

Identifying the most common issue in project management and how South African firms cope with it – a case study of Company X

Khathutshelo Mushavhanamadi

Department of Quality and Operations Management,
Faculty of Engineering and the Built Environment
University of Johannesburg, PO BOX, 524, Auckland Park, 2006
South Africa
kmushavhanamadi@uj.ac.za

Bruce Javani

Department of Quality and Operations Management,
Faculty of Engineering and the Built Environment
University of Johannesburg, PO BOX, 524, Auckland Park, 2006
South Africa
bjjavani@gmail.com

Abstract

Project management is growing as the favorite approach to achieve goals and for it to be regarded as crucial, there is need for top management to see it as such so that it may be justified to come up with a unit aside from the routine structure of a company. As such there is need for a study that aims at identifying the common issues in project management (PM) in South Africa. In light of this, the study will attempt to determine the importance planning, scheduling, monitoring and controlling of projects. The study made use of the qualitative methodology approach. Semi structured interviews were used to gather information from employees at different levels in terms of the organizations' hierarchy and work experience. The research results will add to the already available information on this subject. Also, the study has recommendations that can also assist organization in the implementation of their projects.

Keywords: Project management, common issues, South Africa

I. Introduction

A project is a short-term endeavor that is done to achieve specific goals which are unique. Its management involves the proper implementation of the requisite performance and skills sets. The use of project management (PM) (Meredith & Mantel 2012) continues to balloon and spread its wings across society and many institutions due to its ability to accomplish goals which if attempted through traditional ways would be insurmountable tasks to accomplish. However, as posited by, (Meredith & Mantel 2012) there are organizations which are now resorting to the use of project management to achieve almost everything they engage on. So, with the increasing attention to resort to the use of project management in achieving almost every endeavor they embark upon, companies need to embrace the various aspects that make up (PM). These aspects include (PM) processes, (PM) knowledge areas and (PM) issues if the organizations going to register remarkable successes in all they undertake (Alias et al. 2012).

1.1 Research problem

In an attempt to improve their project management success rates, organizations must gain a clear understanding and appreciation of what project management is. Apart from that it is also of critical importance that the project managers gain an in-depth understanding of the various processes and knowledge areas of project management as this is vital in their holistic view of projects and how they should acquit themselves (Alias et al. 2012). Apart from the aforementioned factors, it is of great importance that organization develops a great deal of understanding of the environment they operate in and also the various limiting factors that cripple projects time and again in different

economic environments. It is this understanding that equips the project managers with the right information and tools to succeed in their projects implementation. (Alias et al. 2012) In light of the foregoing, it is crucial to undertake a study identifying the most common issues or challenges in project management and how South African firms are coping with them.

1.2 Research Goal

The aim of this research is to identify the most common issues or challenges in project management and how South African firms are coping and handling them.

1.3 Research Objectives

- To ascertain the importance of planning in project management amongst some South African firms.
- To determine the importance of scheduling in project management amongst some South African firms.
- To assess the significance of monitoring resources, budgets and costs i.e. controlling in project management amongst some South African firms.

1.4 Research Questions

- What is the importance of planning in project management on some South African firms?
- What is the significance of scheduling by South African firms in project management?
- What is the importance of monitoring resources, budgets and cost i.e. monitoring in project management amongst South African firms?

2. Literature Review

2.1 Project Management Definition

A project is a sequence of related tasks and activities which are aimed at accomplishing a unique product, service or outcome. A project as propounded by Schwalbe (2007), has its own distinct attributes which include having a unique purpose, need for a sponsor, requiring resources from different areas and being a temporary endeavor among other things and as such the application of the skills, tools and knowledge to the tasks of a project so as to fulfill the project's requirements is referred to as project management (Schwalbe 2006).

2.2 Project Management processes

A process is a set of interlinked activities that are aimed at creating or coming up with a product or services and in project management generally there are five process categories these processes are initiation, planning, executing, monitoring and control and the closing stage. These processes act as a pathway for implementing the right management skills and knowledge as the project runs (Meredith & Mantel 2012).

2.2.1 Initiating Process

These are processes performed to clearly outline what a new project entails or a new phase of a running project by securing authorisation to begin the project or phase. Apart from that, this stage also sees the setting of objectives and outcomes, appointment of project manager and the budget apportionment (Schwalbe 2006).

2.2.2 Planning Process

It encompasses those processes needed to ascertain the scope of the project, thorough refinement of the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve. Also, as part of the planning, there is budget creation estimation of cost and resources needed as propounded by Schwalbe (2006).

2.2.3 Executing process

As posited by Shwalbe (2001), these are the processes performed to finish the work stated in the project management plan to satisfy the project specifications. Some of the activities at this stage include coordination of personnel and resources monitoring team performance and the distribution of information.

2.2.4 Monitoring and Controlling Process

These processes entail tracking, reviewing, and regulating the progress and performance of the project: figure out any areas in which changes to the plan are necessary; and kick start the corresponding changes (Schwalbe 2006).

2.2.5 Closing Process

As stated by Meredith & Mantel (2012), these are the processes done to finalise all activities across all Process Groups to formally close the project or phase. Archiving and storage of information takes place at this stage.

2.3 Project Management Knowledge Areas

In project management, there is important knowledge areas that project managers should be well versed in which are commonly referred to as the project knowledge areas. Failure to understand these may result in issues bedeviling the project arising. These project knowledge areas include the project time, scope, cost and quality management. These are briefly discussed below.

2.3.1 Managing scope of project

Project scope management, as noted by Mesa (2006), is entirely concerned with harmonizing all the activities that are required in bringing forth the project products and the processes used to create them thus making it crucial. To this end, there is need for clear consensus between the project team and the stakeholders as to the output or result of the project as well as the processes that will be employed to produce that output. The importance of project scope management is further emphasized by Shwalbe (2006), who clearly outlines the processes involved in this aspect and states the need for those processes to be followed if project issues to do with failure to understand scope are not to be encountered. These processes are planning of scope, defining the scope, work breakdown structure creation, verification and control of scope.

2.3.2 Managing time of project

This has to do with finishing the project in time. According to Mesa (2006) most project managers set highly optimistic schedules without taking into consideration risks associated with projects which might result in delays. As such one can only but emphasize the need to for project managers to understand and follow through the project time management processes as outlined by Shwalbe (2006). These processes involve defining the activities, organizing them in sequential order, generating an estimation of the required resources, estimating the time an activity might take, generating a schedule and controlling the schedule (Aarseth et al. 2013).

2.3.3 Managing cost of project

Every project comes with an approved budget and as such it is crucial that the project team finishes the project within the confines of that set budget. To this end a clear definition of the project and its cost estimates are significant. So as such the project managers need to clearly understand the project cost management process since it assists them in doing cost estimation, cost budgeting, and controlling costs Shwalbe (2006).

2.3.4 Managing quality of project

When a project is undertaken, there are needs and expectations of the stakeholders that it is supposed to meet or exceed. As such, there is need to for project teams to foster good working relationships with stakeholders where critical information which is crucial for the success of the project is disseminated to the right people. Project quality management as postulated by Shwalbe (2006) involves three important processes. These are quality planning, quality assurance and quality control. An in-depth understanding of these is critical and crucial in project team achieving their quality goal in the project thus avoiding project quality issues.

2.4 Project Management Issues in Developing World

According to Allan (2006) there are a lot of challenges that result in project failure in both the developing and developed countries. However, he noted those that he identified as the major contributing ones in developing countries as lack of sponsors which result in projects being inadequately funded. He also noted lack of sponsors also on the part of managers that is managers failing to make available the required recourses. Apart from this, he also noted the appointment of wrong project manager that is someone without the requisite skills level as another issues. Team members with inadequate time to carry out their project works and also non-co-ordination between the project and everyday services are also issues of concern in project failure in developing countries.

2.5 Project Management Issues in South Africa

In South Africa it has been noted (Mesa 2006) that chief amongst the reasons for project failure are

- Not clearly defined or identified goals: failure to do this can be detrimental to the whole team and as such there is need for the project manager to determine, establish the right goals and properly communicate them.
- Alteration of scope also referred to as scope creep is yet another issue. This is where by the project manager allows the project to go beyond the initial set objectives. This has negative effects on the project completion time and budget
- Lack of the requisite skills. A proper assessment of the skills sets of the workers is crucial to ascertain competence. This may detect to the manager whether there is need for more training or hiring more personnel
- Accountability issues. Failure by the project manager to take responsibility can really be detrimental to the continuation and completion of a project
- Failure to manage risk: risk assessment and tolerance are some of the traits that a good project manager should be in possession of and as such this should be catered for in planning if the project is to succeed
- Lack of good communication: lack of good communication at both written and oral levels is also noted as a reason for project failure as it often kills morale of the team.
- Unrealistic deadlines: experienced project managers know the negative effect of setting and asking for unrealistic targets. This has terrible productive repercussions and has also been noted as a cause for project failure also.

3 Research Methodology

3.1 Research Design

The use of a specific research methodology assisted the researcher in acquiring from a representative sample of internal employees within the organization, a plethora of reflections to the various issues in (PM) and how they are being handled. The qualitative research methodology was employed. This is defined as an implementation involving an detailed, critical and in-depth examination of a study (Sekaran & Bougie, 2013). Qualitative methodology spits hairs on how people ascribe meaning to their experiences and situations. The selection of this method was based upon issues that arise in (PM). This study made use of qualitative methodology because at times employees have diverging views on what they view as the ultimate issue at hand in different projects. With qualitative research meanings expressed through words and these can be classified. This study took an interactive dimension, through interviews.

3.1.1 Research Method

In attempting to identify and describe issues common in (PM) and the ways to cope with them, this research was rather descriptive than explanatory. The researcher used a qualitative method of research as it analyses how people ascribe meaning to their experiences and situation in the work place thus therefore being able to share views on the common (PM) issues.

3.2 Sampling Process

3.2.1 Population

Population, this is the entirety of a group of people or things of interest which the researcher intends to investigate (Sekaran & Bougie 2013). In this instance, the study took place at a production company in Midrand, South Africa. The researcher collected data about employees at the organisation, focusing on a number of departments namely finance, production, marketing and communications and human resources. The population size was twenty-six.

3.2.2 Sample

A sample is a subset of the population thus it is made up of some members selected from the population (Sekaran & Bougie, 2013). They defined a sampling frame as a true physical representation of all the elements in the population from which the sample is extracted. The researcher resorted to a non-probability sampling design which detects that elements that do not have a predetermined chance of being picked up as subjects (Sekaran & Bougie 2013). Sampling size is the number of individuals chosen for a particular study from a population. The researcher focused on six employees, due to the time limiting factor of the research study and due to the fact, that, the organisation under consideration is not huge.

3.2.3. Data Collection Method

Qualitative data collection enabled the researcher to acquire deep understanding and explanation of the topic at hand. There are quite a number of methods used for collecting data such as interviews, questionnaires, observations and archives (Kruger & Welman 2001). However, for the purposes of this study, semi-structured interviews were used as the primary source of data collection. The use of various data collection methods for a study help to strengthen answers acquired and enhance the reliability and validity. Thus, this section describes the various methods and technique used during the data collection process (Kruger & Welman 2001).

3.2.4 Semi-Structured interviews

Kruger & Welman (2001) state that interview guides should be employed in semi-structured interviews and this is made up of a list of questions that have relevance to the given theme that the interviewer raise in the course of the interview. Similar questions will be asked to the interviewees, but however the structured interview will allow the interviewer to ask further questions to clear out grey areas. Emails were sent to the participants and follow up phone calls were made to schedule the interviews. The interviews were done over a period of three days with two interviewees being interviewed per day. This was in line with the agreement with top management so as to not eat into the employee's productive time much.

3.3. Data Analysis

Content analysis which is research method that is used to systematically evaluate the critical and important content of all forms of gathered communications and deduce some patterns and themes, was used by the researcher (Sekaran & Bougie 2013). The researcher made use of the conceptual data analysis technique, which determines the frequency of concepts such as words in the context (Sekaran & Bougie 2013). The researcher used conceptual analysis in the interviews to examine certain concepts for example poor morale as a result of improper communication conduct by a project manager that were used repeatedly by interviewees.

3.4. Ethical Considerations

Participation in the research was voluntary and data acquired from the research was handled with absolute and appropriate confidentiality and that it deserves.

4 Data Analysis

4.1 Introduction

Research methodology brought out the method that was used to collect data on the most common issues in project management in South Africa. However, in this chapter the results that were obtained will be presented. This involves information on the participant's demography and the information obtained through semi-structured interviews. This information was analyzed through content analysis with some themes deduced there off. The results brought forth in this chapter are intended to address the objectives of the study which are:

- To ascertain the importance of planning in project management amongst some South African firms.
- To determine the importance of scheduling in project management amongst some South African firms.
- To assess the significance of monitoring resources, budgets and costs i.e. controlling in project management amongst some South African firms.

4.2 Presentation of Results

In this section, results that were obtained on the common issues in project management in South Africa from the semi structured interviews that were conducted will be presented using narrative and verbatim quotes and also demographic information of the participants will be presented in tabular form.

4.2.1 Sample demographics

This section outlines of the demographic information that relates to the employees and managers that were interviewed in this study. The study took in cognizance the following demographic variables as crucial: age range, gender, position in the organization and length of service in business. Figure 4.1 presents the demographic variables that were analyzed for this study.

Table 4.1: Sample Demographics

Participant	Age range	Gender	Position held	Length of service in business
A	31 to 40 years	Male	Finance manager	Above 10 years
B	21 to 30 years	Male	Quantity surveyor	3 to 6 years
C	Above 50 years	Female	Human resources assistant	Above 10 years
D	21 to 30 years	Male	Production supervisor	1 to 3 years
E	Above 50 years	Male	General Manager	Above 10 years
F	31 to 40 years	Female	Marketing Manager	3 to 6 years

As in Table 4.1, the demographic information of the participants is presented. The participants are represented by the letters A to F as opposed to use of their real names for anonymity reasons. The individual demographic variables are analyzed and discussed in the sections below.

4.2.1.1 Age range of participants

The age range of the participants in the sample was taken into account in this study. Difference in age ranges broadens the views due to the differing experience and maturity levels of the participants. The age groups identified that is 21 to 30, 31 to 40 and 50 years and above each had two participants.

4.2.1.2 Gender of participants

The gender was another factor considered in the study and there were four males and two females in the sample. The thinking behind gender consideration was that males and females may generally reflect on situations differently and as such there was need to take both their views on board.

4.2.1.3 Position in the organization

The participants were called upon to reveal their positions in company. In most cases as individuals go up the organizational hierarchy, the more knowledgeable they become in the organizations issues in their day to day running. The sample was made up four managers a quantity surveyor and a human resources assistant.

4.2.1.4 Length of service in business

Length of service in the organization was also a crucial factor of consideration in the study. The rationale behind this was that the more the number of years on has in the company the higher the chances of them having witnessed or partook of in many projects thus positioning them in good stead to help address the study objectives.

4.2.2 Qualitative data presentation

In this section the data collected through the semi structured interviews will be presented and also the data was analyzed to generate various themes, under which the responses are presented.

4.2.2.1 Lack of teamwork

Participants A and B highlighted that due to the strained amongst relations amongst the different functions that existed in the organizations for years, issues to do with participants in most projects pulling in different directions are prevalent. There are always conflicts for resources.

Participant A said:

'I have been in this company for a number of years and one thing that I have observed over the years with regards to projects is the lack of teamwork. It seems as if for years the relationships amongst some functions are really strained

and this always shows each time when different departments have to work together. There is pulling in all sorts of directions which in turn results in a lot of delays in whatever task at hand. At times the organization tries to involve top management but with limited success in most cases'.

This issue raised by participants is highlighted in literature by Rolstadas et al. (2014) who stated that existing working relationships across organizations puts in place ground work for nurturing a project culture based on openness, thus allowing for discussion and new ideas.

4.2.2.2 Lack of management experience and skill

Participant D mentioned lack of management skill and experience as one of the issues bedeviling project management. The same sentiments were echoed by participant C.

Participant C said:

'With the influx of graduates from college into the company, a lot of questionable appointments to project management leadership posts have occurred. This has resulted in poor project planning that at time fails to take into consideration some things like weather conditions in construction projects and also timely technical success. This causes unnecessary delays due to the unavailability of a contingency plan. They think they know it all bit a little help from the experienced could help even though they hold inferior positions in the company. Training workshops are done to address this'.

As reported by Zwikael et al. (2007), through better planning, the success of projects is enhanced on four fronts namely customer performance, satisfaction and schedule and cost overrun.

4.2.2.3 Poor communication

Participants E and F mentioned poor communication in projects handling as another issue in (PM). According to them there was no proper dissemination of information from the management group even in the sub- projects thereby resulting in lack of proper coordination in the entire project thus jeopardizing the prospects of its success. According to Rolstadas et al. (2014), if coordination is to be achieved in any endeavor, there is need for proper communication and also the holding of meetings regularly so as to keep all the stakeholders at the same wave length. This is seconded by Low et al. (2014) who posited that many a time the stakeholders priorities are compromised as a result of poor communication.

4.2.2.4 Unrealistic targets

Participant C mentioned setting of optimistic goals as another issue in (PM) Participant C said:

'As an organization it's always a good thing when you have ambitious and zealous personnel but when that zeal shifts into an element of being overzealous then we are bound to experience some challenges. With some of the younger employees being privileged to head some projects, there have been issues to do with a failure to deliver on time as a result of what I might term optimistic targets. All this is as a result of one trying to raise their profile but unfortunately it has not always worked like that'. According to Olsson (2008) too many schedules fail to take into consideration probable delays and the project manager convinces themselves that they can bring the project to fruition in time and within the stated budget.

5 Conclusion and Recommendation

5.1 Introduction

This chapter is basically concerned with coming up with conclusions and recommendations. These conclusions are drawn from literature that relates to the views that were posited by the respondents and also to the conclusions drawn from the views of the respondents on the study.

5.2 Findings from the study

This section, spells out what the study found out both in literature review and primary research with regards to the issues that are common in project management in South Africa.

5.2.1 Literature Review findings.

In this section the literature review is summarized in relation to the views that were posited by the respondents to the common issues in project management.

5.2.1.1 Lack of teamwork.

Teamwork is identified by Rolstadas et al. (2014) as an important ingredient to the success of a project. They state that teamwork fosters unity which in turn allows for the free flow of information cropping up of brilliant ideas. Also as a result of team work, they postulated that where there is teamwork there are high chances of coordination in the team. This is seconded by Orthman et al. (2010) who stated that without teamwork the moral of the staff sinks which has terrible negative effects on the project.

5.2.1.2 Lack of management experiences and skill

Project managers must be experienced and knowledgeable as stated by Alias et al.2010. They say the project manager must be aware of what is happening in the project at every stage of the project's life cycle. This comes through good planning which is a product of knowledge, experience and skill (Hashim & Chileshe 2012).

5.2.1.3 Poor communication.

Good communication plays a pivotal role in (PM) (Darren & Dalcher 2012) It ensures that information on the scope and objective is grasped well first by the project manager in their project launch meetings with stakeholders and also that the manager disseminates the information well to his subordinates. With communication everyone is kept in the loop and this is a healthy way of creating thrust in the team (Rolstadas et al. 2014).

5.2.1.4 Unrealistic targets

In planning for projects, there is need to set targets that are realistic. Project manager should look at the environment in which they are operating that is economic, cultural and even climatic so that they take the necessary precautionary measures in planning. Also this helps in coming up with contingency plans which will in turn ensure smooth cruising of the project in the face of some challenges (Meredith & Mantel 2012).

5.2.2 Findings from primary research

This section looks at the findings derived from the participant's responses with regards to the common issues in project management.

5.2.2.1 Lack of teamwork.

Two of the participants in the semi structured interviews bemoaned the lack of teamwork in the organization as a major drawback in every endeavor that the company engages in. According to them it seems as if there are some underlying ailments of resent amongst the different functions of the company which have the tendency to always rear up their ugly head each time different departments are called upon to work together.

5.2.2.2 Lack of management skill and experience

Other participants stated that the general level of experience and skill set displayed in some of the projects was appalling. This was largely ascribed to the rising number of graduates with little experience who joined the institution in considerably high numbers. Some were called upon to head some projects with the end results not being so impressive in terms of project costs, time and customer satisfaction. They also felt that these young employees were not prepared to rope in experienced members of staff due to the junior positions those experienced guys hold in the company.

5.2.2.3 Poor communication.

This was also mentioned by the participants as another issue in (PM). According to them, there was no clear flow of information which in turn was frustrating and de-motivating to the project team. Again this has the detrimental effect of stifling proper coordination in the team.

5.2.2.4 Unrealistic targets

Respondents from the semi structured interviews noted unrealistic targets as yet another issue in (PM). Some younger project managers were regarded as being overzealous and trying to raise their profiles by setting project targets that were not realistic with the end result being delay and disappointment of stakeholders.

5.3 Conclusions

This section is concerned with drawing conclusions between the views that were aired by the participants and those deduced from the literature gathered from different authors.

5.3.1 Lack of teamwork.

Some of the participants revealed lack of teamwork as an issue in (PM).there seems to be pulling in different directions each time different departments are called upon to work together. This according to them was as a result some underlying issues amongst departments date backing years ago. In light of the literature review, unavailability of teamwork was regarded as coordination, moral and new idea generation killer. In light of this it is clear that in spite of some information availability on how projects can be implemented successfully; there are some institutions that are still a long short from getting the critical aspect of teamwork right.

5.3.2 Lack of management skill and experience.

Both the literature and the respondents cited lack of skill and experience as a major crippling issue in (PM). With the requisite skill and experience levels in running projects, planning in terms of time, costs, tracking of project, handling of conflicts and designing of contingency plans is something that is marshaled to a level that assists the project's success. In light of this, it is clear that the level of experience and the skills set level of a project manager can result in issues to the project.

5.3.3 Poor Communication.

From the literature, with the proper communication everyone is kept in the loop and this is a healthy way of creating thrust in the team. Respondents from the interviews also noted the same thing. They said failure to properly transmit project information often resulted in the shrinking of team moral thus making this an issue in project management.

5.3.4 Unrealistic targets.

Respondents from the interviews cited setting of unrealistic project targets by leaders that they termed as overzealous as an issue in project management. The same sentiments are also in line with what the literature revealed also. According to the literature, project managers should consider the climatic, social and economic environment in which they operate. This in other words is referred to as the risk assessment. It was noted as critical since it helps managers to set targets while taking into consideration potential delays as a result. It is from the afro mentioned views from both the literature and answers from the respondents that one can determine or consider unrealistic targets as another project management issue.

5.4 Recommendations

This section provides recommendations on the common issues of project management so that South Africa companies may successfully implement projects. The following is a list of recommendations of this study:

- Working relationships across all the functions of a company are important and as such it is crucial to lay down a foundation aimed at fostering project culture that is dominated by openness and a platform for discussions. This will in turn lead to oneness and unit of purpose.
- Necessary skills and adequate experience should never be taken for granted in any project that an organization takes. So as such it is important to have the right project manager at the helm of a project as this helps in saving time and sticking to set budget.
- Companies should hold meetings regularly when running projects. These meetings should be for management and also within the project team. This ensures good coordination which is a contributing factor to the success of a project.
- Companies are also encouraged to track the progress of projects and communicate effectively as this builds understanding. Apart from this, there is needed to have emotional and interpersonal skills that are being able to make the correct decisions under pressing circumstances and the confidence to communicate respectfully.
- Companies should also rope in the full support of top management in any project since this will help in sufficient resource allocations (financial and also human) which are important is a project is to succeed.

5.5 Area of further study

Identification of the common issues in (PM) in South Arica and how firms can cope with this was the focus of this study. However further research can be conducted on the factors that are necessary for successful projects.

5.6 Conclusion

This study was concerned with the identification of common issues in project management in South Africa and how the companies a coping. With the ever-increasing reliance of most organizations on projects in an attempt to achieve

their goals, it was imperative to look at the issues associated with project management. The study made use of qualitative methodology on company X. non probability sampling technique was used to come up with the sample and data was gathered by using semi structured interviews.

The study identified issues ranging from poor communication, lack of management skill and experience and lack of teamwork as some of the issues in (PM). The study went on to make some recommendations such as gaining the full support of top management in project management.

References

Aarseth, W, Rolstadås, A, Andersen, B, Managing organizational challenges in global projects, *International Journal of Managing Projects in Business*, vol. 7, Issue 1, pp.103-132, 2013.

Allan, B, Juggling with fast and slow time: some of the challenges of project management, *Legal Information Management Journal*, vol. 6, issue 4, pp. 251–255, 2006.

Alias, Z, Ahmad, Z, Idris, MFM, Project management towards best practice *ASIA Pacific International Conference on Environment-Behaviour Studies* vol. 68, pp. 108 – 120, Giza, Egypt, 31 October - 2 November 2012, 2012.

Darren, M, Dalcher, H, The nature of project management: A reflection on the anatomy of major projects, *International Journal of Managing Projects in Business*, vol. 5, issue: 4, pp.643-660, 2012.

Hashim, NI, Chileshe, N, Major challenges in managing multiple project environments (MPE) in Australia's construction industry, *Journal of Engineering, Design and Technology*, vol. 10, issue: 1, pp.72-92, 2012.

Low, SP, Gao, S, Tay, WL, Comparative study of project management and critical success factors of greening new and existing buildings in Singapore, *Structural Survey*, vol. 32, issue 5, pp.413-433, 2014.

Meredith, JR & Mantel, SJ, *Project management: a managerial approach*, 8th Edition, John Wiley 7 Sons, Singapore, 2012.

Olsson, R, Risk management in a multi-project environment: An approach to manage portfolio risks, *International Journal of Quality & Reliability Management*, vol. 25, issue 1, pp.60-71, 2008.

Orthman, M, Zain, AM, Hamdan, AR, A Review on Project Management and Issues Surrounding Dynamic Development Environment of ICT project: Formation of Research Area, *International Journal of Digital Content Technology and its Applications*, vol. 4, issue 1, pp. 96–105, 2010.

Rolstadås, A, Tommelein, I, Schiefloe, PM, Ballard, G, Understanding project success through analysis of project management approach, *International Journal of Managing Projects in Business*, vol. 7, issue 4, pp.638-660, 2014.

Schwalbe, K, *Information technology project management*, 1st Edition, Course Technology, Boston, 2006.

Biographies

Khathutshelo Mushavhanamadi is currently a Lecturer and a Programme Manager in the department of Quality and Operations Management; and conducting a PhD in Engineering Management in the Faculty of Engineering and the built environment at the University of Johannesburg. She holds Certificate in Enterprise Resource Planning, Certificate in Operations Management, National Diploma in Production Management from Technikon Witwatersrand; Bachelor of Technology Degree and Masters of Technology Degree in Operations Management from the University of Johannesburg, Faculty of Engineering and the Built Environment, in South Africa. Her research interests involve Operations Management and Enterprise Resource Planning, and Quality.

Bruce Javani is currently a student for the Bachelor of Technology in Operations Management in the Department of Quality and Operations Management; in the Faculty of Engineering and the Built Environment at the University of Johannesburg in South Africa. He holds a Diploma in Business Management from the University of Zimbabwe and a

Diploma in Personnel Management from the Institute of Personnel Management Zimbabwe. His research interests involve Operations Management, Quality Management and Project Management.