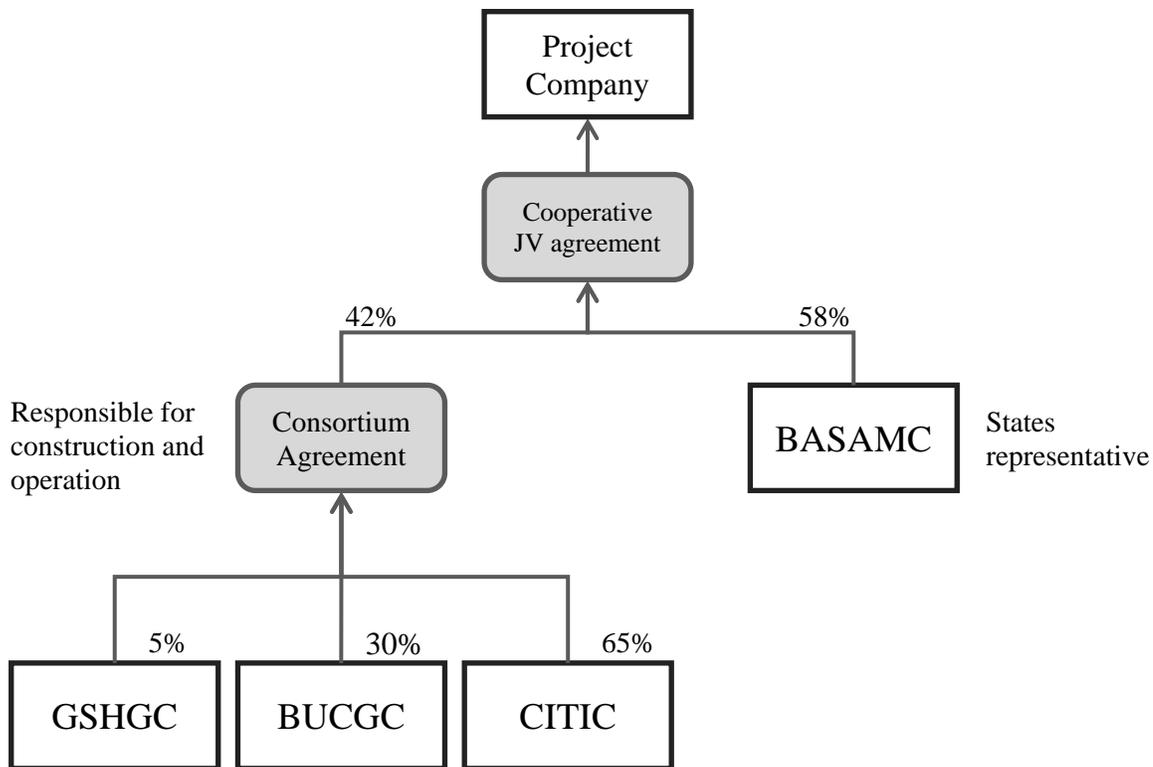


Figure 2 The structure of the project company

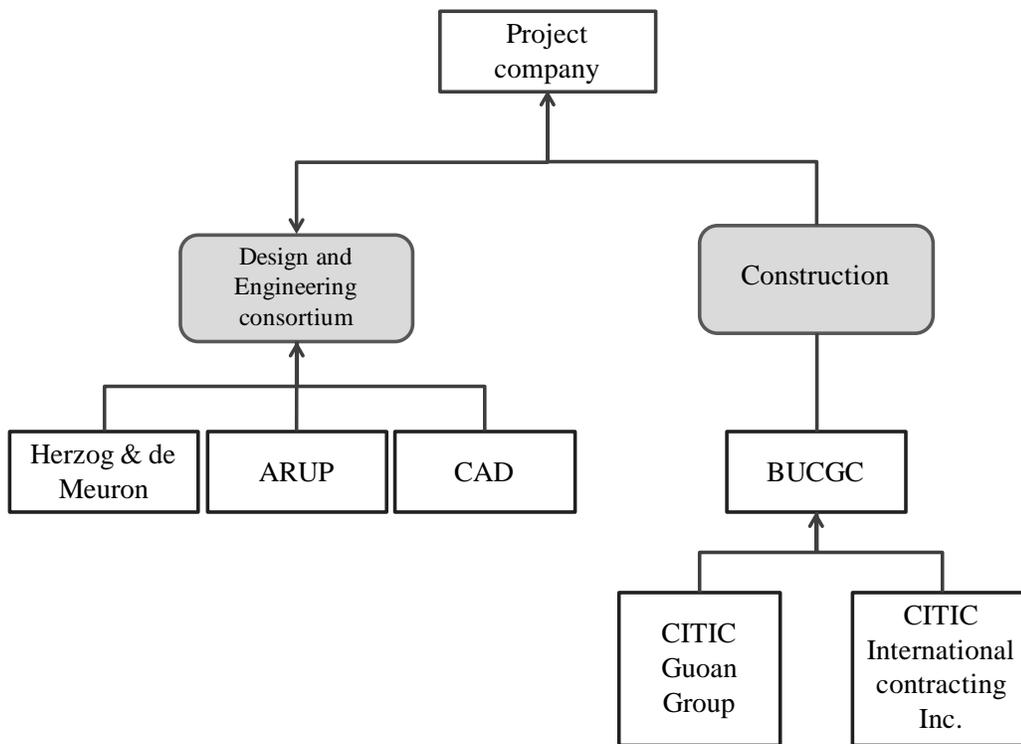


Figure 3 Main project actors of the Bird's Nest project

Table 2 Relational ties of Main Actors in Bird Nest

Actor	Longevity (year)	Central government tie	Beijing government tie	Prior working experience w. Beijing government	Leadership is party member
Beijing State-owned Assets Management Corporation	19 (1992-2011)	Indirect	Direct	Yes	Yes
CITIC	32 (1979-2011)	Direct	Direct	Yes	Yes
BUCGC	More than 28 (earlier than 1983-2011)	indirect	Direct	Yes	Yes
Golden State Holding Group	23 (1988-2011)	Indirect	Direct	Yes	Unknown

Table 3 Milestones of Capital International Airport Terminal 3 project

Date	Milestones
September 27, 2002	Civil Aviation Administration of China and the Beijing government proposed the project (a).
August 20, 2003	State Council (Cabinet) approved the proposal (a).
October 29, 2003	State Council approved the design of the Naco-Forster-Arup JV.
March 2, 2004	State Council approved the feasibility study of the project. The budget is RMB27 billion (T3A, T3B, and T3C) (a).
March 26, 2004	Capital Airports Holding Company signed the T3A building contract with the Beijing Urban Construction Group Co (BUGGC) and CIECC construction supervision company. Required duration was three years and nine months (b).
March 28, 2004	Groundbreaking ceremony
August 8, 2004	CAH signed the T3B contract with the Beijing Construction Engineering Group and required this project to be completed by the end of June 2007 (c).
September 15, 2005	CAH signed the agreement of using 500m (\$625m) loan from the European Investment Bank (EIB) in the project with the Export-Import Bank of China and the Ministry of Finance People's Republic of China (d).
June 12, 2007	BCIA signed cooperation memorandum with the Hong Kong Airport Administration for support and consultancy of trial operation, training, and operation (e)
December 25, 2007	The project completed and passed the final inspection with zero defect (a)
February 1, 2008	BCIA announced that it will purchase Terminal 3 and related assets from its parent company, CAH with RMB26.9 billion. This transaction was approved by the Ministry of Finance People's Republic of China (f).
February 29, 2008	The Airport opens for operation

Notes:

- a.: Website of the Central People's Government: 1. Press Conference of the Beijing Capital International Airport Expansion project: http://www.gov.cn/content_874592.htm [in Chinese]. 2. CAAC completes the final inspection: http://www.gov.cn/gzdt/2007-12/27/content_845008.htm [in Chinese].
- b.: Xinhua News Agency (XINCCN), "Beijing Capital International Airport Expansion project begins," issued on 26 March 2004, retrieved from Dow Jones Factiva database (Document no.: XINCCN0020040326e03q000c8).
- c.: China INFOBANK, "the Capital Airport Expansion project is in full swing," issued on 10 August 2004, retrieved from Dow Jones Factiva database (Document no.: CEIC000020040810e08a0001c).
http://www.eximbank.gov.cn/xwzxarticle/xwzx/yaowen/200509/8778_1.html
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- e.: BCIA official website: <http://www.bcia.com.cn/news/news/0706/news104569.shtml> [in Chinese], accessed 23 December 2010.
- f.: CAIJING.com.cn, "BCIA will purchase the new terminal building," <http://www.caijing.com.cn/2008-02-02/100047517.html> [in Chinese], issued on 02 February 2008, accessed 23 December 2010.

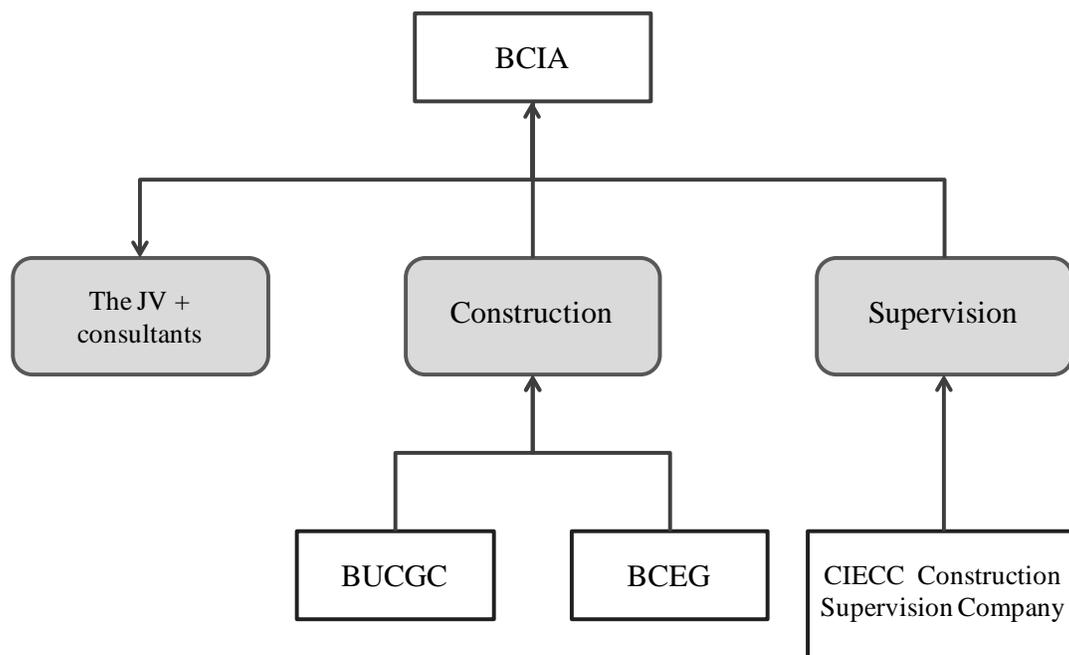


Figure 4 The main project actors of Terminal 3 project

Table 4 Main architectural firms and the number of designed competition facilities for the XXIX Beijing Olympiad

Architectural firms	No. of design contracts
Beijing Institute of Architectural Design	12
Shenzhen Design Consulting Co. Ltd of CSCEC	6
Architectural Design & Research Institute of Tsinghua University	3
Arup and its branches	3
Architectural Design & Research Institute of Tongji University	2
Architectural Design & Research Institute, South China University of Technology	2
China Institute of Aerospace Architectural Design	2
China IPPR Engineering Corporation	2

Note: only firms that design more than two facilities are listed. Data source: Appendix II in Olympic Architecture Beijing 2008 (Beijing Institute of Architecture), p. 312.

Table 5 Relational ties of main actors in T3

Actor	Longevity (year)	Central government tie	Beijing government tie	Prior working experience w. Beijing government	Party member
BIAD	62 (1949-2011)	Indirect	Direct	Yes	Unknown
BUCGC	More than 28 (earlier than 1983-2011)	indirect	Direct	Yes	Yes
BCEG	58 (1953-2011)	indirect	Direct	Yes	Yes
CIECC	29 (1982-2011)	Direct	Direct	Yes	Yes