

QUALITY OF THE PROJECT MANAGEMENT PROCESS: AN INTEGRATED APPROACH

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A unified criterion to measure quality has proved difficult in quality management research. Because of the nature of quality, it is not possible to measure quality directly. This has resulted in the use of quality constructs and their associated items as proxy measures of quality. A number of studies in other industries have been conducted to find out the relationship between quality management efforts and performance outcomes. This research takes a quality management perspective to understand the relationship between project management processes and project performance. One of the areas of concern is the measurement of quality of the project management process. An integrated project management process quality (PMPQ) conceptual measurement framework is presented. The framework integrates a generic quality measurement dimension adapted from the business excellence model (EFQM) and a project management specific dimension developed from a literature survey. Having developed the conceptual model, results from a preliminary survey were integrated into the model. The resultant model incorporating both the generic framework and the project management specific framework shows the potential of the model to measure quality of the project management process.

Keywords: Quality, project management, Total Quality Management, process, business excellence.

INTRODUCTION

Quality management literature reveals a myriad of studies that have focussed on the need to understand the relationship between quality management efforts and performance. See for example, Anderson et al (1999), Barad and Raz (2000) and Ahire et al (1996). This has resulted in the development of quality evaluation frameworks. Although quality management research is not uncommon in construction management research its focus has main focus has been the quality of the constructed facility (Zulu and Brown 2002). Quality in projects can be broadly grouped into quality of the product and quality of the management process (Turner 2000). This research focuses on quality of the management processes as represented in the functions of project management (PM). The definition of project management (PM) shows that its central purpose is to deliver projects to a successful conclusion. Walker (1996:5) defines PM as ‘The planning, co-ordination and control of a project from inception to completion on behalf of a client requiring the identification of the clients objectives in terms of utility, function, quality, time and cost, and the establishment of relationships between resources, integrating, monitoring and controlling of the contributions to the project selecting alternatives in pursuit of the clients satisfaction with the project outcome. Several studies have been conducted to find out the

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influence of project management processes on project performance. This research contributes to the understanding of the relationship from a quality management perspective. The logical assumption in quality management literature is that an increased quality management effort increases the chances of better performance. It is with this view that this research argues that increased quality of the PM process should enhance the chances of better performance. In order to evaluate this relationship there is need to find a criteria to measure quality of the project management process. Literature shows that there is no unified model that can be used to measure quality. This paper focuses on the development of a quality measurement model for project management processes. A common approach in the development of quality measurement criteria has been based on quality awards such as the Malcolm Baldrige National Quality Award (MBNQA) used in the United States of America (see for example Anderson et al 1999) and the European Foundation for Quality Management business excellence model (EFQM) used in Europe (see for example, Bryde 2003 and Westerveld 2003). We take here a similar approach and developed a project management quality model based on the EFQM criteria. However it has been noted in literature that such models are ideal for organisational analysis and not project process analysis. The development of a useful quality measurement model for construction project management will therefore require incorporating project management specific measurement criteria in the generic quality measurement constructs. The research draws ideas from quality management literature in other industries and applies them to the project management environment.

The paper is organised as follows. Literature on quality in project management is first reviewed. The EFQM model is then introduced followed by a discussion on the proposed project management process quality model. Focus is then be made on the integration of PM-specific quality influencing factors, identified in the preliminary survey, into the PMPQ model. Conclusions are also made on the potential suitability of the measurement framework.

QUALITY IN PROJECT MANAGEMENT

There are several perspectives from which the relationship between quality management and project management has been evaluated. For example project management has been used to implement quality management systems (Hides et al 2000, and Lo and Humphreys 2000). Studies have also shown the complimentary nature between the use of project management and quality management (Orwig and Brennan (2000). Stamatis (1994) and others (see for example Ramabadron 1997, Armad and Sein 1997, and Cammarano 1997) have examined the influence of project management on quality factors (for example customer satisfaction). Studies have also shown that it is possible to integrate quality management principles into project management (Pzernica 2000, Fennessy 2001, MacAdam 2000, Bryde 1997, Bryde 2003, Barad and Raz 2000, Lazlo 1999, Westerveld 2003, Cicmil 2000 and Goulet and Azodekon 2001). The International Standards Organisation (BSI-ISO10006 2000) advocates for the use of quality management principles in project management. A distinction is made between quality of the project management process and quality of the product. Turner (1999) presents a total project quality model that distinguishes between product quality and management quality. These are both underpinned by quality control and quality assurance. This distinction between project management quality and project quality is also recognised in the PMBOK (PMI 2000), ISO 1006 (BSI-ISO10006, 2002) and in BS 6079 (BSI-BS 6079, 2002).

Few studies have attempted to show the relationship between quality in project management and performance. Notable among these include Barad and Raz (2000), Bryde (2003) and Westerveld (2003). Barad and Raz's study is based on the Hi-tech and Software industry in Israel, while Bryde (2003) focuses on soft project management (i.e. change management projects) in organisations. Bryde (2003) although proposed an evaluation model, did not evaluate the causal relationship between the different quality constructs. Westerveld (2003) proposed an evaluation model that is developed based on the EFQM model. Westerveld (2003) developed constructs based on project management literature on critical success factors and project success failure. These factors were built into the project management excellence model. This research builds on these studies and primarily focuses on construction project management.

QUALITY MEASUREMENT FRAMEWORK

Literature review shows that the measurement of quality has been dominated by the use of quality constructs. This is because quality cannot be measured directly. These constructs have been primarily developed from quality management systems or quality awards (see for example, Ahire *et al* 1996, Anderson *et al* 1999, Pannirselvam and Ferguson 2001, Bryde 1997, Bryde 2003 and Westerveld 2003). The most common of these are Total Quality Management (TQM) and the self-assessment award models such as the American Malcolm Baldrige National Quality Award (MBNQA) and the European excellence model (EFQM). However Dale (2003) points out that the use of these quality models provides a general definition and description of quality management within a defined framework. Literature review has shown that there is no agreed framework of constructs to use to measure quality. However an analysis of the different models shows the similarities of the measurement constructs despite the different names given to the constructs.

Because these models can be interpreted as a depiction of quality management within a defined framework, any of these frameworks can be utilised to base a model that can be used to measure quality of the project management processes. It is worth noting however that these models were developed for analysis at an organisational level. Researchers have recognised this and have attempted to adapt these models for project environment. See for example Bryde (2003), Westerveld, (2003), and Lazlo (1999).

QUALITY MANAGEMENT CONSTRUCTS

The development of the project management process quality (PMPQ) measurement model is adapted from the EFQM model. This is a similar approach to the models used by Bryde (2003) and Westerveld (2003). Bryde (2003) does not focus on construction environments but on soft projects in organisations with in house project management. This is different in construction and in particular in this research where most of project management services are contracted from outside the parent organisation. Westerveld (2003) developed a project excellence model linking critical success factors and project success. This model however leans heavily on factors that are specific to projects. However, Arditi and Gunarydin (1997, 1998, and 1999) show that it is important to include into the measurement model factors that are generic to quality management and those that are specific to particular processes. It will be important therefore to develop a quality evaluation framework that includes both the generic component and the project management specific component. An integration of the two models from Bryde (2003) and Westerveld (2003) provides a strong basis

from which to develop a model that integrates both project management specific factors and generic quality management principles into a project management process quality (PMPQ) measurement model.

The PMPQ model discussed below reflects constructs in a way that is meaningful to construction project management processes. The EFQM model is based on nine criteria, grouped into two as in figure 1. The enablers are the driving force while the results area depicts the effect of management practices. This can be looked at as a cause and effect model with enablers influencing the results area.

Both Bryde (2003) and Westerveld (2003) used this EFQM model to develop project management constructs. For example Bryde (2003) replaces the EFQM terms to suit project management. He uses project management (PM) leadership, PM staff, PM policy and strategy, PM partnership and resources, project life cycle management process and PM key performance indicators in place of the EFQM's leadership, people, policy and strategy, partnership and resources, process, and key performance results respectively. Westerveld (2003) uses leadership and team policy and strategy, stakeholder management, resources, contracting and project management as the enablers and also modifies the results area to reflect the multi-stakeholder/multidimensional definition of project performance. These include project results, client, project personnel, contracting, users and stakeholders' results criteria. Major differences between the two studies emerge. Firstly it is noticed that there is no agreement as to the constructs to be used in place of the EFQM model. Secondly although Westerveld (2003) does not detail the measurement criteria in each construct, these are developed from the project success/failure literature. Bryde (2003), on the other hand, although includes some measures that are specific to project management is inclined to suit the measurements from the generic quality management literature to project management.

This research takes a similar approach by adapting the EFQM criteria to reflect the project management environment as depicted in figure 2. This reflects the categories of factors that would influence the quality of the project management process. We interpret here the constructs in the model. Project Management Leadership is interpreted as the role of project manager and the project management consultancy firm in fostering a culture of quality in the project management processes. Project Management Policy and Strategy is interpreted here as those project management policies and strategies that affect the quality of the project management process. This would include for example, existence of a project management methodology, strategies towards, risk management, contracting, information management and change management. Project Management Teams represents the human resource management component and include human resource practices influencing the quality of the project management process. Project Management Processes incorporates management of the project management processes including planning, monitoring, controlling, and feedback. Project Management stakeholder Management includes practices aimed at managing all stakeholders and in particular management of the client. This would include such factors as information management involvement in the briefing process and establishment of partnering arrangements.

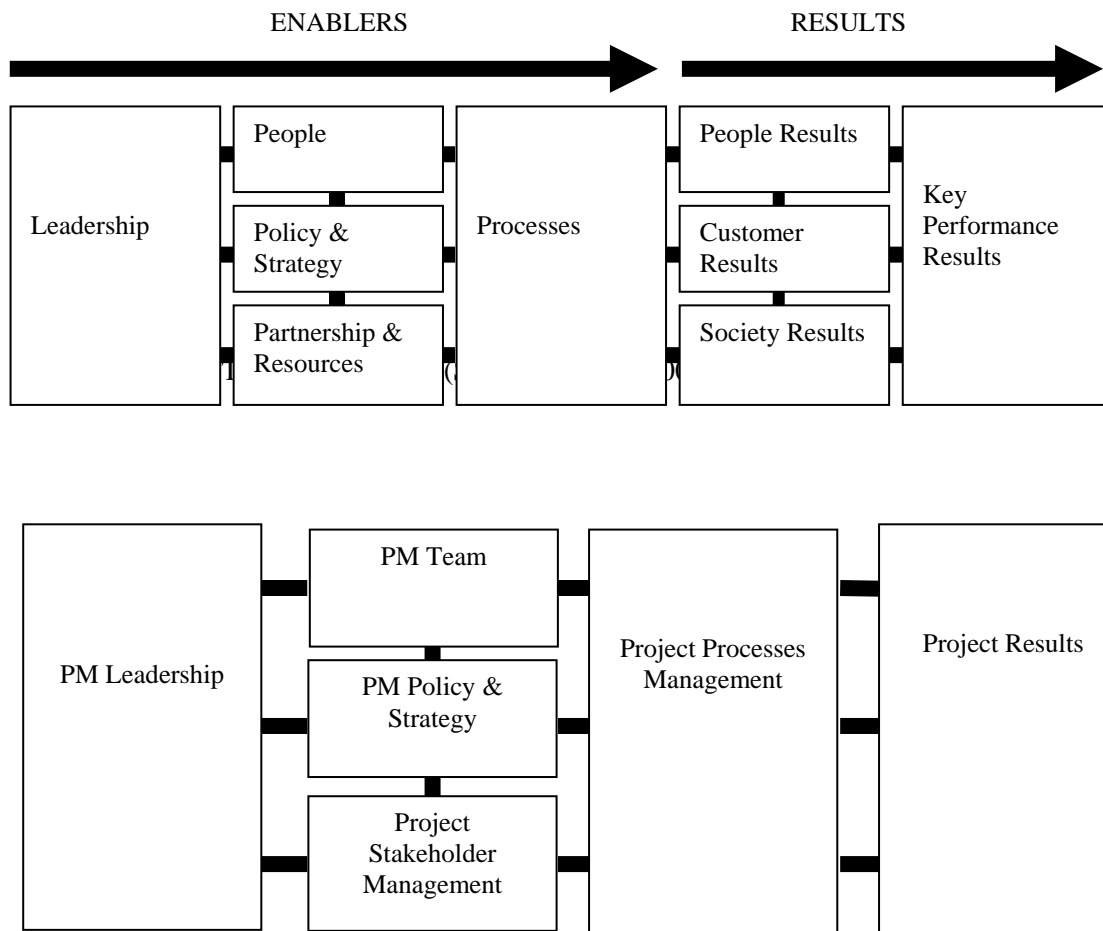


Figure 2: The PMPQ model

THE SURVEY

We discuss here some of the results from a preliminary questionnaire survey which aimed at gaining an insight into factors project managers thought would be significant in affecting the quality of the project management process. A questionnaire was sent to firms that offer project management services. The sample was drawn from companies in the construction industry that are involved as construction project managers. A list of companies was developed from Internet search and totalled 160 project management firms. The definition of project management firms includes any company that would be employed as project managers on construction projects. One hundred and ten (110) postal questionnaires were sent out and 30 (27%) responded. This is within the norm of 20-30% response rate for construction industry research (Akintoye, 2000). Although the survey covered a number of areas, we focus here on the project management quality influencing factors. Respondents were asked to list factors that affected the quality of their project management processes. Table 1 summarises the answers from the respondents.

We attempt here to incorporate the findings into the PMPQ model. Table 2 shows the constructs with which each of the factors is associated. The project manager's leadership style and attitude will be critical in leading the project. Literature shows that the setting of targets to achieve the desired results is an important aspect. It will

be important also that, in order to achieve the desired results, the roles and responsibilities will have to be defined. Factors that would be of influence to quality of the project management process under the project policy and strategy construct would include, project information management strategy (effective information strategy including, communication of parties, communication methods, information flow, accuracy of information, and production and distribution of information), risk management strategy and change management procedures. Project team factors would include, number of times team have worked together, qualified personnel, right team selected for the project, integration, team building, skills of team members, experience of team members. Project management process factors would include, change management process, regular feedback and monitoring, timing of decisions, decision making, co-ordination, forward planning. Factors affecting stakeholder management would include understanding client’s requirements, involving of end users, managing the client, client perception, and the type of project.

Table 1: List of factors affecting Project Management Quality

PMPQ INFLUENCING FACTORS	
Accuracy of information	Number of times team has worked together
Change control	Project manager attitude
Working relationship with client	Regular feedback and monitoring
Effective communication	Right team selected for the project
Production and distribution of information	Risk management strategy
Co-ordination	Setting targets
Decision making process	Skills of team members
Qualification of project team members	The project manager
Experience of team members	Timing of decisions
Forward planning	Type of project
Goal setting	Understanding clients requirements
Identification of responsibilities	Understanding roles and responsibilities
Information flow	Understanding the project in hand
Integration of processes	Managing the client
Involving of end users	

Table 2: Integrating quality factors into the PMPQ Model

CONSTRUCT	QUALITY FACTOR
Project Management Leadership	The project manager Setting targets Identification of responsibilities Understanding the project in hand Project manager attitude
Project Management Policy and Strategy	Experience of team members Project Information management system (Communication of parties, Communication speed/methods, Effective communication Information flow, Accuracy of information, Production and distribution of information)
Project Teams	Number of times team have worked together Qualified personnel Right team selected for the project Risk management strategy Skills of team members
Project Management Processes	Change management process Regular feedback and monitoring Timing of decisions Decision making Integration Co-ordination Forward planning
Project stakeholders	Understanding clients requirements Involving of end users Managing the client Client perception Type of project

Using these together with generic factors, as in the EFQM model, would make it possible to define and measure quality of the project management process. Taking Project management leadership as an example, the generic focus would be on the role of the project manager in fostering a culture of quality in the project set up. This together with such factors as identified above would adequately capture the quality dimension in project management associated with the project management leadership construct.

CONCLUSION

It is seen from the above that such a measurement model is viable for the evaluation of quality of the project management processes. Although attempts have been made to measure quality of the construction project management process, no empirical study has been done concerning quality of the project management process. This research attempts to measure quality of the project management process as part of a wider research that seeks to investigate the influence of the quality of the project management process on project performance. The results presented in the study are from a preliminary questionnaire survey which was intended principally as a scoping survey. Therefore more work would need to be done. However this paper shows the possibility of integrating the generic quality management framework with project management specific factors to develop a measurement model for project management

process quality. The next step in the research involves a consolidation of this measurement model and ultimately testing the model in the field.

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