

# DOES CLIENT BEHAVIOUR ACTIVELY INDUCE RISK IN CONSTRUCTION PROJECTS?

A. Arabiat<sup>1</sup>, F.T. Edum-Fotwe and R. McCaffer

*Department of Civil and Building Engineering, Loughborough University, Loughborough, Leicestershire LE11 3TU*

The construction industry is often associated with a reputation for delivering projects that are characterized by budget and schedule growth. Several researches have explored the conditions and factors that produce incorrect estimates as a key factor to increase or decrease the risk. Risk is seen as part and parcel of construction projects, where two key stakeholders, the contractors and consultants, are considered the originators, mitigators and managers of risk. However, risk is not usually associated with the client. Recent developments have shown that clients can equally be the cause of risk, contrary to what is commonly presumed. Some cases as in the new Wembley Stadium and the Holyrood building project have featured the client role in the outcome. The paper presents initial thoughts on a study into how the role and behaviour of the client induces or mitigates risk in projects. The study will approach the client role from an organization behaviour perspective. The study aims to demonstrate whether the characteristics of certain behaviour create a risk management style for the client, and whether these characteristics affect the project risk positively or negatively.

Keywords: client; contractor; organizational behaviour; project management; risk management; risk perception.

## INTRODUCTION

A survey of construction customers in Britain showed that about a third of the projects were delivered both late and over budget and two thirds were late (Morledge1999). This budget and schedule growth has frequently been associated with the construction industry. Klemetti (2006) has argued that the cause of this unsatisfactory performance is due to a failure to recognize or estimate the risks adequately, especially in capital projects like the new Wembley Stadium and the Holyrood building project, as these projects are more sensitive to economical and market changes. There are numerous methods available to address the risks and assess them at early stages, e.g. analytic hierarchy process (Mustafa and Al-Bahar 1991), risk management processes (Tummalaa and Burchett 1999), and fuzzy logic (Tah and Carr 2000). However, the roots of these risks need further investigation, particularly regarding the role of the client in inducing these risks. The role of the client has not been adequately put into the equation of managing risk in early stages of the project comparing to other factors affecting risk. This paper's objective is to address this role in depth and aims to identify generic features of the clients' risk management. The study will investigate the clients' history in managing projects; in terms of perception of risk, organizational behaviour and the performance of clients during the project. The outcome should identify the behavioural patterns of the client which are responsible for inducing risk,

---

<sup>1</sup> a.arabiat@lboro.ac.uk

which will be particularly useful if there was a strong relationship between clients approach to managing risk and the outcome of the project. This relationship should enable managers and investors to link the behavioural pattern and organizational style of the client to the risks associated with projects. The conclusion should reduce some barriers between the client and the contractor by designing a healthier environment of risk management in the construction industry.

## **RISK MANAGEMENT**

Risk is seen as part and parcel of construction projects, where two key stakeholders, contractors and consultants are considered the originators, mitigators and managers of risk. Construction risk is generally perceived as events that influence project objectives of cost, time and quality. Managing risk is defined as systematic risk assessment and management process that is staged as initiation, analysis, allocation and then response (Tehranchi and Flanagan 2006). Risk management is implemented from the opening bidding process and its importance increases during the project as changes are made. During projects, contractors use systematic models such as construction risk management system to help them identify project risks and to systematically analyze and manage them (Al-Bahar and Crandall 1990). However, these systems do not involve the client actively in managing the risk; especially that client participation plays an important role in identifying and then managing these risks (Thompson and Perry 1992).

On the ground however, formal risk analysis and management techniques are rarely used due to a lack of knowledge and to doubts as to the suitability of these techniques for construction industry activities. Akintoye and MacLeod (1997) explain that risk analysis and management in construction depends mainly on intuition, judgement and experience. This strategy shows that project exclusive variables would play a major role and cannot be ignored by systematic models. These variables would add to an alarmist view toward risk. Studies have shown (Smith *et al.* 1999) that construction firms are assuming proportionally greater business risk than assumed by the literature on contingency. Managers reflect their perception of risk management using the concepts of return, risk and ruin (Pryke and Smyth 2006). However, whether the measures used present a satisfactory insurance, these measures could be improved by introducing the variables as the financial factor into the design stage as part of a strategic benefit and not only at a later stage as a problem solving method (Pryke and Smyth 2006).

As identifying risk is associated with experiencing the complexity of the environment past cases as an indicator will be less reliable by time, due to the changing circumstances in the construction environment. The difference of identifying the priorities within the project, as in the triangle of cost-time-quality, cannot be perceived within a single project nor be contained within the boundaries of the relationship between the contractor and the client in a project. This becomes more clear when new types of projects and types of relationships between logistics are being presented. New legal agreements, new styles of management, and new definition or relationships between the client, contractor and the project are being produced. The construction industry is responding to the challenge of accurate budgeting in the domain of facility capital cost budgets and risk management (Jackson 2002).

This response by the construction industry is caused by problems of perception conflict toward risk between the client and the contractor. Pryke and Smyth (2006)

explain that there is a common conflict between the client and the contractor regarding the long-term objectives vs. the short term, in the same way their perception of efficiency and effectiveness is rather different. In terms of dealing with cost, there is always the pressure to produce profit using either short or long term strategies. The priority of outcomes within the project itself would differ between the client and the contractor due to the difference of financial priorities, and the general objectives of the project itself.

These conflicts are rooted in the disputes between different approaches to identifying risk. There are many systematic and mathematical approaches to manage risk, and there have been social science approaches. For example, Harty (2005) says that there is high reliance on using analytical techniques based on a statistical approach in decision making for risk management in construction projects. However, when it comes to considering the complexity of construction projects, construction managers cannot solely rely on mathematical approaches, but by identifying the sources of these risks within the decision making process and therefore, the participants in the decision process. There is inconsistency toward risk identification or the areas that need more attention regarding risk management. Edwards and Bowen (1998) explain that political, economic, financial and cultural categories of construction risk do not get enough attention, in comparison issues regarding quality assurance and occupational health and safety. Even in contract, identifying a high risk operational organization relies mainly in the contractors' quality of operation management and concentrate on experience and capabilities than anything else. The contractors operations style is then characterized by their resource management style, for example, equipment spread-out, segregated production steps and extensive substitution of suppliers and materials (Walker 1996).

A reliable contractor does not necessary means a low risk project. Things get more complicated when the operations are placed in a harder to control environmental variables, known as the political, legal, economical, environmental, social and commercial. The client in general has no ability to change these variables and can only adjust the project to fit these variables. This should lead into investigating the responsibility of the client in understanding the fit of the project into these variable and how would affect the contractor's ability to reduce the risks emerging within the project. Previous studies (Jackson 2002) has concluded that two elements have major significance for the contractor to reduce the risk within the project, the first is regarding the information being available to the parties regarding all the variables of the project and that part is usually the easier to manager, the other part is the changes that will occur to the project. The client role in these elements needs to be extensively investigated.

## **CLIENT'S ROLE**

Definition of the client has changed in respect to the perceived influence the client has on the course and the outcome of the project. Initially the client is seen as the body that initiate the project and has the authority to approve expenditure on the project (Walker 1996). The client is categorized based on type of projects he is involved in, value of projects, expertise or skill and size of organization history (Pryke and Smyth 2006). The client image then has developed based on its relationship with the other elements of the project. The client is seen in a unique position from the rest of the industry, as the client sees and experiences building different from the industry; for example, where the client needs a high value for his project the contractor is looking

for a reasonable profit (Boyed and Chinyo 2006). The client characterization becomes more complex when he is constructed within an organization, as the client there is not unitary and that will cause conflict within the project (Boyed and Chinyo 2006).

The client's objectives play the most important feature in any building project, with a topical weighing for these objectives (Figure 1). The way in which objectives are established is closely associated with the power structure of the project participants which, if not controlled, can be complex and inappropriate in achieving the client's objective (Walker 1996)

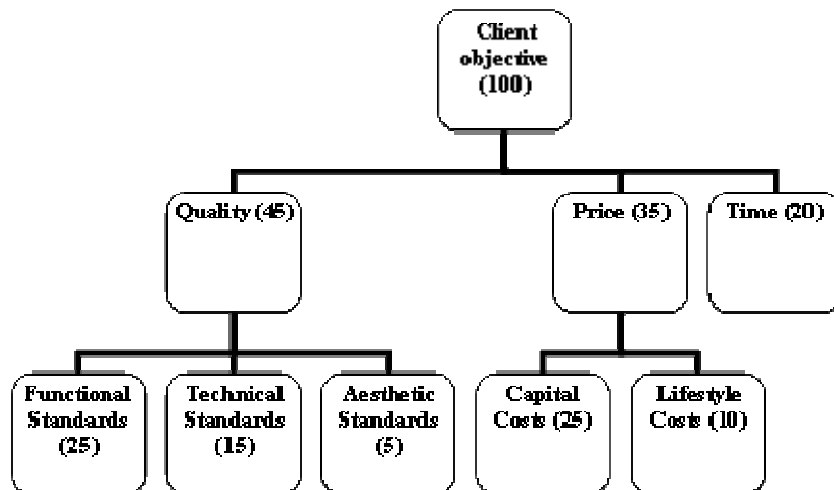


Figure 6: (Walker 1996)

Satisfaction at the construction stage is closely linked to the degree of control and supervision by the client himself. It is important for clients and project team leaders to ensure that clients are appropriately integrated into the project's organization structure because satisfaction at the construction stage is closely linked to the degree of control and supervision by the client himself (Walker 1996). However, corporate client organizations are rarely suitable for providing client management of projects as the style of project management is likely to be more dynamic than that of corporate management particularly when the latter has a rigid hierarchical management structure linked to slowly changing long-term objectives (Walker 1996). There are four factors which effects the client's involvement in the construction management process:

- The structure of the client's organization
- The client's knowledge and experience of the construction process
- The authority vested in the various levels of the client's organization
- The personal characteristics of the client's people who have responsibility for the project.

Empirical evidences provided more dynamic effect of the client organizational structure on the project. Most client systems are very much more complex than is commonly acknowledged by project teams and members of project teams can be impatient of this complexity and insist on dealing with a single client representative within whom all the internal politics of the client system can be contained. In addition, many of the problems concerning design changes, delays and difficulties during the construction phase have their origins in the unresolved conflicts within the client organization. The earliest decisions taken by the client system have more influence over the way the project organization is formed and its subsequent

performance than those taken later. Pryke and Smyth (2006) explain that clients' decisions are personal, shaped by social and political forces as well as by economics and technical considerations and may be unjustifiably constrained by remains of the client's history.

Between the cultural identity of the organization and its actions, the process is filtered by its structure and by tracing the role of the client in shaping the project risk by identifying generic features of the client's risk management by studying their history in managing projects. The outcome should identify the behavioural patterns of the client which are responsible for inducing risk. Any feasible changes for advancement would be easier the closer it get's to the outer surface of the organization as an onion model ( Figure 2) and it will be harder whenever changes are needed in the core of the organization (Mitroff *et al.* 1989). Analysing the organizational behaviour of the client and its effect on risk would start from defining the organizational structure of the client. The organizational structure in term of the transformation of the core identity of the organization into its behaviour toward risk can be linked to a successful or unsuccessful risk management. This can be achieved by a thorough investigation of the organization of the client.

### The Onion Model

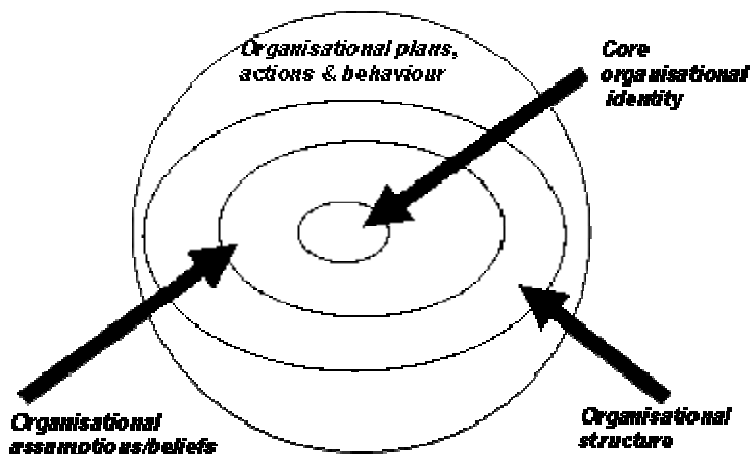


Figure 7: (Mitroff *et al.* 1989)

For the client to reach a decision making process in acting toward risks, the cultural background would reflect the conditions the organization is working within. In taking a decision, consideration need to be given to whether the risk can be effectively managed by the participant allocating the risk or whether the allocation causes a different, but more damaging risk; and whether the allocation of risk intended is effective and enforceable (Edwards and Bowen 1998). In the source of the decision taken by the client, there should a trigger behaviour routed within the organization itself. This trigger behaviour can be routed within the cultural web of the organization (see Figure 3). The client, especially as an organization, reflects its relationship with the stakeholders on the project. This organization, with its elements, defines the way the client reacts to change and perceived information. The paradigm of the client classifies its flexibility and the ability to condition its objectives based on the perceived risks of the project. The client ability to balance between the demands of the stakeholders and the real objectives of the project is fixed within the character the organization which is affected by the cultural web.

## The Cultural Web

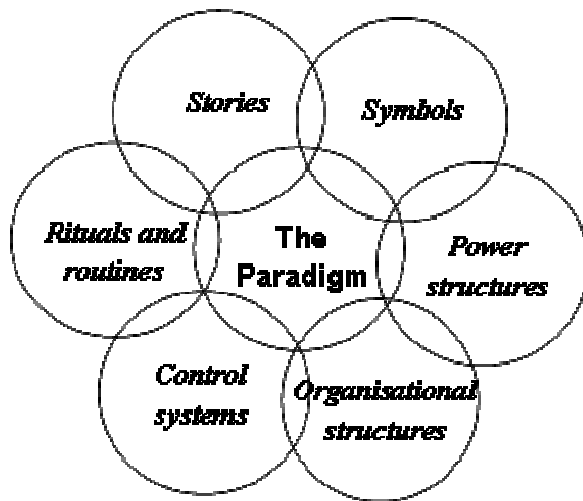


Figure 8: (Johnson and Scholes 2002)

Jackson (2002) makes clear that complete design information leads to more accurate budget estimates and client driven design change is the greatest risk during the project. These two factors are affected by many issues like decision making source, documentation, bureaucracy, and formality vs. informality within the organization. All these elements reside within the pieces of the cultural web of the organization (Johnson and Scholes 2002).

### CASE STUDIES

There are two cases that demonstrate the extent to which a client role can shape the success or failure of the project. Assuming that the client can purely control the outcome is unreasonable; however, the client should be aware of the limitation of controlling complex projects. The more variables are involved, the less likely the contractor ability is to satisfy the client objectives.

#### Case Study 1: The new Wembley stadium

Wembley is the most expensive stadium ever built at a cost of £798 million. Originally intended to open in 2006 the completion was delayed until early 2007. The delays started as far back as 2003. There were warnings to the main contractor Multiplex about rising costs and a delay on the steel job of almost a year due to design changes which Multiplex rejected (*Times Online* 2006).

Minor delays installing seating were blamed on the recent insolvency of a supplier. Multiplex estimates the stadium is unlikely to be ready to host a full-capacity game until June 2006. Wembley National Stadium Ltd (WNSL), the stadium owners, has disputed this claim. Many of the hold-ups have been blamed on the complicated nature of the design and Multiplex has claimed that the 560 changes made to their brief by WNSL caused the delays (Carter 2002) and the client admitted that its design changes affected the project's timetable (*BBC Online* 2006).

Wembley's problems started with the original strategy of the client toward the risk in the project, where the client was trying to counterbalance all input to the contractor. The procurement method for the contractor and their supply chain was focused on transferring the risk. This has produced an adversarial environment where each

company involved in the project were reconstructing their efforts on the demands and risks of their businesses regardless of the ones of the project. Multiplex were an Australian contractor start-up company (*The Guardian Online* 2006); and would not have had the appropriate experience regarding the culture of the British construction industry. Furthermore they were involved strongly in the project with no exit strategy and their relationship with their supply chain was weak. Bewsey (2006) claims that the client made a bad decision in choosing the contractor in the first place and enforcing some limitations and changes to which the contractor was unable to adapt.

Regardless of where the biggest responsibility falls, the agreement implemented in the first place did not give enough flexibility to the contractor to adapt to the changes in the project. This should have been taken as a big risk in the design stage. The client assumed that the bargaining power of the client which is strong in first stages is adequate to maintain a controlled project.

### **Case study 2: Scotland's new parliament**

Scotland's new parliament, aka the Holyrood building project, was 3 years late and eleven times over budget reaching £430 million, which included trebling the size of the building and changing the specifications on a daily basis (Audit Scotland 2004). The report for the Auditor General for Scotland on the project explained that the main cause of the 20 months since September 2000 was the production of detailed design variations and the late supply of information during the construction process. There were difficulties associated with the construction of a very complex, densely developed, unusual building against very tight deadlines. Both the architects and some trade contractors did not deliver on time some critical elements of the design work. Project management did take part of the blame however, as they required a very demanding timetable for completion without addressing the root causes of the problems, which were adversely affecting both cost and programme. The main reasons for construction cost increases after 2000 were design development and delay in the construction process. The design development was entirely related to realizing the detail of the building and aspects such as the quality of finish and the palette of materials that were used, in accordance with the client's requirements.

The client maintained a drive for the earliest achievable completion date, based on the recommendation of the consultants without taking into account the contractor's position. Program revisions repeatedly incorporated assumptions about design and construction performance that the design team and contractors agreed were achievable but were subsequently not achieved. There were two main reasons for the problems in the project, the first is the lack of understanding by the client of the complexity of the project, indicated by the undervalued initial cost of the project and the other is the lack of focus on the real objectives of the project regarding time, cost and quality proved by the lack of consistency toward these goals (Audit Scotland 2004).

This case falls into Mitroff *et al.* (1989) definition of crisis-prone vs. crisis-prepared organization, where crisis-prone organizations are characterized by inflexibility and high rationalization. But most importantly is the high denial of a crisis appearing from the first stages, and the high defensive mechanism that characterizes the client.

## **METHOD**

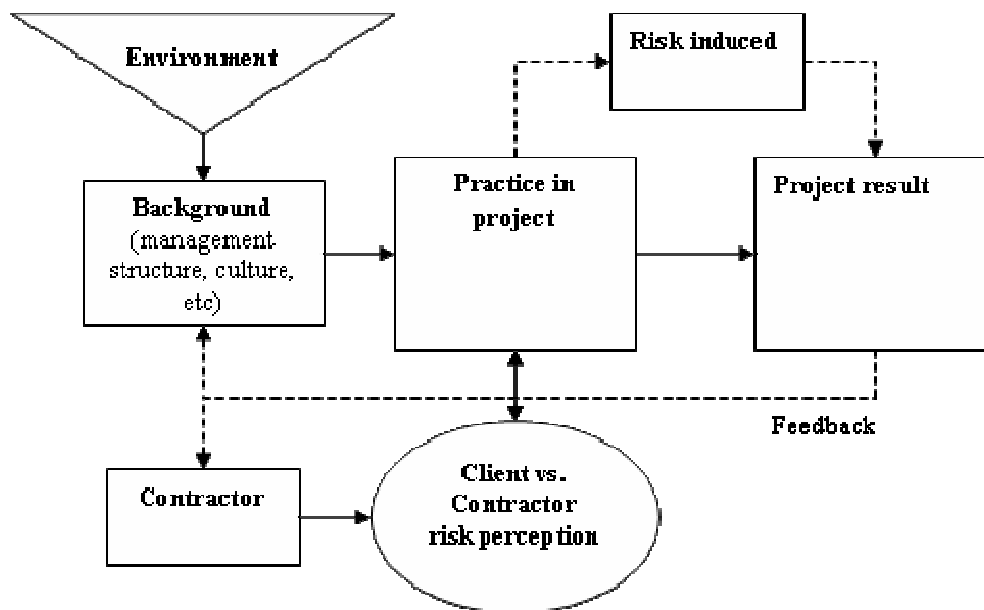
The information required to accomplish this research project will be gathered from the following three sources:

A. Interviews with representatives of global construction companies which are conducting business in Britain and globally. Although the geographical distribution of their work is not the main focus of this project, the change of the geographical market can be important to determine the influence of geographical or cultural difference on results. These interviews should reflect the experience and differences of risk management styles.

B. Scholars who did their work in a similar field, particularly in international business and on how global corporations conduct their deals with their customers. The purpose is to give insight into the construction business from the pure business management perspective.

C. Data collected on the construction business in general including financial statistics and presentations given to stockholders of these companies.

The information consists of values reflecting the objectives of the organization and transformation of these objectives into its activities within the project. These values would be compared with values representing the internal variables of the project that reflect on the risks. This Research starts from identifying the cultural background of the client and its effect on the managerial style of the client, then the effect of this background on the attitude of the client toward risk, the project, the contractor managing the project and finally how this relationship reflect on inducing risk as shown in Figure 4.



**Figure 9:** Proposed method for identifying client induced risk

The methodology combines both qualitative and quantitative information. The information provided in the interviews and the statistics will be interpreted using management theories to think on the management level rather than on just the operational. Complications would arise from the fact that most of the companies' information will be obtained from different departments. This is intended to provide different perspectives and also give a pragmatic overview of the state of the company and its strategy.



## **NEXT STEPS**

The next stage of the research will involve locating interviews, mainly with contractors and the clients. Projects will be investigated as case studies until a saturation of information is reached. In the end, the information collected can be tested on other projects and can be explored in term of its connection to the structure of the legal contracts, the value chain and the attitude of the industry in general. This should allow the development of the research where the influential behavioural patterns in inducing risk are identified and has reached a convincing conclusion where the client can accept its recommendations.

## **CONCLUSION**

Addressing the risk is a complicated process that has to be systematic. However, theories have a problem in coming out with good success rate when practiced on ground, especially that more than one partner plays a role in inducing the risk. Overlooking the effect the client has on inducing risk will have a regretful impact on the strategy the project manager has to manage the risk. The role of the client starts from his background which is affected by cultural and organizational influences and this might drag his attitude toward risk into real practice in the project. This rule might have been undervalued due to lack on interest of the clients to take responsibility if managing the risk, but the changes in technological and financial tactics in construction could bring that role under stronger investigation. Managers can use these investigations and the outcome of these studies to improve their methods in dealing with the complexity of managing risk and reducing it in early stages.

## **REFERENCES**

- Akintoye, A.S. and MacLeod, M.J. (1997) Risk analysis and management in construction. *International Journal of Project Management*, 15(1), 31-8.
- Al-Bahar, J.F. and Crandall, K. (1990) Systematic risk management approach for construction projects. *Journal of Construction Engineering and Management*, 116(3), 533-46.
- Audit Scotland (2004) Management of the Holyrood building project.
- BBC News online (2006) Wembley cleared after beam slips. Available: [news.bbc.co.uk/1/hi/england/london/4824448.stm](http://news.bbc.co.uk/1/hi/england/london/4824448.stm). [20 March 2006].
- Bewsey, G. (2006) Wembley Stadium: can all the problems at Wembley be placed at the feet of Multiplex? *Construction Manager*, 12(5), 12-3.
- Bowers, S (2006) Australian builder doubles profits despite Wembley problems. *The Guardian Online*. Available: [www.guardian.co.uk/wembley/article/0,,1852899,00.html](http://www.guardian.co.uk/wembley/article/0,,1852899,00.html). [18 August 2006].
- Boyd, D. and Chinyio, E. (2006) *Understanding the construction client*. Oxford: Blackwell Publishing.
- Carter, P. (2002) English National Stadium Review: final report. Available: [www.culture.gov.uk/PDF/Nat\\_Stadium\\_reveiw.pdf](http://www.culture.gov.uk/PDF/Nat_Stadium_reveiw.pdf). [10 May 2007].
- Edwards, P. J. and Bowen, P. A. (1998) Risk and risk management in construction: towards more appropriate research techniques. *Journal of Construction Procurement*, 4(2),103-15.
- Harty, C. (2005) Innovation in construction: a sociology of technology approach. *Building Research and Information*, 33(6), 512-22.

- Jackson, S. (2002) Project cost overruns and risk management. In Greenwood, D. (Ed.), 18th Annual ARCOM Conference, 2-4 September 2002, University of Northumbria. Association of Researchers in Construction Management.
- Johnson, G. and Scholes, K. (2002) Exploring corporate strategy. 6ed. London: Prentice Hall.
- Klemetti, A. (2006) Risk Management in Construction Project Networks. Laboratory of Industrial Management Report 2006/2.
- Mitroff, I.I., Pauchant, T., Finney, M. and Pearson, C. (1989), Do (some) organizations cause their own crisis? The culture profiles of crisis-prone vs. crisis-prepared organizations. *Industrial Crisis Quarterly*, 3, 269-338.
- Morledge, R. (1999), Marketing: a solution to construction market failure? *International Journal for Construction Marketing*, 1(1).
- Mustafa, M.A. and Al-Bahar, J.F. (2002) Project risk assessment using the analytic hierarchy process. *Engineering Management*, 8(1), 46-52.
- Mylius, A. (2005) Construction: mega-projects such as the new Wembley stadium can cause mega-problems for procurement. *Supply Management*, 10(20), 20-3.
- Porter, M. (1985) *Competitive advantage*. New York: The Free Press.
- Pryke, S. and Smyth, H. (2006) *The management of complex projects: a relationship approach*. Oxford: Blackwell Publishing.
- Smith, N.J, Merna T. and Jobling P. (2006) *Managing risk in construction projects*. 2ed. Oxford: Blackwell Publishing.
- Tah, J. and Carr, V. (2000) A proposal for construction project risk assessment using fuzzy logic. *Construction Management and Economics*, 18(4), 491-500.
- Tehranchi, H. and Flanagan, R. (2006) The social and cultural construction of risk. *Construction Information Quarterly*, 8(4), 167-72.
- The Times Online (2006) £15m court case puts spotlight on Multiplex. Available: [business.timesonline.co.uk/tol/business/industry\\_sectors/construction\\_and\\_property/article707851.ece](http://business.timesonline.co.uk/tol/business/industry_sectors/construction_and_property/article707851.ece). [21April 2006].
- Thompson, P. and Perry, J (1992) *Engineering construction risks: a guide to project risk analysis and risk management*. London: Thomas Telford Ltd.
- Tummala, V.M.R. and Burchett, J.F. (1999) Applying a Risk Management Process (RMP) to manage cost risk for an EHV transmission line project. *International Journal of Project Management*, 17(4), 223-35.
- Walker, A. (1996) *Project management in construction*. 3ed. Oxford: Blackwell Science.