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Qualitative Methods

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Written Research Article

Abstract
Evaluation of a Current Research Article
Research Proposal

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Part 1. Abstract

Embracing Complexity:

Relational Risks and Opportunities in International Meg-Projects Developments

To succeed, international mega-projects need to manage complex layers of institutional and individual stakeholder relationships, which are inherently necessary to deliver construction projects. Relational risk has been identified as a core influence on the success or failure of projects. Institutional theory provides a window into the complimentary and the conflicting motivations and responses which evolve from multi-cultural, multi-disciplinary international mega projects. This is a case study analysis of the Lyric Theatre Complex in West Kowloon Culture District, Hong Kong. One of the largest civic projects in the world, currently under construction. The development will span a 26 year life span when completed and have employed thousands of local and international specialists. Current studies of relational risk management address the inter-organizational relations of consultants and contractors (Lehtiranta 2011), overlooking the significant involvement and impact that a broader stakeholder group of non-invested parties has on the direction of a project. This study will broaden the study of institutional stakeholder influence on mega project development.

Projects which have been initiated by governments for cultural, educational, healthcare or other social benefits, are prone to the involvement of larger stakeholder groups. International projects are characterized by complex stakeholder involvement, this study looks at projects in which stakeholder groups, include: political appointees in central government, local bureaucratic authorities, institutional investors, property developers, surrounding communities, specialist consultants, contractors and end users. Defining legitimate stakeholders is an important step in identifying spheres of influence, Jergeas et al (2000) emphasize the importance of communication and goal identification in stakeholder management. Defining success for a

diverse stakeholder group is central to this study and, the traditional construction success metrics of time, cost and quality, do not capture the diversity and complexity of interests represented by the complete stakeholder group which includes political, social and environmental interests.

As a consequence of the international nature of mega-projects, many of the roles either originate from, or are duplicated across, geographic boundaries. Projects are therefore awash with a diversity of technical and professional codes of practice, cultural norms, political motivations and languages. Current theoretical analysis does not adequately address the specificity of relational risk which is generated by the unique layers of complexity typical of international mega-projects in Hong Kong. Utilizing the case study approach this study will utilize interviews with multiple stakeholders and the consideration of relevant theoretical bases to evaluate the relevance of institutional theories of complexity in mega project development. We also look at the impact that leadership has on the achievement of diverse critical success factors of the project stakeholders. This research intends to provide a better understanding of the complexity of institutional and personal relational risks in international mega-projects and provide a means by which relational risks can be mediated and possibly exploited as an opportunity.

Case Study offers an opportunity to build on the narrative disclosures, documentary archives and on site observations through an iterative coding process which facilitates the accretive development of richer understanding of the forces which influence these unique projects.

Interviews will be converted to text and analyzed using content analytical methods, and a repetitive coding technique. It is expected that a reiterative coding technique will refine the exploration of the textual data and produce a richer conceptual picture upon which to draw.

Part 2. Evaluation of a Current Research Article

2.1 Citation: Lehtiranta, L. 2011. Relational risk management in construction projects: Modeling the complexity. *Leadership and Management in Engineering* 11(2).
doi: 10.1061/(ASCE)LM.1943-5630.0000114.

2.2 Research Intent

Construction is complex, arguably the most complex industry (Baccarini, 1996). Liisa Lehtiranta's (2011) paper focuses on uncertainty about collaborative working performance, and relational risk management in multi-organizational projects. Relational Risk Management in Construction Projects: Modeling the Complexity (Lehtiranta 2011) is an exploration of the role that inter-company relationships play in the increasingly complex delivery of international construction projects. In this well-informed study, Lehtiranta presents a grounded theory analysis for the proposal of a conceptual model for relational risk in 'collaborative-intense construction management'. Lehtiranta introduces the concept of an holonic framework upon which the reader can conceptualize the multi-layered construction management process, and through which the expert interviews of the study may be 'infused' with complexity thinking. This is a refreshing, and valuable, perspective from which to view the complexity of modern international construction, a well-structured departure from the core technical task approach of the project which has predominated in the discussion of risk in construction management.

2.3 Research Design and Theoretical Basis

The sub-title of the paper is 'Modeling the Complexity', is a reference to complexity in construction which resonated with this writer's experience and was the attraction to the paper. In construction, complexity is seen as a risk. It might increase the cost or the timeline of the project. Lehtiranta (2011) regards risk as both the potential for negative and for positive outcomes, in the manner of Lifson and Scheifer (1982), who describe this approach as a two-way risk approach. This opens the door to an exciting area of study in relational risk.

Lehtiranta (2011) explains the appropriateness of applying grounded theory in circumstances in which there is insufficient literature or research material available on the topic of study, which, in this case, is the ‘emerging relationship paradigm.’ The research she cites therefore focuses on relevant theories within project management dealing with the analysis and treatment of interview data. The work of Lousberg and Wamelink (2009) is cited as providing a “context dependent interpretation of what practitioners say about practice.” The pivotal work of Corbin and Stauss (2008), is frequently cited as facilitating the tying together of empirical data with the emergent theory base through the iterative process of analysis. Traditional studies of risks in the construction industry approach the success, or failure, of a project from the perspective of what is known as the Iron Triangle, that is, the time, cost and quality constraints which have been agreed by the owner/investor and the contractor. The iron triangle persisted (and in many quarters still persists) as the only metric of performance until the early 21st century and the awareness that construction not only affects the owner and the builder, it has considerable impact on the environment and many stakeholders who have no direct commercial interest in the development. These stakeholders may include government authorities, political figures, end users and local communities. Lehtiranta addresses the lack of research material on the “social and political interaction”. The sources which are available, such as the network-based approach work of Pryke (2005), and Chinowsky et al (2010), are not applied to risk management and therefore of little relevance. Stakeholder relationships are an important aspect in the development of an accurate picture of complexity in construction, in addition to the technical complexities of design and function. Despite the brief reference to the importance of social and political interaction the theme is not continued in the data collection and analysis, which is disappointing.

2.4 Sampling and Data Collection

Lehtiranta bases her research on ‘interviews, observation and theory’. Nine interviews with construction professionals constitute the initial stage of data collection. The author details the memoing process she applied to the interview notation, transforming the textual data to conceptual data to iteratively move towards sections and larger themes which described the input of the participants. In the manner of grounded theory research, the process is iterative and reflexive.

Lehtiranta describes the analysis of the first three interviews as having “accomplished very little, beyond apparent general answers.” She goes on to describe the ‘emerging understanding’ shaping the ongoing data gathering and sampling. This is an authentic revelation of the researcher’s own discovery and reflection steering the course of the research. It is a useful description of the grounded theory process. In response to the interview process Lehtiranta (2011) extends the study to include on site observation to establish support or contradiction of the data gathered through interviews. The sample group is narrow in its representation of professions on a construction project. Lehtiranta (2011) justifies the choice of the original 3 construction managers as being ‘purposeful sampling’ according to a definition by Locke (2001) and that the status of the construction manager as responsible for enabling collaboration means they are likely to ‘portray the widest view’. Being responsible for the collaboration of project team contributions may also have a compromising effect on the construction managers comments. Lehtiranta later broadens the representation of professional disciplines on the projects. This is a good example of the reflexive technique that she employs, learning from earlier experiences to inform later stages of the research. It appears to provide a richer perspective for cross-checking the validity or consistency of responses.

Lehtiranta (2011) found that the on-site observations reinforced and enhanced the views of the interviewed construction managers, that construction projects are not so much the organized management of a collaborative team as they are dynamic and prone to changing technical requirements which challenge both the contractual and non-contractual relations on the project.

2.5 Procedural Rigour

The application of complexity introduces a fluid response to a dynamic scenario. It is quite antithetical to traditional project management processes which rely on planning and control and instead invites informality and evolutionary. The study is limited to two construction projects which are not described, which is notable in that we are not able to assess the level of complexity of the projects. We are provided with a little information through the description of changes to manholes given by one participant. Although the point is well made, the example given, the repositioning of a manhole, is possibly too banal to contribute to the sense that these are actually complex projects.

2.6 Significance

Relational risk management is an area of construction which has not been well studied and yet it is an area which is significant because of the increasingly global nature of multi-disciplinary project delivery which requires the contributions of larger multi-national, multi-cultural teams of specialist to deliver (Lehtiranta, 2011). Lehtiranta makes the claim that there is insufficient theoretical explication of the fundamental nature and processes of relational risk to capture the full potential of relational contracting and stakeholder management approaches, she is therefore compelled to base her study in a grounded theory approach to develop a conceptual model of relational risk management, seen through the lens of various theoretical bases, and the voices of professional practitioners in the field. This is the gap in current research and theory which

Lehtiranta has identified and makes a very strong argument for the importance and opportunity that exists in relational risk management.

Central to the tenets presented by Lehtiranta (2011) is the concept of complexity thinking as an appropriate lens through which to explore complexity. Complexity thinking deals with several conceptual themes presented by van Eijnatten (2004): self-organization, discontinuous development, uncertainty and unpredictability. Complexity thinking has at its core integrative approaches, an acceptance of the dynamic nature of projects and flexibility to observe multi-layered interactions simultaneously (van Eijnatten 2004), whereas traditional approaches to project complexity tend to be based on deterministic approaches which attempt to dissect complexity to enable management and control.

The capacity for complexity thinking to address multi-layered interactions simultaneously is captured in the particularly delicious concept of *holarchies* or *holons*, invented by Koestler (1967). Holons represent both the part and the whole, they are both dependent and autonomous. The holonic structure is an attractive model of the complex relational interactions that exist in complex construction. It is a connection of the individual to the sub-unit and the sub-unit to the project organization and simultaneously describing the normative professional and disciplinary behaviour which infuses relational interactions on a project. Lehtiranta introduces the concept and the possible application to the study of complexity, but again, fails to fully explore the concept in her own research.

2.7 Conclusion

In this otherwise elegant composition Lehtiranta (2011) has brought together a mille-feuille layered structure to describe the complexity of relational inter-activity, observed through the double ended lens of both the macro-structure and the micro-relational actions which opens

doors to further, more detailed analysis of the concept of complexity in construction and project management.

Part 3: Research Proposal

International Mega-Project Development:

Institutional and Leadership Theory in Complex Projects

3.1 Introduction

This is a study of international mega-projects focused on the delivery of the Lyric Theatre development in the West Kowloon Cultural District, one the largest cultural developments in the world currently under construction.

3.2 Background of the Lyric Theatre Project, West Kowloon Cultural District

The Lyric Theatre development is a \$5 billion HKD performing arts project, composed of three performance halls, located in the development known as West Kowloon Cultural District, one of the largest civic projects in the world. It is an appropriate site for study as it includes an extensive international team of consultants and contractors from both Hong Kong, Europe Australia and Asia. As a publicly sponsored project West Kowloon Cultural District is significant for its diverse stakeholder involvement including public lobby groups, commercial interests the Governments of Hong Kong and China and multiple professional consultancies and contractors. The initial concept for a cultural development was presented to the Legislative Committee in 1998. The Lyric Theatre project will be completed in 2024, a 26 year project period through which personnel and institutions have naturally come and gone, providing various input at various stages of the project. The duration of the project overlaps changes in the government, the global financial crises, the awareness of global warming trends and the rising influence of mainland China on Hong Kong's administration, creating considerable uncertainty around the long-term viability of the project. This project meets the definition of a super complex mega-project in every sense, capital expenditure, duration, the extensive and changing stakeholder involvement and the dependence on joint ventures and partnerships to

deliver specialist design and construction. (Engwall 2003) claims that studies of isolated projects undertaken by a single company fail to represent the inherent complexity projects (Engwall 2003) which involve multiple institutional parties interacting to deliver a project, and a diverse, non-business, group of stakeholders whose interests may be conflicting, but who wield significant power to alter the course of a project. The study of complex international projects has become a relatively recent focus of attention. Engwall (2003) speaks to the need to consider the historical and organizational context of a project, stating that no project is an island, all projects are influenced by previous institutional experience, political climate, and the norms and cultural of the institutional stakeholders. To that end, this study contributes to the development of an appropriate theory of institutional influence in the delivery of international mega-projects. Morris and Geraldi (2011), referencing early work of Parsons (1951), describe the 'inner' and 'outer' levels of rational activity in the management of projects. The inner levels are the technical and strategic aspects. Traditional project management responsibilities of planning and control, and the broader responsibilities of stakeholder management, capital raising activities, procurement of contributing parties, defining the objectives of the project and the respective responsibilities of the participants. These are the actions of working 'in' the project. A key focus of this study are the actions of working 'on' the project. The outer, institutional level which is concerned with aspects of delivering successfully in a consistent and ongoing manner which requires the transfer of knowledge, the development of corporate culture and the importance of leadership, as opposed to management of projects. The study of the institutional context and the impact of leadership form the core of this proposal.

Projects are an integral aspect of social development. Projects exist on multiple levels across all sectors of society and have been critical in the development of culture and society.

Increasingly, projects have become more complex and exposed to greater risk, as they have become both technically more sophisticated in terms of design, construction, and functional requirements, and organizationally more complex as the increased technological challenges demand bigger networks of specialists to design build and operate the buildings (Qazi et al. 2016). Globalization and the rapid growth in wealth of developing countries has increased the demand for sophisticated building projects internationally (Qiu et al. 2019). Hospitals, airports, infrastructure, education, and research facilities for example, are technically complex building types for very specific functions. Flyvbjerg (2014) describes megaprojects as a special class of development, “large-scale, complex ventures that typically cost US\$1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational, and impact millions of people.” Furthermore, mega-projects are driven by technological, political, economic and aesthetic ‘sublimes’ which influence the institutional decision-making process which sustain them (Flyvbjerg 2014).

In addition to the technical complexity of international projects, Müller and Turner (2007) address the organizational complexity created by the temporary collaboration of institutional actors, necessary to deliver projects. Multi-disciplinary, multi-cultural, multi-lingual collaborations of professional industry institutions characterize the amorphous organizations at the core of an international megaproject.

This study was motivated by the writer’s experience, over 9 years, in the development of the Juilliard School of Music in Tianjin, China, providing project management, and technical advisory services. Executive level interest in the project created unique complexities. First Lady of China, Peng Li Yuan, was directly involved in early meetings with the Juilliard School, on behalf of the Government of China. The First Lady’s influence, and by inference, the President’s influence, informed decisions made on scheduling the opening of the school, which placed significant pressure on the project delivery team.

3.3 Theoretical Background

The history of academic study of project management dates from the mid twentieth century when the management of construction projects was separated from the work of the architect or the design and build contractor as the complexity and cost of construction increased and demanded a pragmatic system. Early studies aimed at systematizing and standardizing the process of project management focused on the control of measurable outcomes, time cost and quality, through the creation of standard tools and processes such as work breakdown, program review and critical path method (Ahola, 2009). Since the inception of project management, the planning and scheduling aspects of construction which have dominated the profession. The goal has been to create repeatable tools that any practitioner could apply under any circumstances (Sears, Sears and Clough 2008), thus reducing the reliance on the leader and the team. Studies on the 'efficiency' of projects as defined within the constraints of time, cost and quality have predominated. (Jackson 2002; Yaghootkar and Gil 2012)

As projects have become larger, with a bigger social impact, timelines have extended over several years and the awareness of the impact of construction on the environment has increased, the focus has expanded to encompass the broader stakeholder group (Pinto et al. 1987). The concept of the project as a temporary organization, composed of multi-disciplinary institutions with diverse stakeholder engagement as described by Stretton (2018) has expanded the study of project management from the iron-triangle of measurable factors. Biesenthal et al. (2018) propose that mega-projects should be seen as sites of conflicting institutional logics in which the organizing principles are shaped by the diversity of experiences and histories of the institutions which have been brought together to deliver the project. It is at the institutional level that discrete values and norms are established which may be reflective of different national cultures or broader normative behaviour of professional institutions.

3.3.1 Institutional Theory: How institutions adapt to and interact within a given environment is the topic of institutional theory (Biesenthal et al. 2018) defined by normative, regulatory and cognitive boundaries within which conflicts and resolutions are played out (Palthe 2014). Within the constructed environment of an international mega-project constraints of time, finance, politics and design, produce the conditions for conflict. Within such an environment companies are not only struggling to perform tasks to the terms of their contracts, they are struggling to survive, to evolve their behaviour and corporate culture as a means of institutional survival. (Biesenthal et al. 2018) has highlighted the complexity of polyarchic, multi-organizational projects which by their nature demand the constant scrutiny of government authorities and financial investors. Mega-projects generally require the contributions of international consortiums, this adds additional cultural and intra-disciplinary professional normative pressure to what is already an intense technical and strategic environment. It is an environment which is expected to be conflictual and aggressive. In Hong Kong construction dispute litigation has been identified as one of the primary causes of project failure (Chau 2007).

There is a significant need for a better understanding of the institutional stresses which are created on mega-project development. Research by Qiu et al. (2019) and others have looked at the impact of institutional complexity on the cross border rail projects, there is limited institutional research on the cultural projects of Hong Kong which this study is focused upon.

A key feature of institutional theory is the notion of organizational learning. This has both internal and external implications for organizations undertaking long duration projects which may span over two decades. How is knowledge retained and managed within the project organization as individuals come and go from the project? How is knowledge utilized by the larger organization such that the experience of the project can be applied to enhance sustainability outside of the project? This is an area which large organizations with multi-

divisional structures with independent profit and loss accountability continue to struggle with (Morris and Gernaldi 2011).

3.3.2 Complexity Theory: Complexity Theory posits that all systems are in a continual state of evolution, which are not predictable, and are prone to patterns of fluctuation (Psychogios and Garev, 2012). Complexity Theory regards organizations as complex adaptive systems, of which construction projects are a class of temporary organization in which numerous actors are engaged in ‘non-linear, unpredictable and constantly emergent behaviour’ (Baruti, 2015). The study of complexity brings a vital perspective to the dynamic interactions which are fundamental to leadership in a complex context (Uhl Bien et al 2007). Complexity Leadership Theory, as presented by Uhl Bien et al (2007), differentiates between leadership and leaders. Leadership being an emergent interactive dynamic which facilitates necessarily adaptive outcomes, and leaders as the individuals who act in ways that influence this the interactions and the outcomes.

Complexity demands higher levels of leadership. Complexity Leadership Theory (Uhl Bien et al 2007) acknowledges that leadership is more than the interaction of one or more individuals, it is the interplay of multiple dynamic forces. The ability to identify and interpret complex data and respond in a contextually appropriate manner. A contextually appropriate manner may mean not responding with instinctive impulse, but through the balanced consideration of the data and resources available, learning quickly, and responding at the pace required of the time. Pye (2005) refers to the adaptive leader’s ability to respond flexibly and to utilize the resources, as ‘sensemaking’ (Pye, 2005). Leaders who are flexible in their ability to evaluate and assess a situation know when to rely on the input of others and when they can trust their own judgement. The strong emphasis on organizational commitment of authentic leadership make the construct an attractive proposition for the study of leadership of complex projects.

Previous studies have been performed in other sectors such as banking and IT (Gardner et al. 2005; Luthans et al. 2005; Walumbwa et al. 2008) but not in the context of international project management. This study will provide additional support to broaden the scope.

Baccarini (1996) states that the construction industry is one of the most complex industries

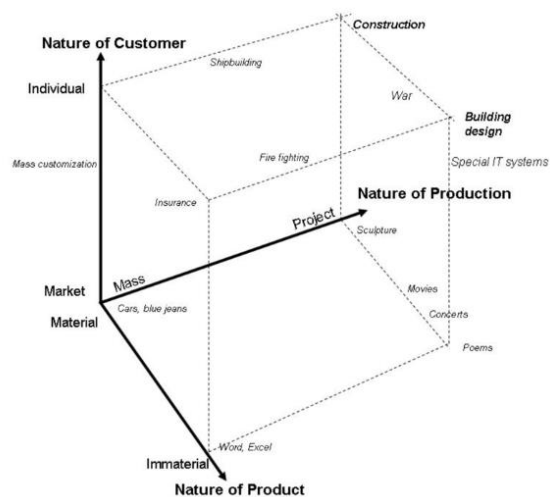


Figure 1 Dimensions of Complexity Baccarini (1996)

Complexity Theory is concerned with the “behaviour over time, of certain types of systems” (Rosenhead et al. 2019)

The large networks of participants required for mega-projects are described as temporary project organizations (Baccarini, 1996) They operate in both vertically and horizontally differentiated dimensions, in which the greater

the differentiation, the higher degree of complexity. Vertical differentiation defines the depth of hierarchical layers and is often determined by the size of the project. Horizontal complexity is the diversity and number of organizational units and task structure, which is defined by the number of specialists required to undertake the project. The role of the project manager is management and integration of communication between, and coordination of, the temporary project organization. Project networks have featured as a focus of studies in management of collaboration and inter-organizational relations in complex project structures (Windeler and Sydow 2001; Artto et al. 2008). Such complex structures naturally re-define the measures of success expected by such a diverse organization of stakeholders.

Holistic definitions of success have been provided which expand on the traditional time cost and quality.

Muller, Geraldi and Turner (2011) challenged the lack of leader character attributes in the definitions of project success. Their framework focuses on the intellectual, emotional and managerial qualities of leadership. They suggest that projects with high levels of integration complexity should be resourced by leaders with high levels of emotional and managerial qualities (Muller, Geraldi, Turner 2012).

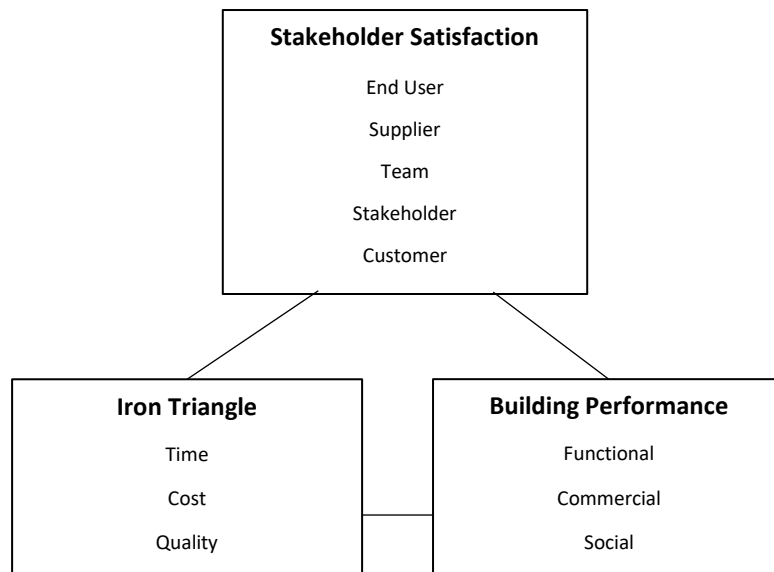


Figure 2 Stakeholder Defined of Success

Various studies have recognized that complex projects operate as temporary business systems of highly sophisticated actors (Windeler and Sydow 2001; Ahola 2009), interacting in a complex and non-linear manner to deliver multiple outputs. The project system in construction is as subject to the influence of leadership competency as any business. Because the traditional metrics of project success have been so narrowly limited, the performance of the leader has been limited to the completion of only three tasks. The scale and scope of mega-projects and the extensive stakeholder engagement expand the remit of the project leader and the definitions of success.

Luthans and Avolio (2003) identified the need for a type of leadership that was based in values, integrity, self-reflection, and balanced decision making; authentic leadership. Luthans and Avolio (2003) describe authentic leadership as a process that has its foundations in “positive psychological capacities and highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviours on the part of leaders and associates.” In essence it is leadership which provides a positive model to develop authentic followers.

3.4 Research Methodology

3.4.1 Research Questions

1. What factors of project outcome result from institutional complexity?
2. How does leadership mediate the impact of institutional complexity on project success?
3. How does institutional complexity affect the behavior of participants on mega-projects?

3.4.2 Relevance of the Case Study Model

This is a case study model undertaken on the West Kowloon Cultural Centre, Lyric Theatre development which is currently under construction in Hong Kong. The case study model is appropriate, in this case, because it provides a look inside the bounded system (Creswell, 2007) of a multi-year construction project. The case study provides a platform for developing a rich set of data directly from the various participants of the project, in the context of the project site. This is important as the study is looking at the complexity of international construction projects, in part, through the lens of institutional factors, as defined by Morris and Geraldi (2011) of project organizations which are formed for the period of a project. Case studies also offer a rich source of observational study, an opportunity to verify and possibly re-interpret the data sourced from participant's self-disclosure. A construction site is a pulsating milieu of synchronized and isolated activities being performed by hundreds, possibly thousands of workers. It is rich in the artifacts of design and construction. These include: drawings, diagrams, calculations, and volumes of meeting notes, site instructions and site records. Logistically, The Lyric Theatre project is an attractive case study as some of the key consultant institutions are known to this writer which will provide access to individuals and information on the site. Personal connections will possibly provide a richer source of disclosure on the part of the participants and provide a degree of 'within-site' exposure to the operations of the project

organization to observe the actions of individuals and teams responding to the stresses of delivering a complex public project

3.4.3 Participant Selection

The study will employ a chain referential or snowball sampling method. Senior Board and Executive staff members of the Lyric Theatre and West Kowloon projects, will be given a presentation of the study objectives, methods and benefits to the profession. Senior members will be asked to nominate appropriate candidates for the study. Using the chain referential sampling methodology, nominees will also be asked to refer candidates and so on. It is anticipated that up to 30 participants will be provided using this method.

3.4.4 Data Collection

The Lyric Theatre Project technically qualifies as a mega-project, over \$500 million USD in construction value and a 10 year project life cycle. It is a major undertaking, there will be very few individual staff members who start the project and see it through to completion, and skills required to complete certain tasks are seldom required for the duration of the project. In the nature of mega-projects running over long time periods, in this case over 18 years, the organizations which form together to undertake the work are in a constant state of change (Ahola 2009). As this project is now well into construction and is scheduled to be completed in 2025, there is only limited opportunity to explore the impact of time and continual change on institutional complexity, except through archival records and the statements of participants.

Data Collection

Sources	Participants
<i>Interviews</i>	
Senior Project Managers	Faithful and Gould/TBH
Lead Architect	UNStudio(Netherlands) with AD+RG (HK)
Civil Structural and Geotech Engineer	AECOM
MEP, Environmental Engineers	WSP
Theatre Designer	Space Factory/Carr + Angier
Acoustic Engineers	Marshall Day
Lighting Designer	ag Licht
Façade Designer	inHabit
Landscape Architect	LWK
Building Information Modeling	isBIM
Independent Checking Engineer	WTChan
Quantity Surveyor	WTP
Traffic Engineers	MVA
Main Contractor	Gammon Construction
Specialist sub-contractors	various
End User	WK Performing Arts Division
Government Depts	Architecture, Traffic, Water, Drainage, Fire
Sponsors	various
<i>Documentation Artifacts</i>	
Briefing Documents	
Project Schedule	
Organization Structure	
Subject Matter Reports	
Media Reports	
<i>Site Observations</i>	
Design Reviews	
Subject Matter Specialisms	
Interaction with Government Dept	
Interaction with Sponsor/Donors	
Interaction between Consultants	

3.4.5 Ethical Procedures

Research Phase	Ethical Issues	Actions
Project Set up	• Approval of UWTSD • West Kowloon Cultural District Stakeholder Approvals • Professional Standards and legal constraints • Conflict with existing studies	• UWTSD Board approval • Review HK professional standards • Review and negotiate with any existing researchers working on the Lyric Theatre Project
Data Collection	• Consent • Integrity • Respect • Professionalism	• Obtain written consent from all participants • Use responses responsibly and honestly • Respond to participant contributions by offering a copy of the finished report • Use the data collected as is without correction or edit.
Data Analysis	• Bias towards participants • Positive result disclosure • Participant privacy	• Maintain balance • Report all viewpoints obtained • Anonymize participants
Reporting	• Data integrity • Plagiarism • Protection of sources • Clarity in communication	• Do not use other research falsely • Attribute and cite other work • Provide composite narratives to protect identities
Publishing	• Data sharing • Conflict of Interest • Duplication	• Share report with participants and stakeholders and researchers • Respect the publication • Disclosure of funding and profit

3.4.6 Semi-structured Interviews

As the project is now well into construction, inter-party relationships, which form an important focus of this study, should be well established between the consultant and contractor teams, the semi-structured interview format will provide depth in the understanding of how or whether the teams structure, coordinate and cooperate together. On the other hand, relationships between the contractors and the end-user operators, (performing arts division, food and beverage providers, retailers and facilities management), will be developing as they prepare for the transition from construction to operational conditions. We will therefore expect to see the early signs of relationship establishment which will provide an alternative perspective.

Leadership has been identified as a determining factor in the performance of project management teams (Damayanti et al. 2021). There is a special focus, however, in the management of complex projects that has been classified by Damayanti et al (2021), Li, Han et al (2019) as ‘emotional management’ and a ‘creative humanist approach’. This study will be drawing on research into authentic leadership which has been undertaken by Luthans et al. (2005) which applies these classifications. It has been argued by Hunt 1999 , Uhl Bien et al 2007, Mackenzie 2006, that leadership theories that have not addressed the impact of complexity as a defined measurable in leadership are failing to address the inherent ‘nature’ of leadership and instead are concerning themselves only with style and method of leaders. This study aims to contribute to the growing body of work which differentiates between leaders and leadership, in-order to establish a definition of leadership in complexity which characterizes the dynamic interactions which leaders are able to affect.

Studies in authentic leadership developed by Avolio, Walumbwa et al (2005) serve as a guideline for this study. Studies in authentic leadership have been applied across a diverse range of industries, however there has been little application of authentic leadership in the construction industry and no records of its application in Hong Kong. This study will provide a multi-faceted study of the Leader, from the self-disclosure of the leader, the opinions of followers and of management, providing a montage of data on the leader’s performance.

In analyzing the complexity factor of the project this study relies on the work of Geraldi and Adlbrecht (2007) who have taken an holistic stance in looking at the influences of uncertainty, multi-culturality, relational dynamics and so on. Geraldi and Adlbrecht’s (2007) studies revealed that the most significant triggers of project complexity were, people, multi-disciplinarity, internationality and clients. Interview questions will be designed to elicit rich responses on these factors and their impact on the delivery of the project and the approach of the institutions with a stakeholder interest in the project.

As project leaders have the capacity to shape the interplay between institutional parties, the interview process will commence with senior leadership from the Government (client), sponsors and the project delivery teams. These three roles are representative of Morris and Geraldi's (2011) three project levels: technical (standard project management services of planning and control), strategic (stakeholder management, procurement strategies, funding strategies, protection of the technical core of the project) and the institutional level (institutional longevity, knowledge transfer, corporate culture)

Interviews will also provide a potentially rich source of data on how institutional principles are applied on both a macro or organizational level and on a micro or individual level. Rationalist and social institutional theories vary in characterization of the actions of the individual (Biesenthal et al. 2018). This study will endeavor to provide further support to one or other of these dialectics.

Interview questions will take the form of open-ended invitations to disclose details of the institutional and organizational circumstances of the project, for example:

Institutional Question Examples

How has the West Kowloon Project affected the way other projects are delivered?

How is knowledge transferred within the firm and between firms?

What influence have sponsors, both government and private, had on the delivery of the project?

How have you managed the joint-venture partnerships relations on the project?

What challenges have you faced as a JV partnership?

The project duration spans government administration transitions, how have these changes influenced the delivery of the project?

Leadership Question Examples

What impact has the project leadership had in facilitating the delivery of the project?

How has the project leader developed trust between the institutions on the project?

What can you tell me about the project leader's approach to resolving conflict?

3.4.7 Documentary Data

Public projects generate volumes of documentary data as an auditable trail of proposals, approvals, reports and budgets. Additionally, the design and construction processes generate considerable documentary data in the form of minutes of meetings, site diaries, public submissions and approvals and instructions. Public records dating back to 2004 indicate early government feasibility analysis and strategic planning of messaging to the public about the project, which have been appended to this proposal. There are also records of media reports issued about the project providing a valuable site of perspectives on the environmental, social and political impact of this mega-project.

3.4.8 On Site Observations

To validate the interview and documentary archives we will seek to undertake regular onsite observations. These will provide the opportunity to witness first-hand how the institutions collaborate, solve problems, address errors and generally interact as a holistic organization composed of independent parts and individuals. Site Observations would include face to face or on-line presentations to government and sponsors and interactions between stakeholders.

3.4.9 Data Analysis

Data will be coded using the MaxQDA software programme with which the researcher is familiar from previous master's studies. The process will be iterative as we filter and recode towards establishing the fundamental elements, or logics (Qiu et al. 2019) pertaining to each

institution. The objective of the data analysis is to achieve a triangulated set of data which is validated through multiple sources onsite, documentary and interview, and across two levels of micro and macro behaviour, through which we can confidently identify support for, or contradiction of, institutional and leadership theories applied to mega-project developments.

3.4.10 Implications for Research

Studies of the construction industry predominate with research into efficiency, productivity and the pursuit of better time cost and quality management (Pinto et al. 1987; Ballard 2020; Tommelein and Ballard 2000), measurable factors which can be calculated and quantified.

Mega projects are a special area of construction (Flyvbjerg 2014) through the development and construction periods which can last up to two decades or more, mega-projects behave in a unique institutional, organizational manner requiring the input of international teams and thousands of individuals. According to Biesenthal et al. (2018), “megaprojects are large socio-technical undertakings that are complex and embedded in institutional frames.” Mega projects are generally of significant social impact, they are frequently funded or partially funded by government entities they are usually many years in development, they are important employers to thousands of specialist and unskilled workers, and importantly, they usually require the participation of large international teams providing specific skills and expertise. Mega-projects, due to the large populations of participants, are a rich source of information on institutional behaviour on multiple levels: corporate interaction, individual action, cultural implication, stakeholder influence and leadership impact. This makes qualitative research and a case study approach, hearing the voices of the stakeholders, over the lifetime of a project, a very enticing proposition.

Megaproject management has been classified by Morris and Geraldi (2011) in three levels: technical, strategic and institutional. Institution Theory includes issues of corporate culture and

sustainability that are outside of the project, but which have a lasting effect on the performance of the contributing parties and therefore have a motivating effect on the behavior of participants on the project. The qualitative process offers a deeper understanding of that motivation through site observation and participant interviews, than might otherwise be provided through quantitative measurement of the project performance along line of time, cost and quality.

3.4.11 Significance and Limitations

The financial public cost and socio-environmental impact of mega-projects makes them an important subject of public scrutiny. The complexity makes them subject to uncertain outcomes as has been seen on projects such as the Sydney Opera House, the Montreal Olympics, the Scottish Parliament and many high speed rail programmes, all completed grossly over budget (Flyvbjerg 2014) The principal limitation is the advanced stage of construction which will prevent collection of data of the full span of the project.

4. References

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