A Relational Governance Approach for Megaprojects: Case Studies of Beijing T3 and Bird’s Nest Projects in China

Authored by

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Cheryl S.F. Chi¹, Inkeri Ruuska², Raymond Levitt³, Tuomas Ahola⁴, Karlos Artto⁵

Abstract

Megaprojects in China have drawn international attention. Large, global projects involving multiple firms and public organizations are often subject to the impacts of a wider socio-political environment and opportunistic behavior of the actors. Previous studies suggest that relational governance can be a complement mechanism to formal contracts and promotes common problem-solving behavior that helps overcome turbulences in the course of projects. But the sources of relational governance remain understudied. Two of China’s high profile projects—Beijing T3 and Bird’s Nest—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 socialist societies was found to continue to support the reciprocal and obligatory cooperation in the relationship between the State and State-Owned Enterprises.

Keywords: Relational governance, megaprojects, China, Beijing Airport Terminal 3, Beijing National Stadium, Bird’s Nest

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Introduction

Megaprojects in China have drawn international attention. In recent years China has been one of the central areas of the world’s construction industry. By the end of 2010, four out of world’s twenty most expensive infrastructure projects in progress are in China, according to The Associates Press (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 question.

Concerning the Chinese context, China’s infrastructure projects used an organizational arrangement of highly internalization and vertical integration (i.e., government planned, financed, designed, and constructed) in the command economy. 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 negotiable bidding or tender invitations to be used in these key projects.

This shows strong legal support for the success of projects. However, the regulations and formal rules may be insufficient in explaining how China’s large, complex, and novel projects proceed in a surprising speed without disputes or major flaws. Large, global projects are complex networks of actors involving multiple firms, public organizations, authorities and decision making bodies. They are often subject to the impacts of a wider socio-political environment. Researchers have suggested the importance of aligning project governance with projects’ surrounding institutions to project success (Miller, Lessard et al. 2001a). Governance mechanisms undergirded by existing normative and cognitive institutions can support relational contracting among parties, a bonding and commitment rested on relationship and trust, that help overcome turbulences in the course of projects (Henisz and Levitt 2010).

We have studied two high profile projects in China—Beijing T3 and Bird’s Nest—to explore the governance mechanisms underlying the projects’ progress in the face of technical challenges derived from their unique designs. Both were successful in terms of schedule, budget and scope and finished on time for the Olympic Games in China in 2008. We argue that relational governance (i.e., relational ties that generate commitments) contribute significantly to the success of large Chinese projects given the fact that
the current large design and construction firms are spinoffs from government functionary departments and have historical ties and paternal-subordinate relations with the State.

The paper is structured as follows. We briefly present the literature on governance of projects, focusing on the relational governance and its role in contributing to success in megaprojects. We then describe the method and the data we have collected from public sources both in English and in Chinese languages and the results of the analysis of the two case projects. Finally, we discuss the findings.

**Megaprojects and their governance**

In the literature of large projects, various terms, such as complex project (Barlow 2000), major project (Morris and Hough 1987), giant project (Grün 2004), megaproject (Flyvbjerg et al. 2003), large project (Miller and Lessard 2001a, 2001b) have been used to describe projects with several organizational actors that are involved in delivering a complex system or deliverable, e.g. an airport terminal or a power plant. Organizations participating in a project include multiple firms, public organizations, authorities and political decision-making bodies – and even several owners (Grün 2004). Organizations have different objectives, potentially even conflicting ones, and changing priorities while being subject to the impacts of a wider socio-political environment (Morris and Hough 1987, Williams 2002, Grün 2004). Literature on megaprojects generally reports failures. Flyvbjerg et al. (2003) argue that the majority of megaprojects meet cost overruns and fall behind the schedule. According to them, the main reason for the overruns is the lack of realism in the initial cost estimates.

From the large project studies of Morris and Hough (1987), Miller and Lessard (2001a, 2001b), Samset (2003), Flyvbjerg et al. (2003) and Grün (2004), we can derive the following elements that are important for a project’s success: 1) project objectives and their viability, 2) technical uncertainty and innovation, 3) politics, 4) community involvement, 5) schedule duration and schedule urgency, 6) financial matters, 7) organization and contractual matters, and 8) leadership and people management. Concerning the organization and contractual matters, the organizational structure of a project with the use of contractors, the shaping of the project, the project’s institutional framework and the capacity of governance and self-regulation are important. The customer’s/owner’s capabilities and the owner’s interest to put resources in the process and carry responsibilities are essential. It is the responsibility of project owners to establish the project management structure. The financing party’s involvement in an early phase is critical, as this helps to shape the project right from the start, and the financier’s commitment to objectives would guarantee the support in the later phases in terms of financing. Extensive use of contractors will release owner’s capacity and enable the owner to concentrate on core tasks. However, the owner should not mix firm price and reimbursable contract forms, i.e., the owner must not
allocate such responsibilities or risks to the contractor that belong to the owner and are more appropriate to keep under owner’s responsibility. There should be balanced authority and responsibility among the different stakeholders.

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 should megaprojects be subjected to by their owners and other powerful stakeholders, such as regulatory actors (APM 2004; Crawford, Cooke-Davies, Hobbs, Labuschagne, Remington and Chen 2008). This stream of research adopts the assumption that megaprojects 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 megaproject. In particular, such contributions focus on how core project management techniques such as schedule and risk management can – or should – be complemented with additional governance mechanisms typically neither addressed in project research nor project management practice (Winch 2001; Miller and 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 megaproject can ensure that the entire project delivery chain, which may consist of hundreds or even thousands of firms, works efficiently and towards a shared goal in the face of uncertainties and unexpected exceptions (Orr and Scott 2008).

To continue this line of research and deepen our understanding of the internal project governance, this study focuses on relational governance, a concept widely discussed yet remained less clear. Relational governance establishes a foundation enabling project actors to deal with unanticipated events and problems collectively (Henisz and Levitt 2010). 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 et al. 2000). 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 the institutional theory (Scott 2008), Henisz and Levitt (2010) categorize governance mechanisms into regulatory, 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. While regulatory governance mechanisms rely on formal processes to generate cooperation,
Normative and cognitive mechanisms rely on informal processes that appeal to collective norms and shared 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 and Zenger 2002). Sources of relations ties can be endogenous and exogenous (Li, Yao et al. 2011). To reduce transaction cost, actors can actively establish cooperative ties through organizational agreements such as strategic alliance or vertical integration (Dyer and Singh 1998). By doing so, contractual relationships are transformed into partnerships and employment relationships and firms can employ organizational control 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 understanding and facilitate predictability of each others’ behavior (Gulati 1995). They also generate normative pressure for conformity to expectations once actors are granted the “trustworthy” status in order to maintain the status (Gulati 1995; Poppo and Zenger 2002). Thus, a key determinant of relational governance is the longevity of relationship, a history of working relations from which norms develop over time (Poppo and Zenger 2002).

On the other hand, external institutional framework can compel social actors to form one type of ties rather than other types (Li, Yao 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. Generally, 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 provides 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 or 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 counter-techniques of power to re-direct the resource distribution under the state redistributive economy. Although there is a condemnation on the self-interest use of guanxi in cases of corruption and embezzlement, the popular discourse actually is mixed with admiration on successful mobilizations of guanxi that rest on the traditional 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 the government agencies or government-related 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, Yao et al. 2011).

In this context, for contractors or suppliers, participating in national key construction projects means much more than the value specified in contracts. Entering a relational tie with the State generates much greater value by acquiring accesses to “insider” information, major decision-makers, social credentials, and public recognition. More importantly, it resembles being granted a trustworthy status that opens opportunities other key projects. Contributing to a national key project successfully is a public recognition and certification to other high priority projects, a market with much less competitors. Therefore, relational governance is a crucial element in the Chinese project governance that deserves close examination.

To do this, we selected two Chinese megaprojects: Beijing National Stadium, the “Bird’s Nest”, and Beijing Capital International Airport Terminal 3. Both projects were conducted before the Beijing Olympic Games facing pressure completing challenging tasks within a tight schedule. Focusing on relational government necessitates the using of a network or pair of firms in a project as the unit of analysis. We thus viewed major actors of each of the two Chinese megaprojects 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 comprises of self-sustaining and reproducing mechanisms that rest on social relationships in which actors expect a long-term cooperation and a continuity of the relationships. The expectation produces incentives for mutual adjustment, exchange-specific investments, reduction in short-term gains (Poppo and Zenger 2002), and even acceptance of short-term losses. In turn, idiosyncratic arrangements—exchange-specific adjustment and arrangements—reinforce the willingness for next cooperation (Dyer and Singh 1998). Therefore, idiosyncratic arrangements such as special working arrangements and project-specific investment that aim at meeting projects’ challenging requirements are attributes of relational contracting. Figure 1 presents the research model of relational governance used in the paper.
Figure 1 Research model of relational governance in Chinese megaprojects

The findings are expected to provide an empirical case of relational governance mechanisms and their characteristics, which permit a discussion regarding whether these mechanisms were built on China’s specific conditions or they can be applied in other institutional context.

Method

Our empirical data consists of publicly available information. The material was collected from existing literature concerning the projects both in Chinese and in English, newspaper articles reporting incidents in the projects, and the companies’ websites. We conducted content analysis and reviewed the incidents and special arrangements of the project. Due to the Chinese culture emphasizing relations and its significant difference from the Western culture, these two seemingly successful megaprojects in China’s institutional context including the lasting elements (e.g., pre-existing institutional systems) and the transitional elements (e.g., current developing phase) 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 of the studied construction projects were large established Chinese companies. Foreign organizations acted as experts 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. The main assumption in this study is that large complex projects in the Chinese context have outcomes that are rarely seen in the Western context and thus the major difference in project governance may contribute to the difference of outcome.

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

1. **Level of integration and organizational control**: there is a strong use of organizational control rather than contractual control.

2. **Longevity of relationship**: 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 unique advantage over firms who are unable or unwilling to do so. These arrangements included special working arrangements that help to achieve the two projects’ short duration, quality, 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, p. 17) archival analysis in case study research can be used to answer such questions as what, how often and when. However, typically archival and documentary data are completed with other types of evidence such as interviews for the purposes of triangulation. Hence, our sources of evidence may potentially affect the validity of our findings (Yin, 1989). However, one advantage of the use of this kind of public data is the fact that we can more openly discuss the data and our findings in the analysis, 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.

**Project background**

**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.

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


**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 ownership tender. CITIC is a mixed consortium composed by three companies: the state-owned China International Trust and Investment Corporation (CITIC); and the also state-owned Beijing Urban Construction Group Corporation (BUCGC); and the private Golden State Holding Group Cooperation (GSHGC) (Liu, Zhao et al. 2010). Their proportional equity in the consortium is 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 is also responsible for the construction and operation of the project and maintenance 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.
The design contract of 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.
Relational ties

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 change design demonstrates the government’s top-down control still outweighed market mechanisms (i.e., 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 will turn out to be a significant architectural legacy of the 2008 Olympics.” However, the 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 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 requested to remove the retractable roof and some 9,000 spectator seats. This decision change saved 15,000 tons of steel and estimated $50 million as well as saving in construction time. However, it also limited the Project Company’s commercial use in various types of weather and occasions (Liu, Zhao 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 much longer history working with the government.
Beijing State-owned Assets Management Corporation is the successor of Beijing state-owned assets operation cooperation established in 1992\(^6\). It finances and operates large projects such as Beijing IC Design Park and Beijing Science Park. Its top management is party members.

CITIC has strong political ties with the central government. It is the successor of China International Trust and Investment Corporation, which was established in 1979 by Rong Yiren, the 5\(^{th}\) Vice President of PRC, with the initiation and approval by Deng Xiaoping, leader of China's economic reform. Its chairman of the Board of directors is a party member\(^7\).

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\(^8\). Similarly, its top management is party members. It is under the supervision of the Beijing government.

Golden State Holding Group 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 in 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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<table>
<thead>
<tr>
<th>Actor</th>
<th>Longevity (year)</th>
<th>Central government tie</th>
<th>Beijing government tie</th>
<th>Prior working experience w. Beijing government</th>
<th>Leadership is party member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing State-owned Assets Management Corporation</td>
<td>19 (1992-2011)</td>
<td>Indirect</td>
<td>Direct</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>CITIC</td>
<td>32 (1979-2011)</td>
<td>Direct</td>
<td>Direct</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BUCGC</td>
<td>More than 28</td>
<td>indirect</td>
<td>Direct</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>(earlier than 1983-2011)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden State Holding Group</td>
<td>23 (1988-2011)</td>
<td>Indirect</td>
<td>Direct</td>
<td>Yes</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Idiosyncratic arrangements

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

Due to the nationalistic nature 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’ (State Administration of Taxation 2003). These notices provided many tax incentives that included making imported equipment for the stadium free of customs and value-added tax (Liu, Zhao et al. 2010). Other support from the Beijing government included:

- Land with low cost
- Capital with low cost: 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.

**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 the modern image as the gate 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 centre, creating the largest man-made structure in the world in terms of area covered. Table 3 summarizes the milestones of the project.

**Table 3 Milestones of Capital International Airport Terminal 3 project**

<table>
<thead>
<tr>
<th>Date</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 27, 2002</td>
<td>Civil Aviation Administration of China and the Beijing government proposed the project (a).</td>
</tr>
<tr>
<td>August 20, 2003</td>
<td>State Council (Cabinet) approved the proposal (a).</td>
</tr>
<tr>
<td>October 29, 2003</td>
<td>State Council approved the design of the Naco-Forster-Arup JV.</td>
</tr>
<tr>
<td>March 2, 2004</td>
<td>State Council approved the feasibility study of the project. The budget is RMB27 billion (T3A, T3B, and T3C) (a).</td>
</tr>
<tr>
<td>March 26, 2004</td>
<td>Capital Airports Holding Company signed the T3A building contract with the Beijing Urban Construction Group Co (BUCGC) and CIECC construction supervision company. Required duration was three years and nine months (b).</td>
</tr>
<tr>
<td>March 28, 2004</td>
<td>Groundbreaking ceremony</td>
</tr>
<tr>
<td>August 8, 2004</td>
<td>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).</td>
</tr>
<tr>
<td>September 15, 2005</td>
<td>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).</td>
</tr>
<tr>
<td>June 12, 2007</td>
<td>BCIA signed cooperation memorandum with the Hong Kong Airport Administration for support and consultancy of trial operation, training, and operation (e)</td>
</tr>
<tr>
<td>December 25, 2007</td>
<td>The project completed and passed the final inspection with zero defect (a)</td>
</tr>
<tr>
<td>February 1, 2008</td>
<td>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).</td>
</tr>
<tr>
<td>February 29, 2008</td>
<td>The Airport opens for operation</td>
</tr>
</tbody>
</table>

Note:
Main actors

A management team (Beijing Capital International Airport Expansion Project Headquarter, the Headquarter hereafter) under Capital Airports Holding Company (CHA)\(^9\) represented the client and oversaw the approximately $3 billion project. 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 had 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), was a Sino-foreign joint-stock company, purchased the shares of the project from CHA in the curse of the 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 architecture firm, 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 the subsidiary of China International Engineering Consulting Corporation (CIECC), a large state-owned consulting enterprise. In August, another large contractor,

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Beijing Construction Engineering Group (BCEG), joined the project team (Wang 2004). Figure 4 shows the main actors of the project.

**Figure 4 The main project actors of Terminal 3 project**

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**Relational ties**

**Level of vertical integration and the use of organizational control**

This project is under the pressure directly from 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 pass of governmental procedures. 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 of 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, they have also
worked together on many other infrastructure projects abroad. For each airport terminal the basic engineering diagram of the JV has been similar.

BIAD is a large state-owned architectural 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 symbolic 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 contracted the design of 12 of total 37 competition facilities for the XXIX Beijing Olympiad 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.

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

<table>
<thead>
<tr>
<th>Architectural firms</th>
<th>No. of design contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing Institute of Architectural Design</td>
<td>12</td>
</tr>
<tr>
<td>Shenzhen Design Consulting Co. Ltd of CSCEC</td>
<td>6</td>
</tr>
<tr>
<td>Architectural Design &amp; Research Institute of Tsinghua University</td>
<td>3</td>
</tr>
<tr>
<td>Arup and its branches</td>
<td>3</td>
</tr>
<tr>
<td>Architectural Design &amp; Research Institute of Tongji University</td>
<td>2</td>
</tr>
<tr>
<td>Architectural Design &amp; Research Institute, South China University of Technology</td>
<td>2</td>
</tr>
<tr>
<td>China Institute of Aerospace Architectural Design</td>
<td>2</td>
</tr>
<tr>
<td>China IPPR Engineering Corporation</td>
<td>2</td>
</tr>
</tbody>
</table>

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.

BUCGC’s long working relationship and strong ties with the government are already described in 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 Liberal 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 management is party members10.

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CIECC was established in 1982 in response to demand of reform and technological advancement and was directly under the National Development and Reform Commission. Because of its position as the state’s think tank, it drew talents from major government agencies such as State Economy Commission (no longer existing) in its early stage (Deng and Wang 2009). In 1998, under the reform, it was transformed into a state-owned enterprise under the jurisdiction of State-owned Assets Supervision and Administration Commission, investor of state-owned assets on behalf of the central government. It remained one of the main consultant firms reviewing project proposals (including high speed railways and nuclear power plants) and preparing feasibility studies reports for the central government (Deng and Wang 2009). It was also involved in the feasibility study of the T3 project in 2002 (Business Post 2004). Its top management is party members. Table 5 shows the relational ties of the main actors.

Table 5  Relational ties of main actors in T3

<table>
<thead>
<tr>
<th>Actor</th>
<th>Longevity (year)</th>
<th>Central government tie</th>
<th>Beijing government tie</th>
<th>Prior working experience w. Beijing government</th>
<th>Party member</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIAD</td>
<td>62 (1949-2011)</td>
<td>Indirect</td>
<td>Direct</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td>BUCGC</td>
<td>More than 28 (earlier than 1983-2011) indirect Direct Yes Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCEG</td>
<td>58 (1953-2011)</td>
<td>indirect</td>
<td>Direct</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>CIECC</td>
<td>29 (1982-2011)</td>
<td>Direct</td>
<td>Direct</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Idiosyncratic arrangements

Similar to Bird’s Nest, government’s support was salient and crucial in this case. National Development and Reform Commission approved the project on the same day when 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, sources in media have learned that those who tried to protest could not file official complaints.

More unique arrangement was the role played by BIAD between the client and the foreign JV. Based on 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

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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 design-construction-in-parallel, which was difficult to adapt for the JV. 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 by the end of June 2004 based on the contract, part of the building structure was completed (Wang 2006).

The commitment local actors held in meeting the irrational deadline and fulfill the government’s requirements was also reflected in the arrangement of construction work. The Headquarter only comprised of 108 professionals. All of them worked and lived on the jobsite in the course of the project. Under their close supervision and management, there is no single delay of work due to waiting for materials or drawings (Jing 2008). The Headquarters separate 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, 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 the 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 under the temperature nearly 40 degrees Celsius (Jing 2008).
Discussion and Conclusion

In this paper we have studied two successful megaprojects; one adopted BOT partnership model while the other adopted competitive bidding. Interestingly, we found similar relational governance mechanisms at work. We argue that relational governance in the form of relational ties has explained the success of the case projects. 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.

In both projects, **Chinese central and local governments acted as major players** in providing strong support for the projects. There is a clear historical-rooted paternal attitude shown in government’s active support to the state-owned enterprises. Due to the Olympic Games the success of the projects was a prerequisite. This encouraged the authorities to take actions in terms of legislation, tax reduction, acquisition of lands, and relocation of people thus facilitating the 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 considered less operational revenue and maintenance in the Bird Nest case, a BOT project, the operator complied.

Moreover, both of the two Chinese projects were orchestrated by experienced consortiums and companies that possessed **long historical ties with the government** and membership of the communist party. The role of the foreign companies was to merely act as experts bringing western knowhow. Their ties with the government and the client were mediated by Chinese actors. These Chinese firms owned a **large and flexible workforce**, which was one of the most important aspects of the success of projects. The entire project teams shared a strong commitment to complete these projects that represent national pride on time with high quality. 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 client’s preference. These **specific working arrangements** indicated the existence of **idiosyncratic arrangements** that greatly contributed to meeting the requirements of projects.

From this analysis and comparison of the two projects, it becomes salient that the relational governance mechanisms underlying the success of the two projects were rooted in **China’s unique institutional framework**. In this institutional context, **social ties with government** have a special meaning to companies in China. Governmental ties that secure crucial resources and business opportunities are important to the future of these companies. They thus generate the willingness to do anything for the position and status. Note that the relational ties are not bilateral. The players are tied to
the State. Lin et al. (2010) demonstrate that relational (social) tie with government values more than other ties in China. Companies will do much effort to preserve this tie. 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. Relational ties with government proved very valuable explaining why the projects were collaborative. Similarly, the national pride that was reflected in framing these projects as signally national pride and promoting international status and used to motivate workforce’s sacrifice was historical rooted in social values.

In sum, China’s governance mechanisms of megaprojects incorporate pre-existing social and political structure in a communist society (regime) and shared identity emphasizing national glory and pride (i.e., collective norms and values). The value-driven commitment was amplified when China’s hosting 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 attached to great ideological and political meanings. Because these projects are high profile projects, participating firms invariably take the opportunity to capitalize their reputation in the market, which provide great incentive to perform well and to cooperate. Because the case projects are showcase projects, they were able to mobilize unusual amount of resources and commitments. Based on this analysis, we argue that China’s strong tendency of building showcase projects may gradually gain substantial function (of building relational governance and invoke commitment), rather than remain a symbolic act for national pride. However, because these governance mechanisms are derived from China’s institutional and transitioning context, it may be difficult to duplicate these mechanisms in other institutional context. It is also questionable whether these mechanisms are sustainable after China’s transitioning period.

In this paper we have argued that relational governance in the form of relational ties have contributed to the success of the two megaprojects in China. As the paper at present is based only on public secondary data, we aim at obtaining primary data by conducting interviews with the project participants. Those interviews could potentially focus on how they resolved project difficulties, how they responded to design changes and owner’s requests, and whether they considered using litigation means in solving conflicts. This way we are able to increase the validity of our research and provide more indepth analysis on relational governance in Chinese megaprojects.

Future research should also be conducted to explore the role relational governance plays in other contexts than China, where different cognitive and normative institutions are present.
References


