

# ORGANIZATIONAL RESPONSES TO INSTITUTIONAL PRESSURES IN INTERNATIONAL INFRASTRUCTURE PROJECTS: A TRANSNATIONAL PIPELINE PROJECT CASE STUDY

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International infrastructure projects that are implemented in highly complex environments and involve collaboration among participants from multiple countries often face a variety of institutional pressures. Organizations involved in the execution of international infrastructure projects enact different strategic responses to institutional pressures and respond in a patterned way. The research explores how organizations respond strategically to institutional pressures in international infrastructure projects and how the interconnectedness between the organization under pressure and other organizations in the project influences the response strategy. A case study centred on a pipeline project in Central Asia that organizations are from China, Turkmenistan and Uzbekistan has been conducted to analyse organizations' practical strategic responses, and 4 vignettes were developed, each describing an event in this pipeline project how an organization responded to institutional pressures. Each vignette was carefully analysed by making event list with two dimensions, the organizations involved and the time line. Different vignettes were compared to find the generic narrative model or typical story. The results indicate that the high degree of interdependence and convergence of interest among the organizations lead other organizations in the project to collaborate with the organization under institutional pressures, and take an active response strategy. Besides, local stakeholder relationships can be utilized in response to institutional pressures and it is important to create relationally embedded relationships with local stakeholders. This research contributes to the knowledge of international project management by drawing upon institutional theory and using a strategic perspective to institutional pressures.

Keywords: institutional pressure, international infrastructure project, response strategy.

## INTRODUCTION

The steadily growing world population promotes the countries of the world to invest in transportation, communications, energy development and other infrastructure projects. Organizations from diverse professional disciplines and different countries participate in the construction of the international infrastructure projects. However, diverse organizations from different countries have different understanding and expectations in regulations, cultural norms, and routine practices, which we refer to collectively as institutions (Scott 2012). Hence, the international projects face unique challenges in project management that they must now transcend diverging expectations of stakeholders to achieve the goal of the project (Mahalingam and Levitt

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2004) ◦ Recently, scholars have gradually recognized the importance of the dynamic interactions between the projects and their institutional contexts.

Previous studies on project management mostly focused on technical and strategic level, and took the institutional environment as given. Some empirical studies show that, in international projects, institutional differences produce institutional transaction costs, mainly cost and time impacts, when project participants are unaware of these differences (Orr and Scott 2008). Besides, empirical studies also demonstrate that local institutions of the host country, particularly political culture and industrial structure, have significant impact on project arrangement (Chi and Nicole Javernick-Will 2011). There has been a call for more research efforts to explore the dynamic interaction between large engineering projects and the institutional environment, especially the responses of the organizations to institutional challenges (Chi and Nicole Javernick-Will 2011; Ruuska *et al.* 2011; Scott 2012).

The work of Greenwood *et al.* (2010) suggests that organizations face complex institutional contexts and they respond in a patterned way. This research, drawing upon the institutional theory, explores organizational responses to institutional pressures in international infrastructure projects. The specific research questions of this paper are (1) how the organizations in international infrastructure projects respond to the institutional pressures; and (2) how the interconnectedness between the organization under pressures and other organizations in the project influences the response strategy.

## LITERATURE REVIEW

### Institutional pressures in international infrastructure projects

An increasing number of studies have stressed the importance of institutional context surrounding complex engineering projects and international engineering projects (Chi and Nicole Javernick-Will 2011; Mahalingam and Levitt 2007; Miller and Lessard 2000; Orr and Scott 2008). Miller and Lessard (2001) analyse the energy, transportation, water conservancy and other infrastructure projects subject to the influence of different types of risks and pressures, and find that in addition to R & D projects, other projects are under a high pressure system, including regulatory, social acceptability, and sovereign pressures. Sovereign pressures mean that a government decides to renegotiate contracts, concessions, or property rights.

Embedded in a web of international and local participants, international infrastructure projects are characterized by complex institutional differences and significant social and political complexity (Orr *et al.* 2011). Mahalingam and Levitt (2007) have identified through case study six kinds of institutional pressures in international projects that staffs are from different countries, including different information gathering techniques, conflicting aesthetic views, differences in building codes, differences in available building materials, differences in contracting practices, and differences in regulations. Chi and Nicole Javernick-Will (2011) focus on the processes through which political culture and the industrial structure of the host country influence project arrangements, and find that the political culture of the host country determines the political goals and legitimate approaches for projects, while the industrial structure restricts possible choices for projects. Although institutional pressures are well documented, few studies have explored practical approaches to respond to these pressures.

Through a survey of the extensive institutional literature, Scott (2012) define institutions broadly as including regulative, normative, and cultural-cognitive

elements that associate activities and provide stability and meaning to social life. Based on the above theory, Javernick-Will and Scott (2010) hold that institutional knowledge is a managerial strategy employed by international firms to alleviate institutional pressures, and they categorize institutional knowledge into three categories and identify fourteen main types of institutional knowledge important for international firms working on international engineering projects. For analytic purpose, it is helpful to adopt the three pillars to analyse the causes of institutional pressures.

### **Organizational responses to institutional demands**

Early institutional theory emphasizes that the institutions are rigid, and institutions do affect organizational behaviour, but organizations are basically only subject to the demands of the institutions (Oliver 1991; Scott 2013). Oliver (1991), drawing on institutional theory and resource-dependence theory, argues that organizations do not simply comply with the demands in the face of institutional pressures, and the choices of organizations are more extensive and varied. Recently, new institutional theory increasingly focuses on organizational initiative in the face of institutional pressures (Orr and Scott 2008; Scott 2013).

Oliver (1991) proposes five types of strategic responses that organizations enact in response to pressures from the institutional environment: acquiesce, compromise, avoid, defy, and manipulate. Orr and Scott (2008) apply the typology of Oliver (1991) in analysing how institutional exceptions are resolved through an examination of 23 cases in which informants are from international engineering projects. They suggest to include the sixth category of “*education*”, a strategy that involves teaching and learning between two organizations. Orr and Levitt (2011) identify three strategies that organizations use to cope with challenges in foreign markets: increasing the supply of local knowledge, decreasing the need for local knowledge, and reducing potential impacts of local knowledge deficit. These concerted responses are common in managing the conflicts of multiple institutional pressures in international projects (Miller and Lessard 2000).

Organizations often respond to institutional influence with organizational changes including the change of decision-making rules and procedures (Scott 2013). Particularly in energy infrastructure projects, the government of the state is a powerful actor and plays an important role in enabling changes in institutional logics (Greenwood *et al.* 2010). The research of (Chi and Chen 2012) shows that in the infrastructure sector, the state can employ some policy instruments to change operation rules and patterns.

### **Interconnectedness and organizational responses**

The typology of Oliver (1991) varies in active agency by the organization from passivity to increasing active resistance: (1) acquiescence implies a full conformity to cultural, normative or regulatory requirements of the authority that are perceived by the organization, or choose a model to imitate; (2) compromise indicates a partial compliance with institutional demands, expanding consultations and negotiations; (3) avoidance means that organizations try to hide themselves and to prevent being subjected to certain parts of the institutional demands; (4) defiance refers to active resistance to institutional pressures, and (5) manipulation suggests the organization purposefully and opportunistically cooperate with the institutional environment, influence and even control institutional environment. The scholars have tested the typology of Oliver (1991) in various areas, such as retail clothing industry, universities, iron and steel (Aaltonen and Sivonen 2009; Clemens and Douglas 2005;

Etherington and Richardson 1994; Goodstein 1994; Lamin and Zaheer 2005; Pedersen and Gwozdz 2013). In general, follow-up studies did not break Oliver's original contribution, but different industries face different kinds of institutional pressures and strategies exist some differences.

Meantime, Oliver (1991) hypothesizes variation in ten dimensions to determine choice of strategies and one of them holds that the lower the degree of interconnectedness in the institutional environment, the greater the likelihood of organizational resistance to institutional pressures. However, through case study, Aaltonen *et al.* (2010) find that stakeholder relationships enhance the project's external adaptation and promote the organization to adopt active manipulation strategy by supporting its anchoring and legitimacy in the institutional environment and by providing crucial local knowledge. Hence, this research will explore how the interconnectedness between the organization and others in the project influence the response strategy.

## **RESEARCH METHODOLOGY**

A case study was conducted to explore how the organization in international infrastructure projects respond to the institutional pressures and how the interconnectedness between the organization and others in the project influences the response strategy. A deep and detailed investigation can be carried out through case study, analysing rich and diverse phenomenon, otherwise information may be omitted with a questionnaire (Eisenhardt 1989; Eisenhardt and Graebner 2007). Besides, a case study is apt for probing into the "how" type research question, which could offer new insights into links among variables (Yin 2003).

### **Case selection**

The research selected the Central Asia-China Gas Pipeline Project (hereafter CAC) as the case for analysis. It is the largest among China's overseas gas projects. With a total length of 1,833 kilometres, it originates at the Turkmenistan-Uzbekistan borderline, passes through the middle of Uzbekistan, across southern of Kazakhstan and into China's Xingjiang at Horgos. A Chinese oil and gas company proposed the project and founded a dedicated project company, referred as ZY in this research, to execute the project. The pipeline was built by ZY in joint ventures with local oil and gas companies in Kazakhstan and Uzbekistan. Construction works of the Uzbek section started on 30 June 2008 and the Kazakh section started on 9 July 2008. Line A, the first of two parallel lines, was completed in 28 months and inaugurated in December 2009.

The project traverses the territories of four countries with highly divergent social, economic, political systems, and cultural traditions. As an international infrastructure project, the success of the project in the face of demanding institutional pressures makes it a valuable case that has some enlightening strategies for us to explore. Moreover, the two authors have closely worked with the project company and get credible first hand data and a deep understanding of project activities reflected in the data.

### **Data collection**

Multiple sources of data were collected by the authors and others in the research group. 65 open-ended interviews were conducted with the Chinese managers in the parent company and the ZY who had participated in the CAC, asking them about the challenges in the project and their responses to these challenges. Among these, 55 interviews were video digitally recorded with consent for subsequent transcription and review (Eisenhardt 1989). The supplementary data include the file directory of a

comprehensive set of formal project documents produced from project initiation to project closeout by project participants, two project documentary books and project files archived in the ZY.

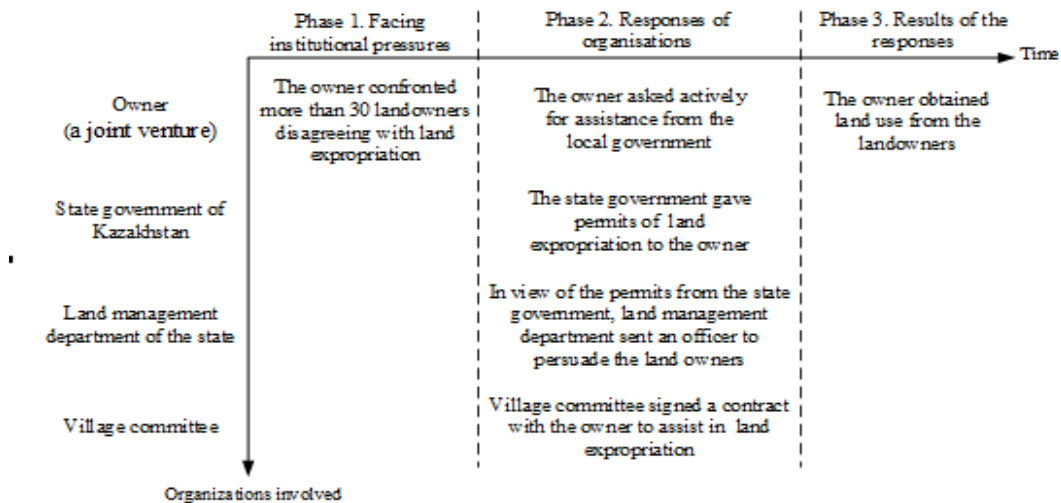
**Data analysis**

Through the careful reading and analysis of the provided data, 4 vignettes with rich details were developed. Each described an event of how an organization responds to institutional pressures in CAC. One principle in data analysis was that all information has appeared at least twice, and no contrary or inconsistent information could be founded. Table 1 summarizes important details of the 4 vignettes analysed in the present study.

*Table 1: Condensed vignette summaries*

No.	Key sequence of events
1	In the process of land acquisition in Kazakhstan, the owner of the project, the joint venture of companies from China and Kazakhstan, faced the pressure to get consensus with the landowners of private land. The owner asked for assistance from the local government, and land management department of that State sent an officer to help the owner going door to door to make the construction of the pipeline understood by the local people and get land use rights.
2	Getting the labour permits for entry to Kazakhstan was the great pressure that contractors from China faced. To solve this problem, the contractors got assistance from the owner, the Chinese investor, and the Chinese government departments. They form a government delegation to negotiate with the labour department of Kazakhstan, and finally received attention from the government of Kazakhstan. Restriction of labour permits was relaxed for Chinese contractors.
3	In the transportation of the pipe, the supplier encountered the pressure from the policy of the customs of Kazakhstan, because of immigration control of vehicles and the unstable policies. The owner, the parent company, and the Chinese government departments collaborated to get support form the customs of Kazakhstan. Finally, the supplier got priority in customs clearance and transportation.
4	In Uzbekistan and Kazakhstan, the technical specification has always been following Russia. Hence, the investors disagreed with Chinese investor in the diameter of the pipe. The Chinese investor invited experts from Russia, credible to investors of Uzbekistan and Kazakhstan, and persuaded them with data and cases.

Every vignette was analysed by making event list that the details of each vignette were listed in a table with two dimensions, the organizations involved and the time line (Miles and Huberman 1994). Figure 1 shows the simplified event list and the detailed information of vignette No. 1. Based on this, different vignettes were compared. The cross-vignette analysis matrix provides a factual basis for the generic narrative model or typical story that emerged from the analysis(Miles and Huberman 1994; Orr and Scott 2008).



*Figure 1: The simplified event list of vignette No. 1*

## FINDINGS AND DISCUSSION

### **The process of organizational responses to institutional pressures**

Analysis of the four vignettes revealed a three-phase process of organizational responses to institutional pressures in international infrastructure projects. Specifically, the process of organizational responses to institutional pressures in Vignettes No. 1 is as follow.

Figure 1 describes the process that the owner dealt with land acquisition in Kazakhstan. Land acquisition was full of difficulties. In the first phase, the organization faced institutional pressures. As a Chinese manager remembered:

*"[translated from Chinese] ..., land privatization in Kazakhstan means that making agreement with every landowner, signing the contract and paying them money. Moreover, the pipeline passes through densely populated areas and there are nearly 2,200 landowners..."*

International projects that are implemented in highly uncertain environments inevitably face great external institutional pressures. Demands presented by external stakeholders, such as the landowners of private land, are typical examples of institutional demands (Aaltonen, 2008). There is a piece of land about 60 meters long in South Hadley which is a problem left from history because this farm land is owned by the former Soviet Union landlords. The landlords of this land are more than 30 and the owner of the project must put together all the landlords in a meeting. It took a week to gather the 30 landowners together, but the landowners refused to get paid according to the standard of the owner. This is the institutional pressure the owner confronted in land acquisition.

In the second phase, the organization under pressure responded to the challenge through the collaboration with other organizations in the CAC, such as the state government of Kazakhstan, the land management department of the state and the village committee. As a Chinese manager remembered:

*"[translated from Chinese] ..., facing the demand of 30 landowners, the owner of the project did not act recklessly. They walked away from the meeting with the landowners, and sought to assistance from the local government..."*

The state government gave permits of land expropriation to the owner. In view of the permits from the local government, land management department sent an officer to persuade the land owners. At last, Village committee signed a contract with the owner to assist in land expropriation. In the last phase, the owner obtained land use from the landowners

### **The impact of interdependence on response strategy**

In the vignettes No. 1 to No. 3, the organizations under institutional pressures are interdependent with other organizations. For example, if the contractors fail to get enough labour permits and face labour shortage, the owner will suffer great economic and social losses. When the interests of other organizations are threatened, they will probably take part in active response to the institutional pressures. As the informant of vignette No. 4 recalled:

*"[translated from Chinese] ..., contractors encountered various difficulties, especially under the time and heavy task demands in the CAC. Though the owner has no obligation to provide assistance to the contractors according to the contract, ZY held the belief that helping contractors equalled to helping the owner itself. ZY, as an*

*investor of the CAC, consulted with the local governments of Uzbekistan and Kazakhstan many times. Hence, ZY helped contractors to deal with labour contractor licenses, construction permission, and other Mechanical permission..."*

Contrary to the hypothesis of Oliver (1991) that high degree of interconnectedness leads to greater possibility of organizational acquiescence to institutional pressures, the empirical data shows that the high degree of interdependence and convergence of interest among the organizations leads other organizations in the project to collaborate with the organization under institutional pressures, and hence take an active response strategy.

### **The impact of local stakeholder relationships on response strategy**

It is clear in Figure 1 that the Chinese investor, as an entrant to the market of Kazakhstan, is pretty hard to get understanding from the local people. Local stakeholder relationships can be utilized in the response to institutional pressures. As the informant of vignette No. 1 recalled:

*"[translated from Chinese] ..., the delegates of the owner took the document, which had been approved by the governor of the state, to the land management department of the state. The document approved by the governor of the state equalled to an out of order. According to the document, land acquisition in the CAC must be supported. Thus, the land management department sent a leader to find the village head and persuaded the landowners door to door..."*

The Chinese investor gained knowledge actively and persistently on local practice, norm and rules. They tried to create communication channels to influence local stakeholders. As the informant of vignette No. 2 recalled:

*"[translated from Chinese] ..., a delegate of the Chinese investor, in support of Chinese Embassy in Kazakhstan, consulted with the relevant departments of the government in Kazakhstan. The delegate repeated emphasised to the local government about the importance of the CAC and told them that the pipeline construction would bring benefits to the local people which was a win-win cooperation relationship. Eventually, the issue of getting the labour permits for entry to Kazakhstan got high-level attention and support from the local government..."*

Local actors, such as local government, may be used as a source of local knowledge and may be engaged directly in managing institutional pressures (Aaltonen *et al.* 2010). Hence, it is important to create relationally embedded relationships with local stakeholders, which obviously requires great effort.

### **The competency of other organizations involved in the response strategy**

In the vignette No. 4, different from other vignettes, the experts from Russia are not initially connected with organizations in the projects, but they are essential to convince the investors in Uzbekistan and Kazakhstan because of the special history in these countries. As the informant of vignette No. 4 recalled:

*"[translated from Chinese] ..., as the CIS member states, Kazakhstan and Uzbekistan has nearly 50 years of practical experience in the construction and operation of natural gas pipeline. They always had a technical superiority over the Chinese engineers who have a short history of the construction and operation of natural gas pipeline. Hence, the investors of Kazakhstan and Uzbekistan disagreed with Chinese investor in the diameter of the pipe and the two sides were very hard to communicate...ZY knew that experts from Russia had great influence to the opinion of*

*the investors of Kazakhstan and Uzbekistan. If it was possible to convince the experts of Russia from the technical point, it would be effective to coordinate with investors from Kazakhstan and Uzbekistan..."*

It indicates that the key to adopt an active response strategy to institutional pressures is to build relationship with organizations who are competent. To achieve that, a deep understanding of local history and culture is essential.

## CONCLUSIONS

This research draws on the institutional theory to explore the patterned response of organizations to institutional pressures in international infrastructure projects. The results show that the high degree of interdependence and convergence of interest among the organizations lead the other organizations in the project to collaborate with the organization under institutional pressures, and take an active response strategy. Besides, local stakeholder relationships can be utilized in the response to institutional pressures and it is important to create relationally embedded relationships with local stakeholders, such as local government, which obviously requires great effort.

The limitation of the research approach is that a representative case was selected for analysis, lacking comparison with other international projects, and resulting in that the applicability of the conclusion in this research is still need to be explored. However, different vignettes were analysed under the same project background information, which contributes to that vignettes are comparable. In the future research, a comparative study with other pipeline projects at home and abroad can be conducted, which will help test the conclusions obtained in this research. In addition, future research can also explore the mechanisms of collective actions in coping with multiple institutional demands, and strategies can be employed to manage different levels of institutional demands.

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