

# Evolutionary Governance for Mega-Event Projects (MEPs): A Case Study of the World Expo 2010 in China

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## ABSTRACT ■

A mega-event is an open socioeconomic system characterized by massive budget demands and multiple types of subprojects and their complex interrelationships. Although a mega-event is an opportunity for a country to show its international reputation, management capacity, and societal strength, it demands a long preparation time; an enormous amount of investment; and massive resource mobilization, with far-reaching effects on both the economic and social development of a country. Mega-event projects (MEPs) face remarkable challenges in terms of overrun costs, delayed schedules, and political issues, indicating that the research on such mega-events is still insufficient and that there is a lack of effective theories to support the management and governance of MEPs. Existing studies have also ignored the dynamic evolution and adaptation of governance in a changing environment, particularly in relation to the success of MEPs. To fill this research gap, this study aims to examine the dynamic governance of MEPs on the basis of a new theory—evolutionary governance theory (EGT)—which combines institutional economics, systems theory, and project governance. The study was conducted in three main steps: (1) studying the case of the evolutionary governance of the World Expo 2010 in China during its life cycle stage, including planning, construction, operation, and post-event development; (2) discussing the impact of the hierarchical and cross-functional governance structure of the Expo; and (3) summarizing the theories and best practices of dynamic governance mechanisms for MEPs. The result of the study can deepen understanding of the multi-level governance of mega-events during the life cycle process and can also support the evolution of governance transition over the different stages.

**KEYWORDS:** evolutionary governance theory; Expo; case study; mega-events; megaprojects; program management; project management

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## INTRODUCTION ■

**M**ega-events—such as the Olympic Games, a world exposition, and the World Cup football competition—exert intensely strong and deep influences on urban revitalization, economic vibrancy, historical heritage, national reputation, and environmental quality of the host city as catalysts of change, and they draw very competitive bids among global cities and countries (Chalkley & Essex, 1999; Burbank, Andranovich, & Heying, 2002; Varrel & Kennedy, 2011; Deng, Poon, & Chan, 2016; Chen, Qu, & Spaans, 2013). Mega-events are fundamentally complex and are comprised of a variety of strategic and political features, high uncertainties and risks, public awareness and participation, large investments and long-term construction projects, as well as a risk of “megaproject syndrome,” in which projects are estimated with over-optimistic benefits and insufficient budgets (Kennedy, Robbins, Scott, Sutherland, Denis, Andrade, & Bon, 2011; Locatelli & Mancini, 2010; Mills & Rosentraub, 2013; Müller, 2015a). Hence, there are huge challenges in the project governance, strategic planning, and leadership of mega-events (Bramwell, 1997; Varrel & Kennedy, 2011; Flyvbjerg, 2014).

The traditional theory of project governance aims to achieve organizational goals or company strategies based on stakeholder relationship management and a governance framework of essential project-oriented or organizational factors, such as value systems, responsibilities, rules, processes, and policies (Bekker & Steyn, 2007; Bekker, 2015; Müller & Lecoeuvre, 2014; Ahola, Ruuska, Artto, & Kujala, 2014). Mega-event projects, however, reach far beyond the traditional scope to a higher level and wider range of the governance domain, from which the internal and external environments, governance structure, and other factors are radically evolutionary and co-evolved. Hence, the traditional theory of project governance, which focuses on the static state of one organization, presents a big gap or tension when interpreting the practice for mega-event projects (MEPs).

The study of MEPs must absorb emerging theories, such as Evolutionary Governance Theory (EGT), along with practical experiences to enrich and expand the governance of MEPs. This study aims to propose a framework of EGT for MEPs, as well as the inherent factors, including the contextualization, objectives, governance structure, characteristics; and co-evolution of configurations, evolutionary paths, and governing technologies. The framework

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proposition is based on the literature on MEPs, literature on project governance and EGT, and the case of the World Expo 2010 China. Rather than describing the details of project management instruments, this article emphasizes the adaptation process of project organization to achieve the expected performance and success when MEPs face different contexts and dynamic changes in both internal and external environments. The contribution of the article includes the enrichment of the theoretical context of EGT and the provision of a reference value for MEP project governance.

### Mega-Events Project and Evolutionary Governance

#### *Mega-Events and Megaprojects*

Although having been discussed in several studies, mega-events (or hallmark events) are still recognized as “we know one when we see one” without a uniform definition (Müller, 2015a). Müller (2015b) defined mega-events from four aspects, saying that mega-events are ambulatory occasions of a fixed duration that (1) attract a large number of visitors, (2) have large mediated reach, (3) come with large costs and (4) have large impacts on the built environment and the population. To meet the needs for facility and space, mega-events always require construction of buildings, infrastructures, or urban renewal spaces, considered *megaprojects*. Similarly, “megaproject” is also considered a “loose” term without a clear definition. Hu, Chan, and Le (2014) claimed two different perspectives to define construction megaprojects. The first perspective is determined by the investment amount and is primarily adopted by governments and industries, with varying standards among different countries, governments, and industries. The second perspective is based on the perspective of complexity and is mainly adopted by academics, who consider the construction of megaprojects as those that intrinsically exhibit highly complex characteristics. For example, the 1992 Olympic Games in Barcelona,

Spain, have been considered the most compelling example of combining a mega-event with urban megaprojects: the redevelopment of a derelict port-cum-industrial area to host a sports infrastructure and boost hospital-ity capacity (Varrel & Kennedy, 2011). Hence, this article concludes that such megaprojects relate to mega-events as *mega-event projects* (MEPs).

Both mega-events and megaprojects are recognized as long-term, impactful strategies rather than conventional events or projects. As Varrel and Kennedy (2011) indicated, two major factors motivate cities to host mega-events. First, the events are platforms for the promotion of national unity and a coherent articulation of a national identity, as displayed in South Africa during the Football World Cup. Second, hosting a mega-event rests on the promise of an economic windfall coupled with a substantial urban makeover. Therefore, mega-events may create and leave behind “hard” (tangible) and “soft” (intangible) heritages. Hard tangible heritages include infrastructures, buildings, and landmark architecture, such as the Eiffel Tower from the 1889 World’s Fair. Soft intangible heritages include things such as attitude changes, public participation, rallying of volunteers, and unique learning experiences (Varrel & Kennedy, 2011; Minnaert, 2012; Boukas, Ziakas, & Boustras, 2013; Deng, Poon, & Chan, 2016). Meanwhile, the investment in those megaprojects, if done efficiently, can also largely influence local economic development (Flyvbjerg, 2014). Therefore, a mega-event can bring long-term social, environmental, and spatial impacts for the host location (Kang & Perdue, 1994; Lee, Mjelde, & Kwon., 2015; Chen, Qu, & Spaans, 2013; Chalkley & Essex, 1999).

Mega-events and megaprojects, however, are also highly controversial. Studies have challenged that mega-events do not generate the expected significant impacts to the economy of host cities and countries. For example, after the 1994 World Cup in the

United States, the host cities experienced a net economic loss rather than the predicted gain (Baade & Matheson, 2004; Mills & Rosentraub, 2013). In addition, there may exist “mega-event syndromes,” including the overpromising of benefits, underestimating of costs, event takeovers, public risk-taking, rules of exception, elite capture, event fixing, and the adverse consequences following an event (Müller, 2015a). An example of mega-event syndrome manifested as a lack of city heritage protection and planning is the Athens Olympic Games, which left a legacy of underused sports facilities and environmental destruction (Gold & Gold, 2008; Deng, Poon, & Chan, 2016). Another prominent issue for mega-event and megaprojects is exceeding budget. Since 1960, without exception, the Olympic Games have gone over budget, on the average, by 179% (Flyvbjerg & Stewart, 2012). Additionally, these kinds of mega-events or megaprojects commonly displace people and force evictions due to urban redevelopment. For example, the 2008 Beijing Olympics and World Expo 2010 China, respectively, led to the relocation of 1.5 million residents and 18,000 families, with large impacts on the well-being, social lives, and cultural traditions of local residents; indeed, the relocations were questioned and protested by the public (COHRE, 2007).

There exists, therefore, the phenomenon of “MEP syndrome” (Flyvbjerg, 2014; Müller, 2015a). The true reason behind this syndrome can be explained in four aspects. The first aspect is due to the complexity of MEPs. The impact of MEPs on a host city brings extraordinary complexity that is unlike typical, common projects, or organizations in the socio-economic, socio-cultural, physical, and political fields (Malfas, Theodoraki, & Houlihan, 2004; Locatelli & Mancini, 2014). For example, He, Luo, Hu, and Chan (2015) measured the complexity of the World Expo 2010 China construction project and found it was far higher than the average level

of six other megaprojects worldwide. The second aspect is that in order to win the competition to host an event and gain project approval, bidders often apply inappropriate and inaccurate estimates during the bidding period, over-estimating the benefits and under-estimating the costs (Müller, 2015a; Locatelli & Mancini, 2010; Andreff, 2012; Flyvbjerg, 2014), thus exposing the project to enormous risks. The third aspect is a lack of necessary responsibility and accountability systems and methods. According to Flyvbjerg (2014), one of the important reasons for “megaproject syndrome” is that project promoters do not carry the risks involved or are not held accountable for the consequences of poor performance. Finally, and fourth, existing evaluation tools, such as project decision-making methods, cost-benefit analysis, project controlling and cost, and even typical policies may not be appropriate for MEPs, which can exacerbate inherent problems (Müller, 2015a; Locatelli & Mancini, 2014). In addition, pursuing non-financial target benefits, as well as being susceptible to the political environment and dynamics influence megaproject performance (Patanakul, Kwak, Zwikaël, & Liu, 2016).

### ***Governance for Mega-Event Projects***

Project governance has been widely studied with emergence of the “management theory jungle.” Researchers have extensively reviewed the literature of Ahola, Ruuska, Artto, and Kujala (2014), Müller (2011), Müller and Lecoeuvre (2014), and Ruuska, Ahola, Artto, Locatelli, and Mancini (2011). However, current studies on project governance focus mainly on a single project, a single company, several companies, or a large-scale construction project. There are fewer governance studies on the more complex megaprojects; meanwhile, there are few studies that bridge the project governance literature and general governance literature (Ahola, Ruuska, Artto, & Kujala, 2014).

Unlike ordinary projects, MEPs are multi-dimensional and multi-purpose

phenomena with diverse impacts; their governances have “exceptional” natures and “special regimes” and even relate to state dirigisme levels (Roche, 1994; Bramwell, 1997; Altshuler & Luberoff, 2004; Kennedy, 2015; Müller, 2011). The governance of an MEP is also largely influenced by the institutional environment (Chi, Ruuska, Levitt, Ahola, & Artto, 2011). Jennings (2013) considered that an MEP includes the factors of high levels of politics, risk, and complexity. It is therefore challenging to realize grand, iconic, and schematic visions that offer high-profile policy successes and historic legacies. In addition, there exists a large gap between MEP planning and implementation that involves a complex political process (Roche, 1994). In order to ensure the completion of projects on time, MEPs usually entail “fast-track” decision-making and implementation processes (Varrel & Kennedy, 2011) and involve various stakeholders, including international committees, the general public, special interest groups, the media, private corporate interests, and so on. A variety of stakeholders from different markets, hierarchies, and network hybrid forms also bring challenges to local organizers in terms of their experiences, capacities, coordination, governance, and leadership (Arena & Molloy, 2010; Varrel & Kennedy, 2011; Pitsis, Sankaran, Gudergan, & Clegg, 2014).

Traditional project governance theory shows unsuitability when applied to MEPs. Miller and Hobbs (2005) concluded that the literature tends to treat governance issues as static, but project development processes and environments are dynamic. Governance regimes must change as the project development process unfolds, and must adapt to the specific project, context, and emergent complexity. The design of megaproject governance regimes is also regarded as a flexible strategic process that is dependent, self-organizing, and capable of coping with the different issues that emerge during the project life cycle,

rather than as a static, binary, hierarchical process. The regimes involve a network of actors and a co-evolving process, which includes the project concept, the sponsoring coalition, and the institutional framework. With this background, adaptive and strategic capacities are the keys to navigating megaprojects through uncertainty and complexity (Giezen, 2013) and are also key to mitigating the risks associated with mega-events, such as the Olympic Games (Grabher & Thiel, 2014). Additionally, MEPs challenge a country or region’s existing legislation, civil rights, democracy, and so on, which means that institutional innovation is salient to megaproject governance (Varrel & Kennedy, 2011; Miller, Lessard, Michaud, & Floricel, 2001). Ruuska et al. (2011) considered that the focus should be shifted from a narrow view, which conceptualizes the project as a hierarchical management system, toward an open system view, which interweaves internal project management with external institutions and environments. To investigate the complexity of governing mega-events and megaprojects, researchers studied related governance frameworks and strategies. For example, Miller and Hobbs (2005) identified design criteria that should be brought to bear when developing a governance regime for a megaproject. Bekker and Steyn (2007) constructed a large capital project governance framework under the corporate governance system. Kennedy (2015) described megaprojects as a prism for viewing urban governance. Müller (2011) and Chi, Ruuska, Levitt, Ahola, and Artto (2011) studied the state dirigisme in Russia’s mega-event and megaproject relational governance approach in the context of China, respectively. Using the concept of project ecology, Grabher and Thiel (2014) proposed a method to enhance the mega-event organization adaptability for solving challenges from uncertainty based on the case of the London Olympics. The method refers to three key

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features of hierarchies, including ambiguity, redundancy, and loose coupling. Overall, there is a lack of academic studies on megaproject governance in the context of complexity (Biesenthal & Wilden, 2014) and little attention has been given to the theoretical argument on MEP governance.

### **Evolutionary Governance Theory (EGT) for Mega-Event Project Governance**

The systems of economy, society, politics, and biology can be regarded as a complex adaptive system with strong evolution and dependence characteristics, including nonlinear dynamics, threshold effects, cascades, and limited predictability, which greatly challenge the governance capability of all levels in an organization (Duit & Galaz, 2008). Duit and Galaz (2008) proposed that the key to managing the complexity of governance is adaptive capacity in multilevel governance systems with four kinds of governance types, which include robust, flexible, rigid, and fragile governance. Similarly, Weyer, Adelt, and Hoffmann (2015) summarized several new ideas in the field of governance, including polycentric governance, interactive governance, hierarchical governance, meta-governance, and smart governance, and proposed a multi-level model of governance of modern infrastructure systems. Thus far, the governance of complex systems has drawn researchers' attention, but most of the related studies are still fragmented and lack a mature theory system, application guidance, or empirical validation. Therefore, the emerging framework of Evolutionary Governance Theory (EGT) can potentially solve this challenge by showing "how to entirely and continuously restructure governance to facilitate new understandings of broader changes in society, and new understandings of the spaces for intervention" (Beunen, Van Assche, & Duineveld, 2015).

EGT begins with social systems theory, post-structuralism, and new institutional economics (Van Assche, Beunen,

& Duineveld, 2014). Luhmann (1995) divided social systems into three categories: *interactions*, *organizations*, and *function systems*. These understanding and theories have become an important basis for EGT. Foucault, among the post-structuralists, is the most important for the construction of EGT, especially for some Foucauldian concepts, like discourse. Both complex adaptive system and EGT theories generated very early but applied in governance studies more recently, and the institutional economics that appeared after 2000, enable us to present a picture of evolving governance. Voß (1998) described evolutionary governance as "a mode of governance, which is reflected in strategies and institutions for collective action that can be characterized by the principles of adaptiveness, integration and anticipation." Recent literature defined EGT thus: "EGT is a novel perspective on the way societies, markets and governance evolve. EGT integrates concepts and insights from various theoretical sources into a new coherent framework" (Beunen, Van Assche, & Duineveld, 2015). "Evolutionary in EGT means co-evolutionary, with elements changing each other, with the whole and the elements affecting each other. Evolution creates an openness for change, a specific capacity of observation, but also a set of rigidities in adaptation. Structures and elements of governance are the result of governance evolution." (Beunen, Van Assche, & Duineveld, 2015)

The above EGT statement coincided with two hypotheses proposed by Voß (1998). First, any attempt to intervene in governance should start with a thorough understanding of the context. Second, governance is conceptualized as a highly dynamic context and radically evolutionary; hence, all elements of governance are contingent and are subject to evolution. The elements of governance include actors, institutions, knowledge, objects, subjects, organizations, and so on. The structure, components, and functioning of each individual element, as well as the relationship among

elements, reflect a co-evolution in a specific environment. Governance needs to be actively and continuously reproduced to exist. Changes of particular elements always depend on their interaction with other elements and on their embedding in structures that are the results of same evolutionary process (Beunen, Van Assche, & Duineveld, 2015).

Van Assche, Beunen, and Duineveld (2014) proposed an EGT model including three parts, described as follows:

1. The first part is the configurations of actors, institutions, and power/knowledge. These configurations also co-evolve and can be understood as the meta-configuration marking a certain governance evolution and a governance path.
2. The next part is dependencies and path creation. Each path is marked by dependencies, including path dependence, interdependence, and goal dependence (Shtaltovna, Van Assche, & Hornidge, 2012; Van Assche, Beunen, Jacobs, & Teampau, 2011). In terms of governance evolution, the interrelations between actors, between actors and institutions, between discourses and physical realities, or between different function systems (such as politics and economics) (Beunen & Van Assche, 2013), can all be conceptualized and understood as interdependencies. Interdependency also relates to the way in which different governance paths are linked—to other paths at the same level, to other scales or levels, to physical and social environments—which is always imperfectly understood and controlled by governance (Beunen, Van Assche, & Duineveld, 2015).
3. The third part is governance paths, objects, and subjects. Subjects are social identities as defined in governance, including the identity of the actors present, whereas objects refer to the other elements of the conceptual worlds narrated in governance (Duineveld & Van Assche, 2011; Duineveld, Van Assche, & Beunen,

2013; Van Assche, Beunen, & Teampau, 2011), which can be regarded as the techniques (technologies or mechanisms) of governance (Beunen, Van Assche, & Duineveld, 2015).

In summary, EGT is formed from the combination of traditional governance theory and the incorporation of solutions for new challenges. It is generated when the current theory reaches a tipping point or bottleneck that is difficult to explain in new practices. In this way, EGT and the governance theory have similarities as well as differences. The key is to differentiate between them. “EGT incorporates existing concepts, combines multiple sources, such as economists, post-structuralist, public administration, political science, and its overall architecture is new (Beunen, Van Assche, & Duineveld, 2015). EGT brings new concepts to the analysis of governance in a coherent way (Beunen, Van Assche, & Duineveld, 2015), and entirely restructures its theoretical framework to allow for new understandings of broader changes in society, and new understandings of the spaces for intervention (Beunen, Van Assche, & Duineveld, 2015).” In brief, EGT not only absorbs the essential concept of traditional governance theory, it also continuously reconstructs it by integrating relevant theories to deal with complex social systems in a wider domain, and is therefore more suitable to model and interpret the phenomenon of Mega-Event Projects (MEPs) than by using traditional governance theory. Based on the foundation and framework of EGT, this study aims to solve key problems as follows:

1. What are the contextual characteristics of an MEP? Does the context evolve? What kind of impact will the context bring to governance and evolution?
2. How does the governance framework, actors of configuration, power/knowledge, and institutions influence each other and co-evolve?

3. What are the contextual reasons and characteristics for path, inter-, and goal dependencies? How does each of them evolve? How does path creation occur? What are the different governance techniques in various periods?

## Research Method

To build the EGT of MEPs, this study conducted a longitudinal case study on an influential and typical case based on qualitative analysis, laying the important foundation for theory contribution and discipline improvement (Yin, 2013; Flyvbjerg, 2006). For the case election, we used the “critical case” strategy proposed by Flyvbjerg as World Expo 2010—as the largest event ever, it had a great impact on the industry and practices. “If it is valid for this case, it is valid for all (or many) cases” (Flyvbjerg, 2006). The construction and inference of new theories are completed by strictly following the requirement of a case study and are supported by various sources of information mutually complemented and corrected (Yin, 2013). Meanwhile, inspired by EGT theory in public administration and social science, we used both deductive and inductive methods to investigate the gap or tension point in the context of MEPs, through systematically analyzing external and internal drivers, context characteristics, constitution and co-evolution of configurations, dependency, evolutionary paths, and governance technologies. On the one hand, this purpose of this study is primarily to build theory based on a case study, so the inductive approach has been used as the main method to summarize the framework and elements of the EGT in MEPs. On the other hand, unlike a general case study, this case study (i.e., MEP) is a specific one. Since EGT is a new theory, which was built in other areas and still under development, whether it is suitable in the context of MEPs is still in doubt. Thus, the deductive method is also used to verify and support the argument. According to Eisenhardt and Graebner

(2007), the research result provides fresh theory that bridges well from qualitative evidence to mainstream deductive research. It requires rigorous and thoughtful research design, including careful justification of theory building, theoretical sampling of cases, interviews that limit informant bias, rich presentation of evidence, and a clear statement of theoretical arguments. This explains why this article provides abundant information, data, and evidence. The result is expected to enrich and improve the theories of project governance in MEPs and megaproject management, and to provide insightful suggestions to the practical design of governance regimes.

The data were collected through the authors’ observations and interviews. The three co-authors worked on a professional team that provided onsite construction consulting services (e.g., decision support and project management) and research support for World Expo 2010 China from January 2006 to December 2010, and one co-author worked on the management team of the Expo organization from 2007 to 2010. The authors’ team was the largest outsourced consulting team for the Expo and was awarded the Project Excellence Award issued by the International Project Management Association (IPMA) in 2010, as well as many other national awards issued by authorities in China. The authors had a comprehensive and profound understanding of the entire management process of the Expo construction and collected a large amount of project data and information for this study.

To further ensure the accuracy and comprehensiveness of the information, during the process of carrying out the case study, the authors referred to relevant project files, reports, Expo archives, official documents, papers, and news publications to cross-validate the data resources. Meanwhile, the researchers interviewed 11 senior members from the Expo who worked during the various stages of the life cycle process—from

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Participant	Former (Current) Position in Expo 2010	Work Duration in Expo (Years)	Form of Interview	Interview Topics
Interviewee 1	Chief editor of Expo bid reports, registration report and Expo annals, main principal of Expo theme planning and research.	1999–2015 (16 years)	Site	Expo external environment, governance mechanism design and change, target pressure and dependence in various stages, institutional and policy design, personnel arrangements and so on
Interviewee 2	Functional director of Expo Construction Headquarters Office, Director of Expo Development Group office	2007–2015 (9 years)	Telephone	Post-development of Expo
Interviewee 3	Principal of Expo overall construction project management and research	2007–2010 (4 years)	Site	Expo project management, program management, project governance, project innovation and so on
Interviewee 4	Director of Expo Development Group office	2007–2016 (10 years)	Site	Planning for post-development of Expo
Interviewee 5	Director of Expo Construction Headquarters Office, Head of Party and Community Working Department of Expo Development Group	2008–2016 (9 years)	Site	The governance during the construction and post-development stages of Expo
Interviewee 6	Secretary of Expo development and construction company of Expo Development Group	2007–2016 (10 years)	Site	Project governance in post-development of Expo
Interviewee 7	Director of construction management department of Expo Development Group	2008–2016 (9 years)	Site	Coordination management and relationship between the external environment in post-development of Expo
Interviewee 8	Director of strategic development department of Expo Development Group	2004–2016 (13 years)	Site	Top-level governance changes during the preparation, operation, and post-development stages of Expo
Interviewee 9	Director of strategic development department of Expo Development Group	2007–2016 (10 years)	Site	Project governance and organization performance during post-development of Expo
Interviewee 10	Principal of Expo construction investment consulting, Director of planning and finance department of Expo Development Group	2007–2016 (10 years)	Telephone, Email	Investment control during Expo construction stage and financing model for post-development stages of Expo
Interviewee 11	Vice Director of Expo Construction Headquarters Office, Vice Director of Expo Development Group	2006–2016 (11 years)	Site	Expo overall project governance during construction and post-development stages

\*Note: The number indicates chronological sequence of interviews.

**Table 1:** A list of interviewees and their engagement in the World Expo 2010 China.

early decision making, through the planning, construction, operation, and post-development stages. The interviewees were intensively involved with the project decisions, organizational planning, and policy-making processes, and their jobs covered a wide range of areas, such as program management, zone development, and project management of Expo landmark buildings such as the China pavilion. All interviewees had a deep understanding of the project governance and organizational evolution of the Expo. The interviews were conducted

mainly through face-to-face interviews and supplemented by telephone conversations and emails. The details of the interviewees are shown in Table 1.

### The Case of World Expo 2010 China

#### *Case Background, Performance, and Heritage*

Open from 1 May 2010 to 31 October 2010, the World Expo 2010 China was located at the center of Shanghai and along the two banks of the Huangpu River, covering an area of 3.28 square

kilometers, including 1.88 square kilometers in Pudong and 1.4 square kilometers in Puxi. The entire Expo park hosted 2.3 million square meters of newly built and renovated buildings, including almost every type of construction project—from permanent and temporary pavilions, to tunnels, piers, bridges, parks, and municipalities—all reflecting a theme of “Better City, Better Life.” Before the Expo opening on 1 May 2010, the entire construction and commissioning were finished two months earlier than the planned schedule (Hu, 2011),

with the actual investment of 19.737 billion Chinese yuan being 1.74 billion Chinese yuan (1 Chinese yuan equals to around US\$0.15) more than the expected investment (8.8% over budget). During the Expo operation, the total accumulated cost was 11.964 billion Chinese yuan, a gain of 1.05 billion Chinese yuan in balance. The World Expo 2010 China earned four world records: the largest Expo park area, the largest number of visitors, the most volunteers, and the largest number of activities organized in a world Expo in history (EXPO, 2010; Shanghai Municipal Audit Bureau [SMAB], 2011). In total, the Expo invited 246 countries and international organizations to participate, with a total of 73.08 million visitors and 1.0328 million visitors on the peak day (i.e., 16 October 2010); it hosted 22,900 activities and involved 79,965 volunteers. Expo 2010 also created two major innovations: the “Internet World Expo” and the “Urban Best Practices Area (UBPA).”

The successful hosting of the World Expo 2010 China had a significant effect, driving the city’s economic prosperity, raising the city’s international image, enhancing infrastructure renewal and recreational facilities, transforming old Shanghai, and shaping a valuable legacy for the city (Wang, Xiaokaiti, Zhou, Yang, Liu, & Zhao, 2012; Yu, Wang, & Seo, 2012; Deng, Poon, & Chan, 2016). During the redevelopment of the Expo Park, facilities such as permanent landmark pavilions, the UBPA, and renovated industrial buildings became the World Expo museum, a convention center, a performing arts center, and business centers. Similarly, the Expo also brought significant impact to the urban economy and urban development. For instance, the retail and hotel industry in Shanghai reached estimated record levels during the World Expo period. Five-star hotel occupancy rates rose from less than 40% in 2009 to about 80% during the Expo (Wharton School of the University of Pennsylvania, 2010). The entire infrastructure of Shanghai achieved impressive progress; for

example, the subway construction, the central link project, Hongqiao Airport Terminal 2; the transformation of the Bund waterfront area, with an entire cost that reached up to US\$45 billion, greatly enhanced the efficiency of the city of Shanghai. With the theme of “Better City, Better Life,” the World Expo 2010 China also promoted education, innovation, and cooperation for urban quality of life, generating a far-reaching impact on Shanghai urban sustainable development and public participation (Lamberti, Noci, Guo, & Zhu, 2011).

### **Challenges and Organizational Strategies During the Different Stages**

The life cycle of an MEP can be divided into four stages: bidding, preparation, operation, and post-development. For the World Expo 2010 China Shanghai, the background, challenges, and organizational strategies of these stages are summarized in Table 2. Key organizations, their functions, and roles are detailed in Appendices 1 and 2 at the end of this article.

## **Governance Evolvement in the Expo Project**

### **Project Context and Goal Evolvement**

During the bid stage, the Expo project drew a large amount of attention from the Chinese and local Shanghai governments. At this stage, the core target goal was to obtain the host rights by prevailing over the other four candidate cities. To achieve this target, the Chinese and Shanghai governments proactively carried out various administrative tasks, including motivating stakeholders and obtaining wide support from international associations and governments, as well as the public.

- **Project Targets**

After winning the host rights, the project target was changed to hosting a “successful, splendid and unforgettable” event, to leave a lasting legacy, and to fulfill all promises made during the bidding stage. Against this background, although the central and local

government provided tremendous support to World Expo 2010 China, “the project faced unprecedented challenges and complexity from both the internal and external environment, such as how to timely complete the design, construction and commissioning of all pavilions, infrastructure and municipal facilities; how to coordinate urban renewal projects outside the site but within Shanghai; and how to properly build harmonious public relations and public participation” (Interviewee 3).

After the Expo, determining how to transfer the legacy of the Expo, developing the Expo Park into a demonstration area of Shanghai urban revitalization, and turning it into a public center of Shanghai, became the goals for the newly established state-owned company “Expo Development Group.” Although the Shanghai government had set up a “leadership group” to support the Expo post-development, its support was restricted to limited fields, and the core operating mechanism of the Expo post-development was based on marketization and enterprise-driven mode. “The Expo area lacked a clear post-development plan and its future was mainly determined by the Shanghai Thirteen Five Plan (2016–2020)” (Interviewee 1). “The Expo post-development situation and progress was not as good as was expected before.” According to another interviewee (Interviewee 2), “the post-development was facing high pressures of fierce market competition, and the changes in the market greatly exceeded the company’s expectations (Deng, Poon, & Chan, 2016). We experienced a similar problem as met by the “Expo Land Company” during the Expo preparations stage, and the main problem was the inability to coordinate all kinds of efforts among different stakeholders to redevelop the Expo Park (Interviewee 6).”

- **Project Context**

The change of project contexts had a significant impact on the achievement of project targets. The project context and environment for the Expo dur-

# Evolutionary Governance for Mega-Event Projects (MEPs)

Stage	Time	Background	Challenges	Key Organizational Strategies
Bidding	1999.5–2002.12	<p>Shanghai Pudong New District is an important demonstration area to show China's market reform and opening up for Shanghai and even the nation.</p> <p>Coincided with the 20th anniversary of the foundation of Pudong New Area in 2010, and other multiple catalysts to showcase China and Shanghai's image; to promote economic development; to enhance international visibility; to promote urban renewal and other political, economic, cultural, and urban development; and to follow the 2008 Olympics, the Chinese government decided to bid for the World Expo 2010 China.</p>	<p>Steep competition from the other four countries in order to win a chance to host the World Expo for the first time in a developing country.</p>	<p>In order to win the fierce competition:</p> <ul style="list-style-type: none"> <li>—The Chinese government set up "World Expo 2010 China Bid Committee"</li> <li>—The Shanghai government set up a "World Expo 2010 China Bid Preparatory Work Group" and a subsidiary special temporary office "World Expo 2010 China Bid Working Office"</li> <li>—The Chinese Government committed to support Shanghai for the bid to host the World Expo 2010 China</li> <li>—The Chinese government representative formally submitted the bid application</li> </ul>
Preparation	2003.1–2010.5	<p>Expo park is located at the edge of the Shanghai city center, along Huangpu River, with excellent accessible conditions. However, this area is also in urgent need of rehabilitation and renewal for Shanghai City, because this area was full of a large number of historical factories, warehouses, docks, and residential buildings (CPGPRC, 2006).</p>	<p>The development and construction of Expo park is a very complex megaproject:</p> <ul style="list-style-type: none"> <li>—Needed to relocate 18,452 residents and 272 enterprises before 2007</li> <li>—Needed to construct 136 pavilions, 160 supporting facilities and municipal supporting projects.</li> <li>—Extremely tight schedule between award and opening, with only 40 months to complete all construction activities, and five months for exhibition and trial operation.</li> </ul>	<p>After being awarded the host rights, the Chinese government gave strong support to World Expo 2010 China preparation by establishing the following institutions:</p> <ul style="list-style-type: none"> <li>—World Expo 2010 China Coordination Bureau (referred to as World Expo Bureau)</li> <li>—World Expo 2010 China Organizing Committee and the Executive Committee</li> <li>—The Shanghai Government fully invested and established two new companies: Expo Land Company and Expo Development Company.</li> <li>—The establishment of World Expo 2010 China Construction Headquarters and the subsidiary temporary agencies, called "the office," specialized in construction management and was comprised of up to 300 staff members.</li> </ul>
Operation	2010.5–2010.10	<p>The organizers expected visitors to be around 30 to 40 million, and then adjusted the number to 70 million in the official registered report, whereas the actual visitors reached 73 million, far more than the number in the 2005 Japanese Aichi Expo (46 million).</p>	<p>Operations Management faced with high pressure, including facility maintenance, preparation of security, emergency, transportation, and volunteer organization, exhibitors, and visitor services.</p>	<ul style="list-style-type: none"> <li>—Establish a city-wide security and emergency command center</li> <li>—Establish an Expo park operations command center initiated by World Expo Bureau, with the core functions and tasks to command and coordinate all operations, security, logistics, and services within the park</li> <li>—Officially formed "Guidelines for Expo facility security operations"</li> </ul>
Post-development	2010.11–	<p>"According to overall strategic planning considering Shanghai city and the layout of the Huangpu River development, through the construction, operation during the Expo and post-development after the event, the Expo park area will become another city landmark in Shanghai, with the function of modern civilization, international cultural exchanges, and business services center, to become the model of redeveloping mega urban centers." On March 2011, the after-Expo planning was completed and went to announcement and public hearing.</p>	<p>How to transfer and continue the heritage of Expo, how to achieve sustainable development, how to become another "drive engine" for Shanghai in future development, and how to become a new landmark in Shanghai.</p>	<ul style="list-style-type: none"> <li>—The Shanghai municipal government approved the establishment of the Expo Development Company.</li> <li>—Established the "World Expo 2010 China Site Post-Development Leading Group"</li> </ul>

**Table 2:** Backgrounds, challenges, and organizational strategies during the life cycle stages of the World Expo 2010 China.

ing these stages can be analyzed in six aspects according to the PESTLE (Political, Economic, Sociological, Technological, Legal, and Environmental) model (Burt, Wright, Bradfield, Cairns, & Van Der Heijden, 2006). The analysis showed that the greater the government and financial support, the smaller the pressure to achieve the project targets. From the political aspect, although supported by the government during all stages, the political support actually declined with time, gradually transmitting from central government-led, to local government-led, to enterprise-led. From an economic perspective, compared to the strong government financial support received during the early stages of bidding, preparation, and operation, the Expo post-development lacked direct administration funding and mostly depended on market-oriented enterprises and operation mechanisms. Therefore, the post-development company faced high pressure on the corporate financing capacity and “had to primarily depend on land sales to fund new project development” (Interviewee 10). From the technological aspect, during the preparation stage, there was enormous pressure to finish the construction of exhibition pavilions and infrastructures in a short period with high quality; during the operation stage, the greatest challenges lie in security, emergency response, and management. From a legal perspective, the Expo post-development lacked strong government-supported policies compared to the bidding, preparation, and operation stages. From an environmental perspective, the adjustment was much more radical during the stages of preparation and post-development of the Expo. Among these aspects, stronger support from political and economic aspects meant more resources (such as goods, organizations, and subsidies) were obtained and mobilized to realize the project target.

### ***The Structure, Composition, and Evolution of Governance Configuration***

The governance framework evolution of the World Expo 2010 China is summarized

in Figure 1; generally, it applied a multi-layer governance structure and a vertically integrated organization to managing the entire event. The governance structure gradually changed from a two-tier government-orientated structure (both the central government and the Shanghai government) during the bidding stages, to a three-tier structure during the preparation stages, and then to a two-tier structure during the Expo post-development stages, in order to effectively deal with the complexity of the project and dynamics of project environment with high adaptability (Chi, Ruuska, Levitt, Ahola, & Arto, 2011; Duit & Galaz, 2008; Weyer, Adelt, & Hoffmann, 2015; Ruuska, Ahola, Arto, Locatelli, & Mancini, 2011).

- ***The Central Government***

From the aspect of governance function, the central government focused mainly on overall leadership, decision making on major issues (such as law-making, top-level appointments) and the coordination related to national and international scopes. The Shanghai government was primarily concerned with decision making on the median-level issues and specific deployments, leadership, and coordination at the municipal level; quasi-governmental temporary agencies, such as the “World Expo Bureau” and the “Expo Construction Headquarters,” were in charge of the preparation, organization, operation, and coordination for mega local events. Wherein the quasi-governmental temporary agency is the common organizational model in China to implement mega-events and megaprojects, such as the 2008 Beijing Olympic Games and the 2012 Guangzhou Asian Games, in which similar institutions were also established. The construction headquarters (“Zhihuiibu” in Chinese) was typical of quasi-governmental temporary agencies commonly used by government in MEPs with high progress pressure and complex coordination. The involved enterprises were responsible for the implementation of specific operations, activities, and functional

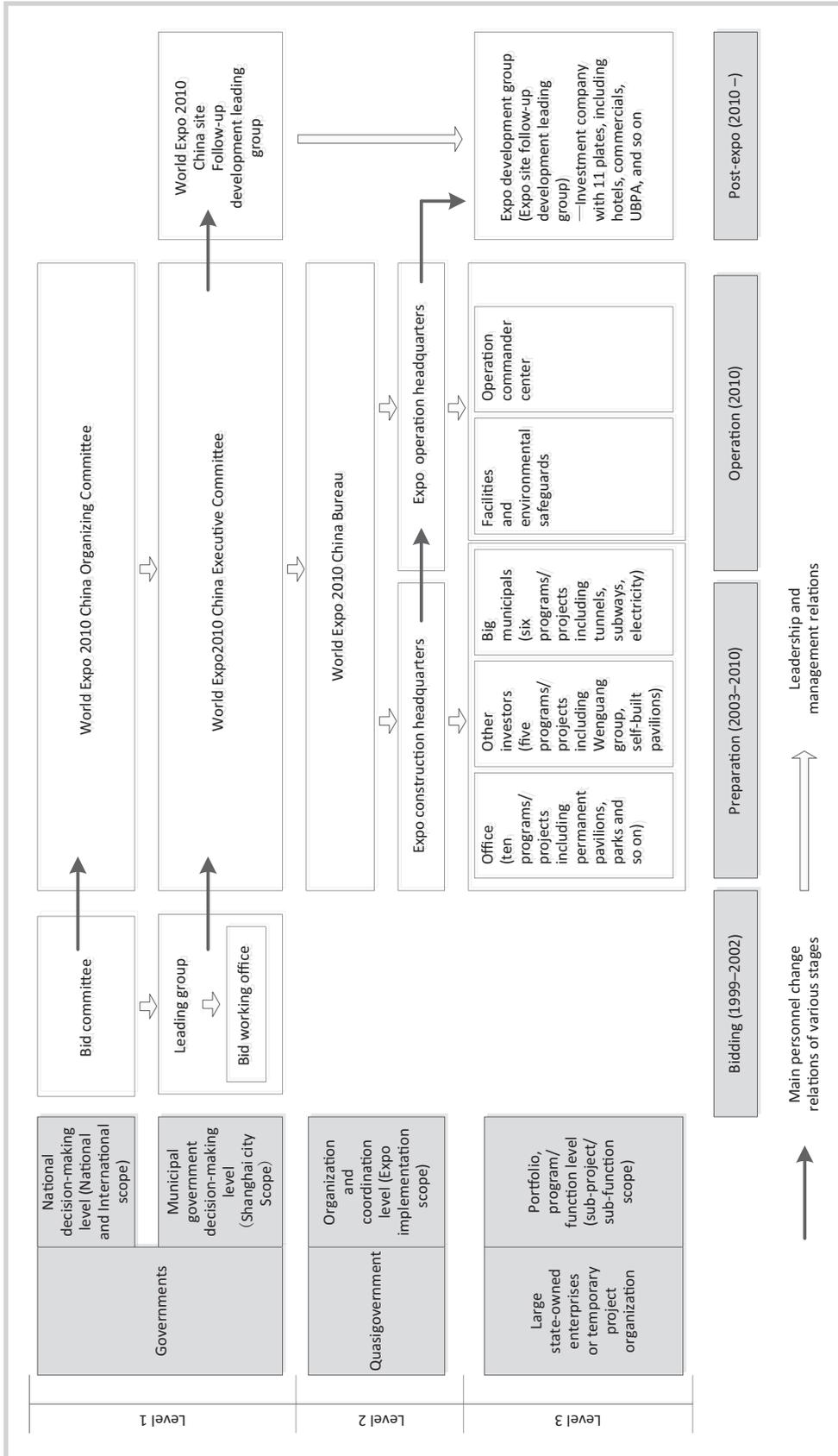
tasks. All of the above forms and strategies were practiced in the Expo governance. However, the complexity of the Expo constantly changed and largely surpassed expectations; accordingly, therefore, the governance structure and strategy needed to be dynamically adjusted to the changes from both internal and external contexts.

Figure 2 illustrates the evolution and changes of the departments in the World Expo Bureau from its inception until the end. Along with the increase in tasks, the number of departments also increased accordingly. Sudden changes in number occurred in three particular stages, mainly in the Expo inception period (stage 1), the preparation period that demanded large-size construction (stage 2), and the preparation periods during the Expo’s opening ceremony (stage 3).

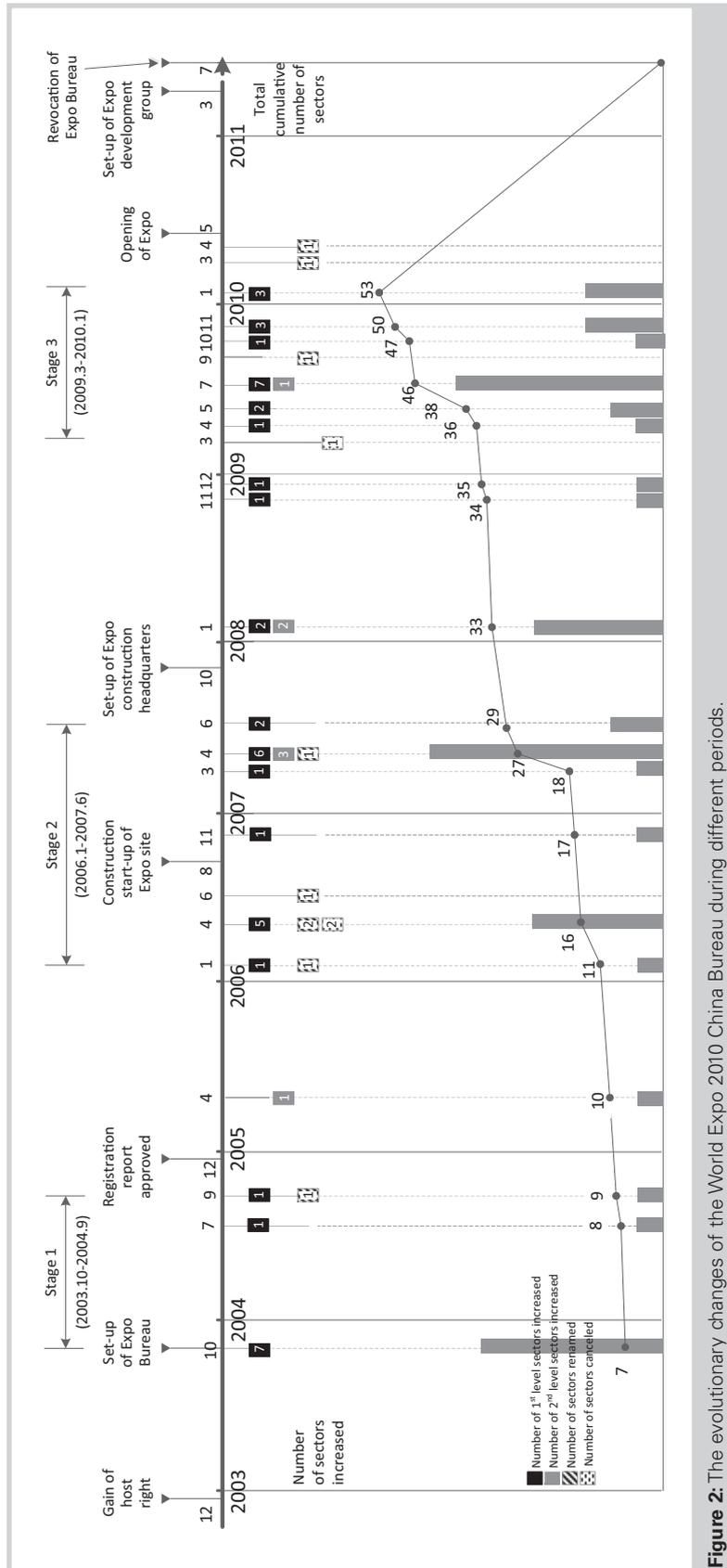
- ***Quasi-Government***

Quasi-governmental agencies, such as the Expo Construction Headquarters, usually have a close relationship with the state-owned enterprises, and can apply an integrated team model that can effectively improve program management capacity (Chi, Ruuska, Levitt, Ahola, & Arto, 2011; Hu, Chan, & Le, 2014). According to interviewee 2 and interviewee 3, “we sent two or three members to each project, let them be the spiritual leader in that project, and then we recruited professional engineering and management teams to form as one project team. We consciously preferred to tender state-owned large enterprises with good management skills and capabilities in the bidding process. Given that other qualifications are similar, we tilted our selection to large or medium sized state-owned enterprises with considerable management experience” (Hu, 2011). Another interviewee recalled the original of the Expo Construction Headquarters as follows, “since the project schedule was very tight during the early stage, the World Expo Bureau and government leaders were already aware that the sole entity (Expo Land Company) was too weak

# Evolutionary Governance for Mega-Event Projects (MEPs)



**Figure 1:** The governance framework of World Expo 2010 China during the life cycle stages.



**Figure 2:** The evolutionary changes of the World Expo 2010 China Bureau during different periods.

## Evolutionary Governance for Mega-Event Projects (MEPs)

to carry out the task of the Expo site's construction management. The World Expo Bureau had to also be involved in the coordination and management of construction projects, studied experiences of mature construction modes from existing major projects in Shanghai, and established the 'Expo Construction Headquarters' to organize and coordinate all available resources that could be mobilized from various entities." (Hu, 2011)

- **Roles and Responsibilities**

For the appointment of important personnel, the government first considered the position and level of authority in order to facilitate the organization and coordination. For example, the "World Expo 2010 China Organizing Committee" and the "World Expo 2010 China Executive Committee" both consisted of highly ranked officers from the national and Shanghai governments. Second, the appointment also considered professional knowledge and experience. For example, the executive deputy commander for the Expo Construction Headquarters was previously one of the senior officers of the Shanghai Housing and Urban and Rural Construction Management Commission. He also had senior leadership experience in both large-scale state-owned construction enterprises and had held professional project manager positions in several mega construction projects in Shanghai. Third, the requirements of leadership (i.e., their power and knowledge) were also changed in various stages when the project contexts, tasks, and goals changed. During this process, key personnel had to support the existing situation with slight adjustments when necessary. For example, the director and committee members of the World Expo 2010 China Organizing Committee and World Expo 2010 China Executive Committee remained stable through the bidding, preparation, and operation stages. The leaders and work groups of bid preparation had a smooth transition to the operational stage, and later to the stage of Expo post-development. During

the transition process from the construction phase to Expo post-development, "several staff members from the existing construction team were promoted to higher positions in the post-development team" (Interviewee 5).

In the design of the management system, the balance of powers and responsibilities for project leaders were considered. For example, during the construction stage, "strengthening the project-oriented structure is one typical organizational pattern formed in practice, so that the project team had full authority to implement the project. Because, if a project team does not have any command ability, project coordination can be very difficult. Therefore, we decentralized a certain level of power to the project team, such as right of approval, decisions, command, fund allocation and design changes." (Hu, 2011)

- **Transitional Formalities**

During the transitional process of governance, formal regulations, institutions, and policies provided important support and guaranteed the stability and evolution of the multi-layered Expo governance. In China, centralization and an elitist governance model are institutional features; therefore, the styles of leaders largely decided and influenced the formation and evolution of governance mechanisms, reflecting the changes of the development process and political environment. For example, during the construction stage, Headquarters published the "World Expo 2010 China Construction Program Outline," which included 43 regulations and procedures as the supreme guide to regulate construction management and relevant stakeholders' behaviors (Interviewee 3; Hu, 2011). In accordance with this outline, individual projects developed specific procedures and work instructions. It is worth noting that due to the differences in project management teams and project characteristics, project operational procedures and guidelines were different. When the local governance structure adjusted, the

regulating system also changed accordingly. Hence, there was a strong and dynamic interaction between management entities and management systems.

### **Dependence, Evolutionary Path, and Governance Techniques**

Before the World Expo, China already had experience in hosting large-scale international events, such as the 2001 APEC Conference in Shanghai, the Kunming World Horticultural Exposition in 1999, and the 2008 Beijing Olympic Games. The learning mechanism from the prior events enabled China to follow established governance models for subsequent mega-events. Once one certain model was adopted, the formation of path dependence also occurred. Such path dependence existed in the governance structure and compositions evolving during the stages of bid, preparation, operation, and post-development. The path dependence included strong support by the government, continuation of the multi-layered governance model and system, retention of top management teams in different stages, and so on. At the same time, the governance configuration, such as the appointment of top management teams, the establishment of "project-oriented state-owned enterprises," and the relations between government and private entities, was also affected by various kinds of external factors, such as China's institutional systems, the strategic influence of the Expo, doctrines and regulations, and current engineering markets. Centralized governance and an elite management model also imposed "a personal management style" on the management systems and culture and led to the creation of a team culture. "The leadership and style of individual Expo officers did have differences, but for the senior leadership officers, they paid more emphasis on results than management styles" (Interviewee 1). Intensive dynamic interactions and interdependences existed among actors, institutions, governance structures, and project culture.

• *Target Interdependence*

An MEP may have multiple targets that contradict each other, such as conflicts between schedule and cost, conflicts of interest among stakeholders, and inconsistent long-term and short-term goals. Target interdependence is always in a dynamic evolution at each stage. For example, in the bid stage, the visions of the government and the public are highly consistent, such that 94.4% of the people supported the bid to host the Expo (Bidding Report, 2001). However, the preparation and operation stages, conflicting targets emerged, resulting in the adjustment of the governance structure. In particular, the features of the Expo Land Company were inconsistent with the requirement of the Expo construction,

so the early construction progress was inefficient.

Later on, the Expo Construction Headquarters was established and took over the construction tasks from the Expo Land Company, significantly improving the construction efficiency (Interviewee 3; Hu, 2011). The monthly construction costs are shown in Figure 3. The years 2008 and 2009 were the peak years for Expo construction, especially the end of 2009. The peak investment also indicated the phenomenon of “rush for deadline.” In the post-development phase of the Expo, a conflict of targets emerged from the government development requirements, the financial capacity of state-owned enterprises, and the unexpected changes in the market. In order to adapt to these changes, the Expo Development Group

had to dynamically adjust its organizational structure (Interviewees 8 and 9).

• *Governance Techniques*

Due to the extreme complexity of MEPs, there was a lack of mature governance techniques. During the project, one interviewee stated: “We have no experience in this area . . . and we do not know what to do, how to do . . . and just grope along without any preconceived plans” (Interviewee 2). Both formal and informal governance techniques were used, such as institutionalization, professionalism, incorporating information technology, using multi-level scheduling plans as the formal control, as well as controlling project culture, meritorious contest, and instituting self-control to reduce administrative risk as an

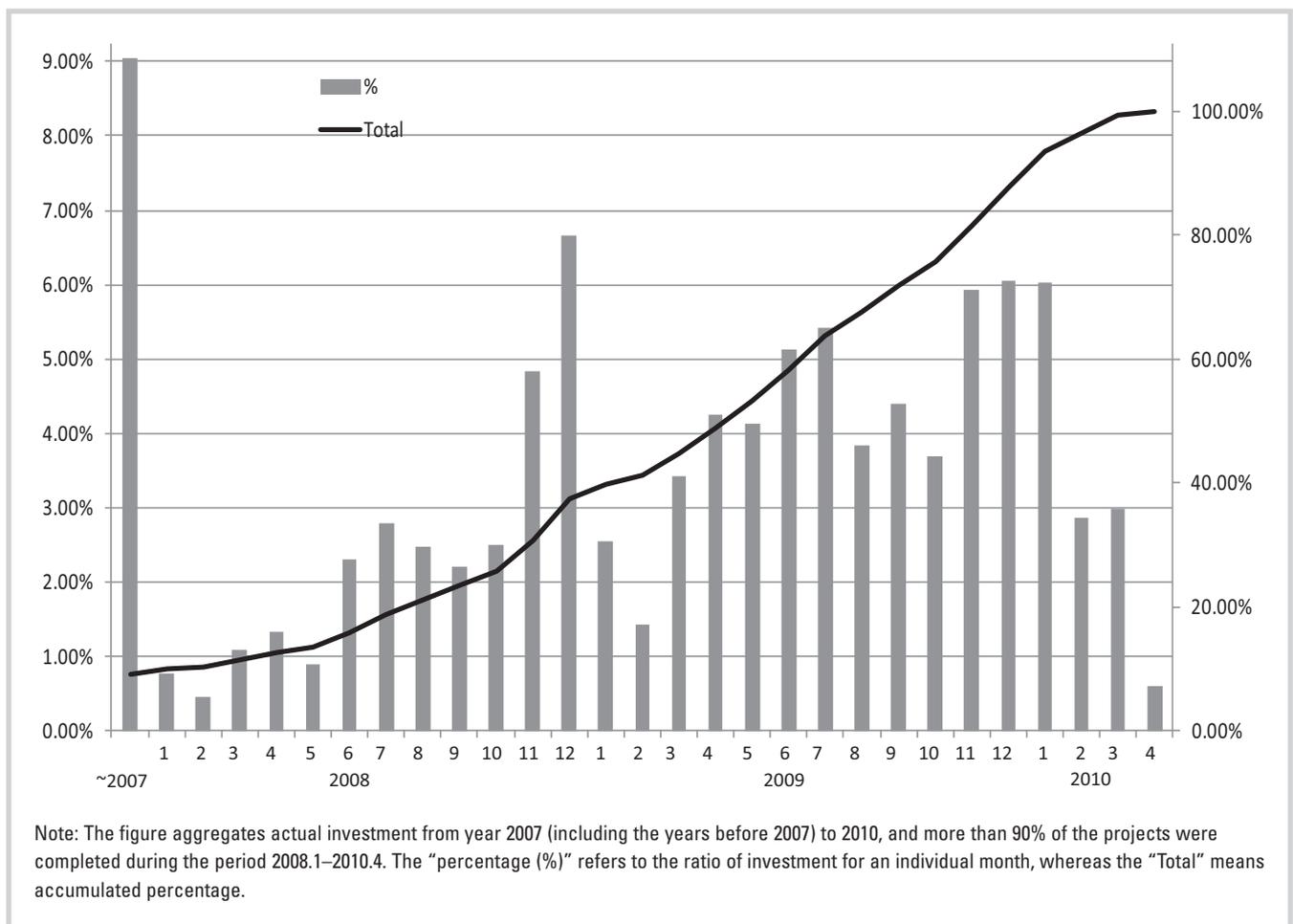


Figure 3: Expo construction monthly investment completion curve.

## Evolutionary Governance for Mega-Event Projects (MEPs)

informal control (Li, Lu, Kwak, Le, & He, 2011; Hu, 2011). Five specific governance techniques used in the Expo are described as follows:

1. Key decisions and policies were issued by the central government to reflect the importance and authority of the project.
2. Thematic conferences were used for coordination and decision making at the government level. For example, the World Expo Organizing Committee held ten conferences before the opening of the Expo.
3. Institutional systems were an important guarantee for the governance of World Expo 2010 China. These systems were also continuously forming, evolving, and updating during the entire Expo. For example, the "Registration Report" and more than 150 types of systems and procedures ensured the efficiency and standardization of the successful construction and operation of EXPO 2010 (Interviewee 3; Hu, 2011). *"Some systems also needed to break the existing framework, such as the human resource system, so the employees were quickly promoted in Expo" (Interviewee 1).*
4. Third-party audits also played a vital role in the improvement of transparency so as to avoid any corruption in the Expo.
5. A healthy and active project culture also ensured the success of the Expo. Hu (2011) said *"There are 300 full-time employees in the Expo Construction Headquarters, but only three of them officially belong to the World Expo Bureau. All of the other people are temporarily sourced from different companies and agencies. So as a new department itself, it has no culture. We have to create the culture based on fragmented pieces brought in by individual staff*

*members, re-integrating a new team culture for the Expo."* However, there were some lessons learned during the Expo process, such as *"the unbalanced focus on the back-end stage, ignoring the front-end stage, resulted in serious consequences for Expo construction. So, I hope we will learn from it and avoid such lessons in future projects."* (Hu, 2011).

The evolutionary analysis of governance elements in the above case can be summarized in Table 3. Governance contexts, goals, configurations, and techniques have been drastically changed during the life cycles of MEPs. Among four stages, the preparation and operation stages are the most complicated and their associated configurations and techniques are also diversified. With the decrease of the external pressure and the complexity of the contexts, the government gradually withdraws its control and the means of governance tends to be simpler. At the bidding stage, the target is under high pressure, so the project receives a high level of government support, whereas the means of governance in this stage is relatively simple since the stage goal is straightforward. Thus, in general, the governance elements of MEPs and the relationships between them reflect the dynamically evolutionary process—from simple to complex and then to simple, but the governance configurations and techniques must be flexibly adapted to contexts and goals.

### Discussion

In this section, we expand the discussion of EGT in the Expo case in three dimensions: the evolution of MEP contexts and characteristics, the evolution of governance configuration, and the evolution paths of MEP governance and technology

#### *The Evolution of MEP Contexts and Characteristics*

The context and environment in which the governance exists have to

be thoroughly understood before analyzing the governance (Beunen, Van Assche, & Duineveld, 2015). As for a temporary project, no project is an isolated island. The project analysis must link to its historical and organizational context to understand elements such as uncertainty, complexity, rate of change, allocation of authority, the availability of resources, institutional aspects, and the external or macro environment (Engwall, 2003; Ruuska, Ahola, Artto, Locatelli, & Manici, 2011). In terms of governance, all elements of governance are contingent (Beunen, Van Assche, & Duineveld, 2015), so it is necessary to deal with different issues at different stages of the project life cycle (Miller & Hobbs, 2005). Unlike small and medium-sized projects, MEPs, such as the World Expo 2010 China—especially during the preparation stage—are planned under national or urban strategic systems as a manifestation of strong and distinct political, economic, and social symbols. MEPs often entail numerous and complex stakeholders and are influenced by multiple factors, including national and urban policies, legal systems, institutions, and culture. As suggested by the result of a PESTLE analysis of the World Expo 2010 China case, each project contextual variable was observed to change, slightly or fundamentally, over the course of the entire project. Meanwhile, the external political system has a significant impact on the top-level governance and the long-term strategic planning of an MEP. One example is that the government election of Five-Year Plans on Urban Development significantly influenced the post-event development.

A target is not only a task that a project needs to complete, it also constitutes the context of the project. For MEPs, targets are always dependent, evaluative, and more diverse than typical, normal sized projects. The targets of MEPs include project time, investment, quality, and safety, as well as relevant social impacts, public satisfaction, and environmental sustainability. Goal

Stage	Contexts				Goals				Organizational configurations				Techniques	
	Complexity of PESTLE	Political Support	Pressure	Interdependence	Composition	Structure	Scale	Power, Roles, and Responsibilities of Actors	Transformation of Actors	Diversities	Qualitative Means			
Bidding					Government	Two-tier		Officers					Administrative	
Preparation					Government + Quasi-Government + State-owned Enterprises	Three-tier		Officers + Professionals					Administrative + Market	
Operation					Government + Quasi-Government	Three-tier		Officers + Professionals					Administrative + Market	
Post-development					Government + State-owned Enterprises	Two-tier		Quasi-Officers + Professionals					Market	

Note: The levels, ranging from low to high:

**Table 3:** Evolution processes and relationships between governance elements.

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dependency happens when the visions, narratives, ideologies, or discourses—formally institutionalized by policies, plans, or laws—affect the co-evolution of actors and institutions, whereas shifting targets of governance lead to new institutions and discursive shifts of the positions of the actors (Beunen, Van Assche, & Duineveld, 2015). The changes of prioritized targets often become one of the fundamental reasons for the evolution of governance. For example, the project schedule target during the preparation stages was prioritized in order to ensure on-time completion of the infrastructure. This prioritized target also became the biggest concern and source of pressure for the project, resulting in the most complex governance structure. However, once entering the post-development stage, the project completion target was no longer the main focus of the government, thus support from the government was drastically reduced.

### *The Evolution of Governance Configuration*

As for MEPs, governance is a multi-level phenomenon that facilitates the interactions between organizational actors within and across organizational levels (Biesenthal & Wilden, 2014), and facilitates different functions such as coordination, regulation, and operational control (Weyer, Adelt, & Hoffmann, 2015). According to this case analysis, a multi-level structure is influenced by the political system and project complexity. In the World Expo 2010 China, a mixed governance structure of vertical integration and an elite management system was adopted, supported by a multi-layer structure, which included government and quasi-government-owned companies. A similar result was also observed in other case studies (Chi, Ruuska, Levitt, Ahola, & Artto, 2011). However, at different stages of the project, the multi-layer structure changes. The boundaries between levels will blur, and more subordinate governance departments may be derived under one upper level. So, the

governance structure may change into an embedded structure and become more complex. Even holding a multi-layer structure constant, the core organization may also constantly change, such as in the Expo case in which the World Expo Bureau conducted organizational adjustments 19 times in order to meet the needs of project governance and management.

Actors, institutions, power, and knowledge are important factors that constitute governance configuration and are constantly co-evolving. According to EGT (Beunen, Van Assche, & Duineveld, 2015), actors and institutions depend on each other for their survival and continuous transformation. Formal and informal actions play a role in the evolution of governance. Once actors are in place and functional, they guide the formation and transformation of specialized institutions, whereas the existence of institutions influences the formation and transformation of actors. Due to the temporary nature of projects, the complexity of organizations, and challenge of targets, actors in the Expo case at different levels of authority applied various levels of systems and policies to regulate the behavior of the project participants, and even broke the rules or the scope of the existing system to form proprietary institutions or policies. In a certain context, a system will also be quickly formed to mobilize market resources and meet extreme high-level pressure targets. The concurrent appointment of senior government officers is good for the formation of special systems. Meanwhile, the participating units or people with the appropriate government background and professional expertise are often appointed to high-level authority roles or positions. In the case of the Expo, large state-owned enterprises had more project opportunities than other types of companies, and their positions were even higher than the contractual relationship and the owner-oriented integrated management team. Certain project managers in charge of iconic

projects were promised more power and faster promotion to achieve the project goals. Knowledge and power not only serve and highlight actors, but they also create them (Beunen, Van Assche, & Duineveld, 2015). During the post-development stage of the Expo, however, due to the lack of government support, the owners' resource mobilization powers were weakened, and the relationship between the owners and these companies returned to a typical state of conflict and competition. According to EGT, the interplay among power, knowledge, actors, and institutions is a meta configuration, which serves as a fundamental keystone to help deepen our understanding of evolutionary governance (Beunen, Van Assche, & Duineveld, 2015).

### *The Evolution Path of MEP Governance and Technology*

Three different sets of dependencies can be distinguished: path dependencies, interdependencies, and goal dependencies. In other words, the path taken, the previous forms of governance, its elements, its structures, and its organization, have a wide range of effects. Regarding governance evolution, interdependencies refer to the relationships between actors, between actors and institutions, between discourses and physical realities, or between different functional systems, such as politics and economics (Beunen & Van Assche, 2013). Together, the different sets of dependencies create rigidities in governance paths and influence the evolution path of governance (Van Assche, 2014; Beunen, Van Assche, & Duineveld, 2015). Based on the observation of the Expo case political system, we know that the experience of similar projects and early-stage governance mechanisms design often affect the trajectory of later changes, such as organizational structure, personnel, and systems and procedures. Meanwhile, the continuity and stability of core management personnel and top management teams at different stages help to form a dynamic

governance capacity that can balance the implementation of existing traditions, deal with the complexity of innovative situations, and achieve a long-term target (Davies, Dodgson, & Gann, 2016). Radical change is often due to an urgent target, especially a “pushed” change generated by the pressure from a tight schedule demand. Examples from the case study are the establishment of the Expo Construction Headquarters and the functional change of the Expo Land Company.

Governance technique is not only a theoretical construct that is useful for the analysis of governance and its elements (Beunen, Van Assche, & Duineveld, 2015); it also includes methods, tools, procedures, policies, systems, culture, and other formal and informal “technology,” such as cost budgeting (Anderson, 1998). ‘Techniques’ can be used to exercise political control and/or be used for administration (Beunen, Van Assche, & Duineveld, 2015). Because of the complexity of MEPs, the project team often used diverse techniques to perform MEP governance, including mandatory approaches such as formal policies, regulations, and programs, as well as informal project culture and relationship governance. At different stages, due to the different types of government support and different levels of private sector participation, governance techniques need to be adjusted and changed according to the actual requirements and yield to different effects. It can be observed from the case that, during the bidding stage, the government often relied on administrative powers and means; in the preparation and operation stages, dual administrative and market means were adopted; and in the post-development stage, market-based instruments became the main measure. Different sets of governance techniques caused a significant difference in the different stages. In the Chinese political system and environment, “concentrating all forces to accomplish a major task” often improves efficiency, but may also result in the risks of creating an unfair market, destruction

of a balanced system, and rent-seeking behaviors that obtain economic gain without reciprocating benefits.

## Conclusions

Although many existing studies investigate megaproject management and project governance, few studies have focused on the Evolutionary Governance Theory (EGT) for MEP. Based on 17 years of longitudinal and in-depth analysis of the World Expo 2010 China during its bidding, preparation, operation, and post-development stages, the authors studied EGT in MEP based on the theory of EGT, institution theory, and project governance theory. Four sets of key findings are summarized as follows: First, unlike typical projects, the context and targets of MEPs have fundamentally unique attributes of openness, complexity, and variability, which construct the external factors driving the evolution of project governance.

Second, in order to achieve the project goals and vision, governance structure, and elements need to constantly evolve to improve adaptability and resilience. The elements of governance configuration co-evolve by interacting with each other during the entire project life cycle.

Third, the evolution of the MEP may have path dependence in certain situations, so governance elements may be maintained at different stages of evolution; however, when under pressure from a specific project stage, a new path may be created locally. Fourth, MEP governance has multivariate techniques, including formal and informal techniques. Different governance strategies and technologies at various levels and stages may bring either positive or negative consequences.

The theoretical contribution of this study includes three aspects. First, the study enriches governance theory for MEP or megaproject management. We undertook an EGT-based analysis on the governance mechanism of MEP and proposed a systematically theoretical framework through a typical case study

of the World Expo 2010 China. Second, the study enhances and expands EGT by proposing a specific application of EGT in the context of MEPs, and in relation to a new development of EGT under this application. Third, the finding of this study also provides a reference point, experience, and methodology for MEPs, especially mega-events featured by comprehensive functions and characteristics.

Although the conclusions are drawn strictly from theoretical research supported by a longitudinal in-depth case study and extensive literature review, the study is still subject to several limitations, as follows. First, there is a particularity in analyzing one case; in other words, the phenomenon may be contingent upon the special context or the causal logic could be influenced by random factors. These possibilities may cause deviations to the conclusion. In this regard, future studies can conduct multiple-case studies and cross check the conclusions of similar cases and projects. Second, the case occurred in the Chinese cultural context. Although the results were in line with culture and institutions in China, whether the conclusion is robust in different cultures needs to be tested by a comparative study among multiple cases in different situations and in different countries. Third, this study analyzes the case of an Expo, but MEPs have many types, such as major sporting events similar to the Olympics and World Cup or international conferences. These cases are similar yet have fundamental differences. To what extent these differences affect the validity and applicability of the conclusion can be compared by cross-case analyses. The above limitation is precisely the direction of future research. Megaprojects are increasingly becoming important phenomena of social and economic development and a new field of study, but a megaproject is complex and needs to draw theories from other disciplines to form a theoretical foundation for the adaptation of its own context. Although some conclusions and theoretical frameworks have already

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been figured out from the study, this is just the beginning of conducting further research on megaproject case studies, theoretical studies, and empirical studies, providing a variety of research opportunities for future studies.

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## Appendix 1: Key organizations and their functions in various stages of World Expo 2010 China.

Stages	Levels*	Name of Organization	Composition	Function	Principal
Bidding	1-2	World Expo 2010 China Bid Committee	Members include the principals of the six departments under the State Council and Shanghai government	In charge of Expo bidding as the representatives of the national government, making decisions on the affairs related to Expo	State Councilor in charge of foreign trade
		World Expo 2010 China Bid Leading Group	Members include the principals of the 19 departments under the State Council, 5 national companies, and 1 research institution.	Arrange, coordinate, and make decisions on all the related affairs about Expo bid in Shanghai city	Mayor of Shanghai city
		World Expo 2010 China bid working office	Members include principals from 8 departments of the Shanghai government and 1 university of Shanghai.	Provisional institutions undertaking the specific work	Deputy director of the Shanghai Foreign Economic and Trade Commission
Preparation and operation	1-3	World Expo 2010 China Organizing Committee	Members include principals from 35 departments under the State Council, Shanghai government and general as the representative of China government	As the representatives of national governments to lead the Expo, the Organizing Committee coordinates law-making and implementation, coordinates, and promotes exhibitors affairs across the country, promotes participation of the implementation by countries and international organizations, resolves and decides major issues of World Expo 2010 China during the preparation and operation stages, determinates total Chinese government representatives.	Vice premier of China
		World Expo 2010 China Executive Committee	Members include 42 departments of Shanghai government and World Expo 2010 China Coordination Bureau	Executive Committee takes charge of carrying out the resolutions and decisions made by the Organizing Committee, and reports related progress and the problems during the preparation process to Organizing Committee, do the work guidance and coordination to relevant institutions in Shanghai.	Secretary of Shanghai city
		World Expo 2010 China Coordination Bureau	Over 30 departments (53 departments in the peak time)	The Coordination Bureau is specifically responsible for the preparation, organization, operation, and management of the Expo, and to assist the Commissioner General of Expo.	Deputy Secretary General of the Shanghai Municipal Government
		Expo Construction Headquarters, Expo park operation headquarters, Expo development and operation companies	NA	Taking in charge of the management of construction project and the operating affairs about Expo.	—
Post development	2-3	World Expo 2010 China site follow-up development leading group	Principles from departments of Shanghai city	On behalf of the Shanghai Municipal Government, the group is responsible for the systematic coordination of the regional development; studies and solves problems on a regular basis; accelerates the development and construction.	Executive vice mayor of Shanghai
		Working office of World Expo 2010 China site follow-up development leading group/Expo Development Group	Expo Development Group	Commissioned by the Shanghai municipal government, the organization has overall responsibility for the implementation of the development and construction of the Expo site as well as Expo heritage management.	Director of the company

\*Note: The level corresponds to the hierarchical structure in Figure 1.

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### Appendix 2: Key organizations and their roles in the World Expo 2010 China.

Name of Organization	Roles and Responsibilities
World Expo 2010 China Bid Committee	The main role is to lead the Expo bid affairs, coordinate the key issues toward World Expo 2010 China between CPC Central Committee, relevant units of State Council, and Shanghai city.
World Expo 2010 China Bid Leading Group	The main role is to lead the Chinese coordination and facilitation work of World Expo 2010 application.
World Expo 2010 China Bid Working Office	The main role is to coordinate and facilitate the detail work of World Expo 2010 application as the daily office of World Expo 2010 China Bid Leading Group.
World Expo 2010 China Organizing Committee	The main role is to coordinate the formulation and implementation of relevant laws, regulations and policies, facilitate exhibitors participant affairs of regional and central authorities, promote the implementation of the Chinese government to invite governments and relevant international organizations to participate; make resolutions and decisions on major issues during the preparation and operation stages of World Expo 2010 China, determine the general representative of Expo.
World Expo 2010 China Executive Committee	The main role is to implement the relevant resolutions and decisions of the organizing committee and report to the organizing committee about the situation on a regular basis, to reflect the problems in the preparation process, to guide and coordinate the work of the relevant agencies of Shanghai city, and to undertake tasks assigned by the Organizing Committee.
World Expo 2010 China Coordination Bureau (abbreviated as World Expo Bureau in this article)	The main role is to implement the daily work for World Expo 2010 China Executive Committee on policy-making and coordination, to implement the daily organization and management of the preparation of World Expo 2010 China, to organize and coordinate activities related to international cooperation and communication of the World Expo 2010 China, and to manage the operation work of World Expo 2010 China.
World Expo 2010 China Construction Headquarters (abbreviated as Expo Construction Headquarters in this article)	The main role is to coordinate the departments of Shanghai city and to support and facilitate the implementation of World Expo 2010 China construction projects.
World Expo 2010 China Construction Headquarters Office (abbreviated as Expo Construction Headquarters Office in this article)	The main role is to implement the unified organization work of World Expo 2010 China construction work, as well as the unified administration work of World Expo 2010 China construction project management.
Expo Land Company	The main role is to raise investment of land development funds except for the government side and to relocate the existing residents and enterprises within the Expo park.
Expo Development Company	The main role is to perform the construction and management of the post-development of Expo park.
World Expo 2010 China Site Post-development Leading Group	The main role is to lead the coordination and facilitation work of the post-development of Expo.

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