AN EMPIRICAL REVIEW AND EVALUATION OF THE CAUSES OF PROJECT FAILURE

By

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DECLARATION

I hereby declare that the work contained in this independent study paper is my original work, and has not previously in part or in its entirety been presented at any other university towards the award of a degree. All materials referred to have been duly acknowledged.

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Signed ........................................................ Date. Oct 3, 2008

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<td>Agency for International Development</td>
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<tr>
<td>BS</td>
<td>British Standard</td>
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<td>CPA</td>
<td>Critical Path Analysis</td>
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<td>CPS</td>
<td>Construction Procurement Systems</td>
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<td>DOE</td>
<td>Department of Energy</td>
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<td>KEBS</td>
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<td>IT</td>
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<td>IS</td>
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<td>OFD</td>
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<td>OR</td>
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<td>PERT</td>
<td>Programme Evaluation and Review Technique</td>
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<td>PLC</td>
<td>Project Life Cycle</td>
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<td>PMI</td>
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ABSTRACT

Many organisations have embraced the concept of projects as a mechanism for delivering strategic objectives. The work of a project is transient with a defined beginning and end. This conceptual study paper is primarily a literature review in project management with the objective of identifying causes of project failures and research gaps in the area.

Project success has traditionally been defined in terms of completing the project within time, cost and quality. However, current thinking is that apart from time, cost and quality dimensions, a successful project must also create value to the organisation and stakeholders.

The study found that although most activities are being organised in terms of projects, the project failure rate is quite high. In most organisations, project failure may be attributed to lack of stakeholders’ involvement, poor project planning, inadequate communication, lack of executive support, lack of adequate resources, scope creep, poorly defined requirements, unrealistic budgets and lack of control. In addition, use of inappropriate project methodology and organisation structure contributes towards project failure.

The study identified the need for empirical research to identify and rank causes of project failures in Kenya. In addition, although the issue of leadership is one of the most researched areas in behavioural sciences there is need for an empirical study on the relationship between project performance and leadership style, project characteristics and project manager competence. Further, an empirical study on the relationship between various stakeholders and project success should be undertaken.
CHAPTER ONE

INTRODUCTION

1.1 Background

One of the most significant organisational and managerial developments in the last 10 years has been the increasing amount of project/programme activities across different sectors and industries (Winter and Szczepanek, 2007). Projects and programmes are being considered as powerful strategic weapons initiated to create economic value and competitive advantage. However, despite the importance and emphasis on projects, the rate of project failure is high ((Lyytinen and Hirschheim, 1987; Galloway and Whyte, 1989; Demarco, 1982; Gladden, 1982; Whyte and Bytheway, 1996; Standish Group, 2001; Bull survey, 1998; Jugdev and Mueller 2005).

The British Standard (BS 6079:2000) defines a project as a unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific performance objectives within defined schedule, cost and performance parameters. On the other hand, the Project Management Institute (2004) notes that a project is a temporary endeavour undertaken to create a unique product, service or results. In addition, Young (2000) defines a project as a temporary endeavour to achieve some specific objectives in a defined time. As noted by Henrie and Sousa-Poza (2005), projects include people who work cooperatively together toward a common goal, within an established time frame and budget to produce identifiable deliverables. Maylor (2005) further notes that although there is no consistent agreement as to what a project is, there exist agreements about the characteristics of a project. These characteristics include the existence of clearly defined objectives/goals, existence of a series of activities and constraints (time, technological, human, capital among others).

Young (2000) notes that in some circumstances, there may be more than one project required to achieve the required outcomes. In such instances, organisations normally embark on programmes. A programme is a collection of inter-dependent projects, managed in a coordinated manner that together brings the desired outcomes (Young, 2000). Programmes are normally phased, with target end dates of the initial phases well defined and committed. A
large number of projects or programmes are designed to help the organisation to create value or achieve competitive advantage. Value creation or attainment of competitive advantage is, however, dependent on the successful completion of the project.

The word success connotes different things to different people and is very context dependent (Jugdev and Mueller, 2005). Views on project success have changed over the years from definitions that were limited to the implementation phase of the Project Life Cycle (PLC) to definitions that reflect an appreciation of success over the entire project life cycle. The concept of success has traditionally been based on the completion of the project within time, budget and quality, the so-called “Iron Triangle” or “Golden Triangle” (Atkinson, 1999). Yeates and Cadle (2004) defines a successful project as one that delivers to the customer everything specified, to the quality agreed, on time and within cost. Based on this definition, the Standish Group (1998) classify projects into three headings:

i. Successful: these are projects that meet the above definition fully;

ii. Challenged: these are completed and operational projects which deliver less functionality and have been completed at higher cost and not within the agreed time frame; and

iii. Impaired: these projects are cancelled during the development stage.

Using the above framework, failed projects include challenged and impaired projects. Although, the iron triangle is the most commonly used project success criteria, it has received a lot of criticism for being inadequate (Wateridge, 1995; Shenhar, 2001; Gardiner, 2000). Several attempts have been made in overcoming the perceived inadequacies. For instance, an IT project success framework developed by Atkinson (1999) suggested four success criteria namely project performance (cost, time and quality), information system (IS), benefits for the client organisation and benefits for the stakeholders. However, Karlsen and Gottschalk (2003) added a fifth success criterion focusing on system implementation. However, according to the Project Management Body of Knowledge (PMBOK) guide, project success criteria include the golden triangle and satisfaction of key project stakeholders (Project Management Institute, 2004).

Project success is strongly related to the perceptions of each individual project stakeholder and their willingness and ability to act either for or against the project (Jugdev and Mueller, 2005;
Young, 2000; Gottschalk, 2003). Yeates and Cadle (2004) define stakeholders as individual or groups that are affected by the activities of an organisation. Stakeholders can be internal or external to the project and have different stakes. Since stakeholders are so critical in projects, one of the key roles for a project manager is to agree with the stakeholders on a clear set of success criteria for the project. This is however, complicated by the fact that stakeholders have different stakes that may at times be in conflict. Johnson and Scholes (1999) notes that the importance of each stakeholder can be determined through the use of power and interest matrix. The position of the stakeholder within the power and interest matrix may help in the design of appropriate stakeholders management strategies.

The use of projects in organisations has resulted in the development of project management field of theory and practice that is becoming distinct from general management (Maylor, 2005; Cleland D.I and Ireland L. R, 2002). Chase et al (2001) defines project management as the process of planning, directing, and controlling resources (people, equipment, material) to meet the technical, cost and time constraints of the project. On the other hand, Young (2000) notes that project management is a dynamic process that utilises the appropriate resources of the organisation in a controlled and structured manner to achieve some clearly defined objectives identified as strategic needs. The objective of project management is to ensure successful completion of projects. However, Young (2000) notes that project management competencies and skills alone are no guarantee to success. For a project to be successful, good climate has to be present as well as active involvement of all stakeholders. The organisation climate may be influenced by several integrated elements that include organisation culture and structure, business strategy and project infrastructure. Thus, implementation of projects requires good knowledge of project management (Maylor 2005; Cleland D.I and Ireland L. R, 2002) and an appropriate structure and culture (Young, 2000).

1.2 Justification for the Study
Jugdev and Mueller (2005) notes that for the past 50 years, projects have continued to fail in their efforts to achieve time, budget and deliverable criteria. For instance, in Information Technology (IT) projects, it is widely accepted that an unacceptable number of projects fail (Biggs, 2000; Whyte and Bytheway, 1996). Various estimates show persistently that half of all systems fail (Lyytinen and Hirschheim, 1987; Galloway and Whyte, 1989), while others argue
that more systems fail than succeed (Demarco, 1982; Gladden, 1982; Whyte and Bytheway, 1996; Bull survey, 1998; Jugdev and Mueller 2005). Further, a study by the Standish Group found that only 28 percent of IT projects were completed on time and on budget, and that IT projects were on average, 45 percent over original cost estimates and 63 percent over original time to completion estimates (Standish Group international, 2001). Moreover, Lunduquist (2005) notes that project failure rate is same for big projects as for the small projects.

A review of literature indicates a high rate of failure for projects in both public and private sector. However, for those in the private sector, project information is not readily available as is the case with public projects. Examples of failed projects in Kenya are many and includes nyayo car project, construction of National Youth Service houses, construction of Karatina-Nyeri road and stalled construction of halls of residence in public universities. Outside Kenya, examples include the London Ambulance Service, Taurus system for the London Stock Exchange, CONFIRM online reservation system and Tiptree Company Warehousing System. Although project failure may not be as castrophic as a natural disaster, project failure results in wastage of huge amounts of resources, negative reputation and sacking of some of the people involved in the project, deterioration of internal climate as well as negative publicity of external professionals involved in the failed project (Goulielmos, 2005; Jugdev and Mueller, 2005). Given the high rate of project failure, the impact of project failure and the emphasis on project management across different sector, there is need to understand the causes of project failure as a way of increasing success rate in the implementation of future projects.

The purpose of this conceptual independent paper was to provide a consolidated list of the major causes of project failure. The causes have also been ranked and researchable areas identified. The ranked list would help project managers and other stakeholders to concentrate their efforts on critical areas during project undertaking.

1.3 Objectives of the Study
The specific objectives of the study were to:

i. Identify the major causes of project failure;

ii. Establish the relative importance of the major causes of project failure; and

iii. Identify researchable issues in the area.
1.4 Study Design and Methodology
An iterative desk survey of empirical and theoretical literature on causes of project failure was conducted. Causes of project failure were identified through content analysis of each of the articles reviewed. The relative importance of the identified causes of project failure was determined by counting the number of times each factor appeared in each of the thirty articles reviewed. Further, content analysis of the reviewed articles helped in the identification of research gaps and researchable issues.

1.5 Importance of the Study
This study is expected to be useful to various stakeholders including:

Project managers: The outcomes of this study will provide project managers with a clear picture of the causes of project failure. The project managers will be better prepared to take remedial measures in order to prevent same problems from recurring when planning for new projects.

Top management: Since activities in most organisations are being organized in form(s) of projects or programmes, the outcomes of the study will provide top managers with information that may enable better management of project execution. Thus, the results of the study will provide information that may ensure high project success rates in the future.

Academicians and researchers: This being an emerging area, the findings of this study will add more knowledge in the area of project management. The study may act as a stimulus for further research in the area.

Government and development partners: The Government and development partners are the major financers of projects in the public sector. Identification of ranked causes of project failure will provide information that could enhance project performance in the future. This will in turn ensure optimal use of scarce resources.
Schmitt and Koter (1978) investigated management’s role in IS development failures. They analysed the causes of project failure through a case study of a state planning agency, a project in which they were personally involved. The project was considered a failure in that the planning agency did not use the outputs of the project to do land use planning and the fact that several personnel left the project due to frustration caused by the liability to change the course of events. They found that management role has a part to play in project success or failure. Further, compared to other projects, IS projects require a higher degree of management attentions than for example construction in that for IS projects, goals, products and the creative demand on the personnel are based on abstractions. They identified specific causes of failure as existence of inactive decision maker, contract deficiencies, lack of project control, poor relationship management, poor system analysis and abortive decision process. Their conclusion were similar to those of Morgan and Soden (1973) that most failures are due to management’s inability to control, organize and plan.

Prabhakar (2005) carried out an empirical study on the issue of transformational leadership and project success using a sample size of 153 projects across 28 nations. The study was organized in two phases; 46 projects from 14 nations were studied in phase 1 while in phase II, 107 projects from 25 nations were examined. The combined response rate was 24 percent. Results of regression analysis showed that 51.7 percent of variance in project success is due to the number of years of project experience, relationship orientation, teams understanding of the technology required to accomplish specific technical actions and project manager’s leadership and management style. The results of the study also showed that there exists a relationship between switches in leadership style and high success level on a project. In addition, time has an implication on the leadership style adopted within a project.

Goulielmos (2005) applied his 2003 Organizational Failure Diagnosis (OFD) model to the study of IS failure. The OFD model has five elements namely stakeholder values, organisational efficacy, appropriate approach, systems change and mode of intervention. The model was applied to 14 cases of IS failure. The model proved useful in showing key areas
that may cause IS failure. These issues relates to technical, people, management, communication and stakeholders involvement. The results of the study showed that organisational health is a critical factor for any organisation that intends to embark on any project. However, he found that IS development is more complex and technical for OFD to explain all facets of failure.

In 2004, Henrie and Sousa-Posa undertook a cultural literary review within the leading project management peer review journals (the International Journal of Project Management and Project Management Journal) and published project management books. They conducted a review of 770 journal articles and 93 books. They found out that knowledge and awareness of culture is important for project management. Their finding was in-line with Hofstede (1997) who stated “........It is important for the managers and members of a complex organization to know its culture map....” Although culture is so critical to project management, they also found that the percentage of culture-related articles has remained constant over the years and that empirical-based project management culture research continues to be limited.

Standing et al (2006) studied how IT professionals attribute success and failure in IT projects. Five hundred questionnaires were administered to IS/IT personnel involved in the delivery of IT projects in Australia. A total of 116 responses were received (23.2 percent response rate). The results showed that the top five reasons or causes for IT project failure are lack of user support and commitment, imprecise defined objectives, inadequate knowledge of the IT projects, and poor project management and leadership. Overall, 68.9 percent of the respondents believed that the cause of the project’s failure had something to do with them (internality). However, critical analysis showed that professionals in the IT field do not attribute success and failure the same way. For instance, IT support staff attribute success more to themselves than other employees, but did not attribute failure to themselves. Executives, on the other hand, attributed a significant amount of failure to themselves but success to external factors. Line managers attributed a significant amount of responsibility for success and failure to themselves. The findings by Standing et al (2006) were, however not related to the specific job tasks completed by the various participants within the project as the study was concerned with overall success or failure of a project and not their specific task in that project.
In 1998, the French computer manufacturer and systems integrator, BULL, launched a survey ("The Bull Survey, 1998") of the causes of IT project failure in the UK. A total of 203 telephone interviews were conducted with IT and project managers from finance, utilities, manufacturing, business services, telecoms and IT services sectors in the UK. The study identified missed deadlines (75 percent), exceeded budget (55 percent), poor communications (40 percent) and inability to meet project requirements (37 percent) as the main IT project failure criteria. Based on the identified main IT project failure criteria, causes of project failure were identified. The major causes of project failure identified in the study includes poor communications (57 percent), a lack of planning (39 percent), poor quality control (35 percent), inadequate co-ordination of resources (29 percent) and mismanagement of progress (20 percent).

Chulkov et al (2005) studied cases of IT failures by applying the bandit problem model to three projects from different areas namely public projects (Denver International Airport), financial markets (Taurus) and computer equipment sales (Config). The bandit problem is concerned with a single decision maker making choice between several alternative projects. The application of the bandit problem was based on the fact that many IT projects satisfy the requirements of a bandit process in that they deal with choice of technologies in which only the best option is selected. Further, success of any project selected is unknown in advance and the firm has only the belief on the likelihood of success. Although each of the projects exhibited a high maximum potential for reward and a high degree of risk, each of the three projects were terminated after persistent negative feedback and a low technological, low risk alternative implemented with success. The results of the study revealed that the high failure rate in IT projects may be attributed to high proportion of risky projects being adopted.

Bates (1998) notes that a win-win outcome for all is the ultimate goal in any project. However, experience shows that when win-lose strategies and tactics are employed by one or more stakeholders to gain an advantage over other players, a lose-lose situation occurs. One strategy of ensuring success is through partnering. Partnering in projects is based on trust, open and honest communication, commitment to shared goals and an understanding of the expectations and values. Partnering in projects brings about improved efficiency and effectiveness, increased opportunity for innovation in problem solving and continuous improvement of
quality products and services for all stakeholders. Collaborating in small construction projects brings project stakeholders closer together and facilitates co-operation when dealing with routine contract administration, which increases the chance of providing stakeholders with successful results.

In 1996, Mwadali undertook an investigation of major factors that affect project management by analysing 40 large projects at Kenya Railway. The study identified poor communication, inadequate experience of the project manager, delayed procurement of equipment, ineffective monitoring and controlling systems, lack of personnel motivation, lack of training for project managers and slow project selection methods as the major factors affecting project success. In addition, lack of top management support was also identified as a critical factor.

Kibiku (1998) studied the relationship between project appraisal results and post implementation results for Kenya Posts and Telecommunication Corporation (KP&TC). Using simple random sampling technique, a sample of 35 projects were selected and studied. The study revealed the existence of a relationship between project appraisal results and post implementation results. However, the relationship was not a prefect match due to a number of factors among them lack of planned operations and maintenance, lack of proper coordination and control, external environment and existence of bureaucratic procedures.

Karlsen, J.T. and Gottschalk (2003) undertook an empirical study on the impact of knowledge transfer mechanisms on IT projects in Norway. They used a sample of 1072 companies selected from the listing of members in the Norwegian Computing Society. However, only 1,050 questionnaires reached the intended recipients. The response rate for the study was 6.5 percent as only 71 questionnaires were returned. In the study, dimensions of IT project success used were project performance, project outcome, system implementation, benefits for the client organization and benefits for the stakeholders. They found that project success is positively related to the extent of knowledge transfer. Thus, project success is dependent on level of project team experience and the level of experience sharing. The implication of this finding is that organisations should not replace the members in the project without careful considerations.
Gowan, J. A. and Mathieu, R. G. (2005) administered 2,773 questionnaires to persons responsible for system upgrade projects within their firm. The study was designed to investigate the relationship between two IS project characteristics (technical complexity and project size), and two formal project management practices (project methodology and outsourcing completion). A total of 449 usable surveys were returned. The results of the study showed that technical complexity and project size do not directly affect completion of the project on the due date. Thus, neither size or project complexity can be used as a predictor of IT project performance. The outcome was in conflict with other studies (Standish Group International, 2001; Brown et al, 1998) who had argued that the failure rate is high among large, complex IT projects. Further, they found that the use of formal project methodology facilitates successful completion of a project on its projected target date.

Ndulu (2004) studied the causes of information systems failure among the Microfinance Institutions (MFIs). Questionnaires were administered to 37 MFIs out of the 44 registered MFIs by then. The response rate for the study was 81 percent. The results of the study identified financial constraints, inadequate managerial support and leadership, unavailability of appropriate software, unreliable telecommunication systems, poor training, poor documentation, use of inappropriate system development processes and changing operational policies and procedures as the main causes of IS failure.

Karlsen et al (2002) investigated the emphasis placed on different managerial roles of IT executives and IT project managers by applying Mintzberg’s classic role model. The study was dividend into two surveys. In the first survey of IT executives, a sample of 673 companies were selected from the listing of members of the Norwegian Computing Society. A total of 128 responses were received (19 percent response rate). The second survey focused on IT project managers with 591 questionnaires administered. 80 questionnaires were received back representing a response rate of 14 percent. The survey results showed that IT project managers emphasize leader and resource allocator as the most important roles, while IT executives give highest priority to the spokesperson and leader roles. Thus, IT project managers are significantly more internally oriented than IT executives. The researchers, however had a caution on the generalisation of the results in that contingent factors such as organization size,
industry, project size and characteristics, and personnel characteristics were not considered in the study.

Christenson and Walker (2004) examined the role of vision in project success. Using four case studies (one successful, one unsuccessful and two in which one of the authors was involved) they argued that project vision is a significant contributing factor to project success. Further, they argued for a link between development of an effective project vision and transformational management.

Rwelamila et al (1999) studied the issue of African project failure syndrome by analyzing the Botswana public building sector and eight other Southern Africa Development Community (SADC) countries. Relevant information was obtained from construction firm executives, contract managers, site managers, trade foremen and skilled tradespersons. In addition, senior technical officers of public works ministries from eight other SADC countries were interviewed (Tanzania, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland and Zambia). The study found that in the majority of public building projects, no project characteristics are identified and hence inappropriate Construction Procurement Systems (CPSs) are used. This leads to situations where internal clients feel neglected and unimportant for project success. The study also identified the need to identify and understand the project clients as well as the selection of an appropriate CPS as a way of enhancing project success.

Ambata (2007) applied stakeholder approach to training programme evaluation. A total of 79 questionnaires administered to Kenya Bureau of Standards (KEBs) stakeholders, out of which 72 were received back. The study highlighted the importance of involving stakeholders in programme evaluation as a way of enhancing success.

Matta and Ashkenas (2003) studied the issue of why good project fails. They found that, although managers use project plans, timelines, and budgets to reduce execution risk (the risk that designated activities will not be carried out properly), they inevitably neglect two other critical risks. These risks are the white space risk (that some required activities will not be identified in advance, leaving gaps in the project plan) and the integration risk (that the disparate activities will not come together at the end). To ensure project success, they advocate
for the need to inject into the overall plan a series of mini-projects (rapid results initiatives) each staffed with a team responsible for a version of the hoped for overall result in miniature and each designed to deliver its results quickly.

Biggs (1978) tested the application of the Vroom leadership model in helping Management Information Systems (MIS) project manager select the most appropriate decision making process given a particular set of relevant circumstances. The application of the model was based on behavioural science research findings that managers can be more effective by adapting their leadership style (including the decision making process) to fit the circumstances surrounding the decision to be made. Further, the use of the model was because project success is dependent on getting the project team members involved in solving the current problem as well as getting them to accept decisions made. The model was tested on several decision problems facing a hypothetical MIS project team leader. The study found that the Vroom model provides a simple and systematic way to assess issues contingent upon the decisions. Further, the model focuses the project manager’s attention on issues and helps in choosing a decision process, which minimizes disruptive behavioural problems within the project.

In 1979, Houlden wrote a paper on some aspects of managing Operation Research (OR) projects. The paper was based on his experiences as team member, project leader and director of a large OR group, observation of the performance of several OR groups and as a user of OR in the position of part-time director of several companies. He alluded that the success of OR projects is dependant among others on clear project objectives, finding the right sponsor, understanding the sponsor, availability of management skill at the project leader level and good presentation of recommendations.

Finsterbusch and Van Wicklin III (1989) studied the impact of beneficiary participation in development projects. They used 52 Agency for International Development (AID) projects to examine whether and how participation contributes to project success. They were also concerned with the determination of conditions that encourage participation. Key findings of the study were as follows: first, participation in development projects improves project success and second, they found that the impacts of participation differ significantly by type of project.
and the societal context. Thus, participation is highly effective in some contexts, moderately effective in some contexts and inconsequential in others. Thirdly, the nature of beneficiary organization appears to increase the amount of participation, build community capacity, and lead to more local control/ownership. Fourthly, decentralized and non-authoritarian culture tends to facilitate beneficiary participation in projects.

Greenberg M. et al (2002) explored the effect of external parties on the direction and cost of the U.S Department of Energy (DOE) stewardship programmes. Through the analysis of DOE stewardship programs, the author found that pressures from one or more external parties have the power to divert stewardship programme focus from long term to short term. In addition, non-involvement of external parties can lead to cost escalation. Further, internal factors that may lead to cost escalation were identified as unclear project goals and objectives, unclear changing command, inability to anticipate and respond to changes as project evolves, inadequate monitoring and control of schedules. Unanticipated event changes, unclear local regulations and procedures, and existence of hostile public groups were identified as some of the external factors that may result in cost escalation.

Bryde and Robinson (2005) investigated the issue of client and contractor perspectives on project success criteria. The main objective of the study was to find out whether differences exist in the emphasis placed on project success criteria by respondents involved in projects as client and those involved as contractor. A total of 1,200 United Kingdom organizations were involved in the study. The project success criteria considered in the study were minimizing project cost, satisfying the customer’s needs, minimizing the project duration, meeting the technical specification and satisfying the needs of stakeholders (other than the customer)). The results of the study showed that there is a difference in the emphasis placed on project success criteria (minimizing project cost, minimizing the project duration and satisfying the needs of stakeholders (other than the customer)) between the client and contractor. However, there was no difference in project success criteria of satisfying the customer’s needs and meeting the technical specifications within the two groups. Outcomes of this study explain the divergent views that may exist concerning project outcome.
Mazur A. and Boyko E. (1981) studied the issue of project success and failure by analyzing five big oceanographic research projects (three successful and two unsuccessful) each involving many scientists from multiple institutions and disciplines. They found that the factors important for project success are existence of a good research question, availability of productive scientists, existence of an appropriate organization structure, relationship with the sponsor, the quality of scientific leadership, communication barriers across disciplines and institutions, personality mesh of participants and the effectiveness of administrative coordination.

Hoegl and Gemuenden (2001) studied the issue of Team Work Quality (TWQ) and the success of innovative projects. The study involved 575 team members, team leaders and managers of 145 German software companies. In the study, TWQ was considered as a comprehensive concept of collaboration in teams. The study used six facets of TWQ construct namely communication, coordination, balance of member contributions, mutual support, effort and cohesion. In the study, success of innovative projects was described based on people related outcomes (team member satisfaction, learning) and task related outcomes (quality, adherence to budget and schedule). The study results showed that the quality of collaboration in teams can be captured through the six facets of TWQ. In addition, TWQ was found to be significantly related to project success. The magnitude of the relationship between TWQ and team performance was found to be influenced by the perspective of the rater (team member versus team leader versus manager).

Karimi (1998) carried out a study on factors, which are critical in project cost overruns. The study involved 32 project participants from the ministry of water resources. Results of the study identified major reasons for cost of overruns as adverse external environmental conditions (politics, pressure from interest groups, inflation and nature), project definition (scope, specifications and schedules), project management (inadequate use of project management tools, monitoring and control) and infrastructure and logistics. Further, although the author acknowledges that corrupt practices have been known to contribute to cost overruns, the issue of corruption was not investigated. Other factors identified include: vandalism, extra works and claims and poor communication. The study, however assumed that
there is no relationship between project size and cost overrun as well as between location and cost overrun.

Musa (1999) studied factors that influence project delays by studying water projects completed between 1993 and 1998. The study comprised of 57 projects. The study identified quality of project management operating environment, motivation of workers, infrastructure, inadequate resources and organization of the project team as major factors that contributes towards water project delays.

Kagiri (2005) investigated the issue of time and cost overruns in power projects in Kenya. The study involved 41 project participants and data from four KenGen power projects. Out of thirty-three factors identified as significant in contributing to time and cost overruns, eight key factors were extracted using factor analysis. These factors were contractor inabilities, improper project preparation, resource planning, interpretation of requirements, works definition, timeliness, government bureaucracy, and risk allocation. The study also noted the likelihood of these factors recurring on KenGen’s future projects if the issues are not properly addressed. Government bureaucracy was identified as the most significant factor whereas risk allocation is the least significant contributor to overruns.

Diallo and Thuillier (2005) studied the impact of trust and communication on project success by analysing international development projects in Africa. A total of 600 questionnaires were administered to project coordinators. Ninety-three questionnaires were received back representing a response rate of about 15 percent. The study found that trust and communication are inseparable and are critical factors in relation to project success. In addition, the study found that although communication within a project can be undertaken electronically, there is need for face-to-face communication as it enhances trust within the project. Thus, project managers and key stakeholders require joint site visits as a way of reinforcing trust and common purpose.

Assaf and Al-Hejji (2006) investigated the causes of delay in large construction projects in Saudi Arabia. The study involved 23 contractors, 19 consultant and 15 owners of 76 private and public construction projects. Seventy-three causes of delay were identified during the
study. These factors were, however clustered into nine groups based on the source of the problem namely nature of the project, owner, contractor, design, materials, equipment, consultant, labour and external related issues. The study found that 76 percent of the contractors and 56 percent of the consultants believe that the average time overrun is between 10 percent and 30 percent of the original duration. On the ranking of the causes of delay, there was an agreement between each of the two groups with spearman rank correlation coefficient being 56.8 percent for owners and contractors, 72.4 percent for owners and consultants and 66.4 percent for contractors and consultants.

Sambasivan and Soon (2007) investigated the causes and effects of delays in Malaysian construction industry. Two hundred questionnaires were administered to project clients, consultants and contractors. Convenience and snowball sampling techniques were used in the study. The 10 most important causes of delays identified were contractor’s improper planning, contractor’s poor site management, inadequate contractor’s experience, inadequate client’s finance and payments for completed work, problems with sub-contractors, shortage of materials, inadequate labour supply, equipment availability and failure, lack of communication between parties and mistakes during the construction stage. The study also identified time overrun, cost overrun, disputes, arbitration, litigation and total abandonment as the major consequences of project delays.

Brown et al (2007) studied the relationship between human capital and time performance in project management through the analysis of 15 projects selected from the UK and 13 projects from Saudi Arabia. The objective was to evaluate the relative importance of human capital as a causal factor influencing project time performance. They found that project time performance improves with increased investment in human capital. The study confirmed that education and training of project managers is critical in influencing project success.

Table 1 gives a summary of each of the articles reviewed in terms of researcher(s) involved, sample size and the key findings.
<table>
<thead>
<tr>
<th>Researcher</th>
<th>Sample</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schmitt and Koter (1978)</td>
<td>A case study of a state planning agency</td>
<td>Existence of inactive decision maker, contract deficiencies, lack of project control, poor relationship management, poor system analysis and abortive decision process are the major causes of project failure.</td>
</tr>
<tr>
<td>2. Prabhakar (2005)</td>
<td>153 projects across 28 nations</td>
<td>Leadership and management style, team’s experience and understanding of requisite technology, and relationship management are some of the factors that influence project outcomes.</td>
</tr>
<tr>
<td>3. Gouielmes M (2005)</td>
<td>14 failed projects</td>
<td>Organizational health, stakeholders values, organizational efficacy, use of appropriate approach, system change and mode of intervention are critical factors in ensuring project success</td>
</tr>
<tr>
<td>4. Henrie and Sousa-Posa (2004)</td>
<td>Review of 770 journal articles and 93 books</td>
<td>Knowledge and awareness of culture is important in project management. Culture related research in project management is limited.</td>
</tr>
<tr>
<td>5. Standing et al (2006)</td>
<td>Five hundred questionnaires administered to IS/IT personnel involved in the delivery of IT projects in Australia</td>
<td>Highlighted five top causes for IT project failure as lack of user support and commitment, imprecise defined objectives, inadequate knowledge of the IT projects, and poor project management and leadership.</td>
</tr>
<tr>
<td>6. BULL (1998)</td>
<td>A total of 203 telephone interviews were conducted in UK.</td>
<td>Causes of failure identified in the study include poor communications, lack of planning, poor quality control, inadequate co-ordination of resources and mismanagement of project progress.</td>
</tr>
<tr>
<td>7. Chulkov et al (2005)</td>
<td>Three public projects.</td>
<td>High failure rate in IT projects may be due to implementation of high proportion of risky...</td>
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<tr>
<td>Researcher</td>
<td>Sample</td>
<td>Key findings</td>
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<td>9. Mwadali (1996)</td>
<td>40 large projects at Kenya Railway.</td>
<td>Lack of top management support, poor communication, inexperienced project manager, delayed procurement of equipment, ineffective monitoring and controlling systems, low motivation level, lack of training for project managers and slow project selection methods are the major factors affecting project success.</td>
</tr>
<tr>
<td>12. Gowan, J. A. and Mathieu, R. G. (2005)</td>
<td>2,773 questionnaires administered to persons responsible for system upgrade projects within their firm.</td>
<td>Technical complexity and project size do not directly affect completion of the project on the due date. The use of formal project methodology facilitates successful completion of projects on projected target date.</td>
</tr>
<tr>
<td>13. Ndulu (2004)</td>
<td>37 MFIs</td>
<td>Financial constraints, inadequate managerial support and leadership, unavailability of appropriate software, unreliable telecommunication systems, poor training, poor documentation, use of inappropriate system development processes and changing operational policies and procedures were identified as the main causes of IS failure.</td>
</tr>
<tr>
<td>14. Karlsen et al (2002)</td>
<td>1,264 questionnaires administered.</td>
<td>Various people involved within a project emphasis different aspects. For instance, the study found that IT project managers emphasize</td>
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<tr>
<td>Researcher</td>
<td>Sample</td>
<td>Key findings</td>
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<tr>
<td>15. Christenson and Walker (2004)</td>
<td>Four case studies.</td>
<td>leader and resource allocator as the most important roles, while IT executives give highest priority to the spokesperson and leader roles.</td>
</tr>
<tr>
<td>16. Rwelamila et al (1999)</td>
<td>Case study of Botswana public building sector and eight other SADC countries</td>
<td>Poor relationships between project stakeholders and inappropriate systems are a major cause of project failure.</td>
</tr>
<tr>
<td>17. Biggs (1978)</td>
<td>Vroom model applied to several decisions problems</td>
<td>Vroom model holds in project management and that leadership style has an impact on project success.</td>
</tr>
<tr>
<td>18. Houlden (1978)</td>
<td>Personal experiences</td>
<td>Existence of clear project objectives, finding the right sponsor, understanding the sponsor, good presentation of recommendations and availability of management skills is critical for project success.</td>
</tr>
<tr>
<td>19. Finsterbusch and Van Wicklin III (1989)</td>
<td>52 AID projects</td>
<td>Beneficiary participation improves project success. However, contextual factors affect level of beneficiary participation.</td>
</tr>
<tr>
<td>20. Bryde and Robinson (2005)</td>
<td>1,200 organizations</td>
<td>Some differences exist between clients and contractors on project success criteria. These differences have an impact on the stakeholders’ perception of project success.</td>
</tr>
<tr>
<td>22. Mazur A. and Boyko E. (1981).</td>
<td>Five big oceanographic research projects.</td>
<td>Existence of a good research question, availability of productive scientists, existence of an appropriate organization structure, relationship with the sponsor, the quality of scientific leadership, communication barriers</td>
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<tr>
<td>Researcher</td>
<td>Sample</td>
<td>Key findings</td>
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<tr>
<td></td>
<td></td>
<td>across disciplines and institutions, personality mesh of participants and the effectiveness of administrative coordination are critical for project success.</td>
</tr>
<tr>
<td>23. Hoegl and Gemuenden (2001).</td>
<td>575 team members from 145 German software companies.</td>
<td>Teamwork Quality was found to be significantly related to project success.</td>
</tr>
<tr>
<td>24. Karimi (1998).</td>
<td>32 project participants from the ministry of water resources.</td>
<td>Adverse external environmental conditions (politics, pressure from interest groups, inflation, nature), project definition (scope, specifications and schedules), project management (inadequate use of project management tools, monitoring and control), lack of appropriate infrastructure and logistics were identified major reasons for cost overruns. Other factors identified include vandalism, extra works and claims, and poor communication.</td>
</tr>
<tr>
<td>25. Musa (1999)</td>
<td>57 water projects</td>
<td>The study identified quality of project management operating environment, motivation of workers, inappropriate infrastructure, inadequate resources and organization of the project team as contributors to project delays.</td>
</tr>
<tr>
<td>26. Kagiri (2005)</td>
<td>Four project data and 41 project participants</td>
<td>Contractor’s inabilitys, improper project preparation, resource planning, misinterpretation of requirements, works definition, timeliness, government bureaucracy, and risk allocation were identified as the major contributors to project time and cost overruns. Government bureaucracy was ranked as the most significant factor whereas risk allocation is the least significant contributor to overruns.</td>
</tr>
<tr>
<td>Researcher</td>
<td>Sample</td>
<td>Key findings</td>
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<tr>
<td>27. Diallo and Thuillier (2005)</td>
<td>Ninety three project coordinators involved in the study</td>
<td>Trust and communication were identified as major determinants of project success. In addition, face-to-face communication was found to enhance trust within the project.</td>
</tr>
<tr>
<td>28. Assaf and Al-Hejji (2006)</td>
<td>Contractors, consultants and owners of 76 private and public construction projects participated in the study.</td>
<td>Investigated the causes of delay in large construction projects. Identified sources of delay include the nature of the project, owner, contractor, design, materials, equipment, consultant, labour and external related issues.</td>
</tr>
<tr>
<td>29. Sambasivan and Soon (2007)</td>
<td>Two hundred questionnaires were administered to project clients, consultants and contractors in Malaysian construction industry</td>
<td>The ten most important causes of delays identified were contractor’s improper planning, contractor’s poor site management, inadequate contractor’s experience, inadequate client’s finance and payments for completed work, problems with sub-contractors, shortage of materials, inadequate labour supply, equipment availability and failure, lack of communication between parties and mistakes during the construction stage. The study also identified time overrun, cost overrun, disputes, arbitration, litigation and total abandonment as the major consequences of project delays.</td>
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</tbody>
</table>

Source: Various empirical studies

Emerging from the literature reviewed, various factors are responsible for project failure in different projects. These factors include lack of stakeholders’ involvement, poor project planning, inadequate communication, lack of executive support, lack of adequate resources, scope creep, poorly defined requirements, unrealistic budgets and lack of control. The uses of inappropriate project methodology and organisation structure were also identified as factors contributing to project failure.
CHAPTER THREE

RESEARCH METHODOLOGY

This conceptual study paper is primarily a literature review in the area of project management with the objective of determining and evaluating the major causes of project failure. An iterative desk survey of literature on causes of project failure was conducted. The iterative process allowed articles being reviewed to lead to other articles to be reviewed. Thus, each article built upon and added data and enlightenment in a continuous process of data gathering on the issue of project failure.

The study entailed the review of academic journals that touches on the area of project success and failure. In addition, books on project management and other non-academic journals were reviewed since the issue of project failure cuts across various disciplines. The reviewed articles included those from the International Journal of Project Management, Project Management Journal, Federal Facilities and Environmental Journal, Journal of Management in Engineering, Social Studies of Science Journal, Journal of Computer Information Systems, Disaster Prevention and Management Journal and, Engineering Construction and Architectural Management Journal.

Content analysis methodology was used on each article reviewed. For each article reviewed, causes of project failure were identified, noted and summarised. Table 1 gives a summary of each of the articles reviewed, while Figure 1 is a representation of the major causes of project failure, which are discussed in chapter four. For objective two, the causes of project failure were ranked according to the frequency in which each of the factors was mentioned in the thirty empirical studies reviewed. Table 2 in chapter four provides a ranking of these factors based on their frequencies. Researchable areas were identified through analysis of research gaps in each of the articles reviewed.
CHAPTER FOUR

CONCLUSIONS

4.1 Causes of project failure
The study identified 12 major causes of project failure. Irrespective of project type, project failure can be attributed to lack of stakeholders’ involvement, poor planning, poor communication, lack of executive support, lack of resources, scope creep, poor requirements, lack of control, unrealistic budget project leadership, organisation structure and project methodology. An explanation for each of the cause is as follows:

4.1.1 Lack of Stakeholders’ Involvement
Project success or failure is strongly related to the perceptions of each individual project stakeholder and their willingness and ability to act either for or against the project. Although the perceptions may not necessarily be logic based, the quality of the relationship between the project and its stakeholders is critical. For a project to succeed, stakeholders’ involvement is important as they have an effect on project’s objectives, resources, scope, success criteria, and control. Further, stakeholders’ support ensures project’s sustainability once implemented. The support also helps to reduce resistance during project execution.

4.1.2 Poor Planning
Project success is dependent on execution of a well thought-out plan. However, most projects lack detailed plans. This may be attributed to the fact that some people view planning as a waste of time, which could be better spent on project execution. Poor plans affects communication between the various parties involved, availability of resources, flow and control of project activities, and overall coordination of the project. To ensure successful completion, detailed project plans must be prepared and followed through out the project.

4.1.3 Poor Communication
Projects sometimes fail due to poor communication. Since there are various parties involved in a project, there is need for a communication strategy that ensures effective internal and external communication. Effective communication will, among others, ensure effective flow of information regarding objectives, activities to be undertaken, specifications, methods to be used, perceptions of the various parties involved in the project and milestones. Effective
communication also enhances the chances of success through coordination of the project activities.

4.1.4 Lack of Executive Support
Projects are about change and like any other change initiative, top executive support is necessary for a project to succeed. Senior management involvement and support creates the required culture and trust among the stakeholders. In addition, top management involvement ensures clarity of the project objectives, availability of resources and reduction of resistances during project execution. Thus, active involvement of the top executives increases the likelihood of the project success.

4.1.5 Lack of Resources
Most projects require enormous amounts of resources. Non-availability of these resources or delays in the procurement of these resources results in projects being late or annulled. Further, for some projects, although the resources are available, they may be quite expensive thus overshooting the project cost. For a project to succeed, an elaborate resources procurement system is required to ensure availability of the resources that meet the specifications, at the right time and cost.

4.1.6 Scope Creep
Failure in some projects may be attributed to scope creep. Scope creep refers to uncontrolled and unexpected changes in project requirements as the project progresses. With scope creep, a series of small changes (none of which appears to affect the project individually are introduced), can accumulate to have a major overall impact on the project success. For instance, although the project requirements might be changed, there may be no increase in resources (time, people, budget) resulting in project delay or termination. Managing scope creep is thus one of the most critical activities for the project manager if a project is to succeed.

4.1.7 Poor Requirements
In some projects, goals, objectives and vision may not be clear due to lack or existence of poorly defined requirements. Projects with poorly defined requirements have problems in co-
ordination, scope creep, definition of resource requirements (time, cost, and people), and measurement of success.

4.1.8 Lack of Control
Successful completion of a project requires existence of a control system that is capable of tracking project progress to milestones. Tracking of project progress enhances implementation of corrective actions as a way of ensuring project success. Lack of control mechanism results in project being delayed, over budgeted and not meeting specifications. To succeed, there is need for monitoring and control mechanism in all projects.

4.1.9 Unrealistic budget
Related to poor requirements and planning is the issue of unrealistic time and cost budget. In some projects, time and cost budgets are set without due consideration to work volume that needs to be undertaken. Consequently, the project is declared as a failure since it cannot be completed within the set time and cost.

4.1.10 Project Leadership
The success of any project is contingent upon good leadership. The leadership style adopted by a project manager toward the team has a major impact on project performance in the areas of overall cost, time, quality of work, and stakeholders’ satisfaction.

4.1.11 Organisation Structure
Projects, like any other organisational activity, require an appropriate organisation structure for successful implementation. The project structure may impact negatively on project team motivation, efficiency, communication and roles conflict among others. The selection of an appropriate structure must be on a contingent basis and should take into consideration the size of the project, technology to be used, size of the organization, potential resource conflict and the needs of the organization at the time of undertaking the project.

4.1.12 Project Methodology
In most organisations, the use of project’s life cycle model helps in identifying and understanding of the total breadth and longevity of the project. However, several variations of
project life cycle models and implementation methodologies exist. Although, the methodology adopted should be dependent on the distinctive nature of the project, some organisations use inappropriate models borrowed from other projects. This normally leads to inefficiencies, delays and roles conflicts during project implementation.

4.2 Ranked Causes of Project Failure

Based on the 30 empirical studies reviewed, the major causes of project failure were ranked according to the frequency in which each factor was mentioned. Table 2 provides a ranking of these factors.

Table 2: Ranked Causes of Project Failure.

<table>
<thead>
<tr>
<th>Cause of project failure</th>
<th>Frequency</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Poor communication</td>
<td>17</td>
<td>57</td>
</tr>
<tr>
<td>Lack of stakeholders involvement</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>Lack of resources</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Poor planning</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Use of inappropriate project method</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Poor project leadership</td>
<td>8</td>
<td>27</td>
</tr>
<tr>
<td>Scope creep</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Lack of control</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Organisation structure</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Unrealistic budget</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Poor requirements</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Lack of executive support/involvement</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

The analysis shows that, although the above 12 factors are critical causes of project failure, poor communication, lack of stakeholders' involvement and lack of resources to implement the project are major contributors to project failure.
4.3 Researchable Areas

The third objective of this study was to identify researchable issues in the area of project failure. These issues were identified by analysing gaps in the literature reviewed. A critical analysis of the infrastructure budget in Kenya shows a lot of money is allocated to the sector. However, the literature has several cases ranging from poor workmanship, delays to inflated costs. There is need for an empirical study to identify and rank causes of infrastructure project failures in Kenya.

The phenomenon of leadership is one of the most researched areas in behavioural sciences. However, the relationship between project performance, leadership style, project characteristics, and project manager competence is not fully researched. Such a study if undertaken in Kenya would be of help to organisations and project manager.

One of the most commonly mentioned determinants of project success is stakeholders’ involvement. An empirical study in this area should be undertaken to show the relationship between various stakeholders and project success. Equally important is the determination of the characteristics of key stakeholders and their influence during the various project phases.
REFERENCES


