

SCOPE CREEP MANAGEMENT CHALLENGES IN AN OUTSOURCED E-
COMMERCE PROJECT MANAGEMENT COMPANY IN CAPE TOWN

by

SULAIMAN GODSPOWER MAERESERA

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Supervisor: Stanley Fore

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Abstract

Scope creep is a common cause of project failures. This results in wastage of money, decreased satisfaction and causes the project value not to be met. Most projects seem to suffer scope creep and stakeholders, and project teams are continuously frustrated by it. Why are the effective means of managing scope seemingly escaping us? There is a lot of literature on the most effective methods of curbing scope creep. Various methodologies and project management software has been developed to deal with the issue of scope creep. However it is still regarded as one of the main challenges facing various projects. One of the active outsourced e-commerce project management companies in Cape Town, South Africa, observed that scope creep was affecting almost every project. Even well-executed e-commerce projects that meet time and budget constraints often fail to meet the expectations of the clients. In most cases the root cause can be traced back to scope issues. It has been observed that almost all e-commerce projects have to deal with scope creep. Project managers, customers and developers do not shoulder all the blame.

This research study explores the challenges of managing scope creep. It aims to unveil the extent to which scope creep affects projects, and the underlying challenges of managing scope creep. More and more projects are failing regardless of the documentation, and training programmes on scope management. Perceptions of all the stakeholders are highlighted. The study also seeks to assist project managers on how to avoid scope creep. It has been proven that attempting to avoid it does not eliminate the problem. Therefore, this research study aims to bring about a practical solution to scope creep in e-commerce projects. This research study adopted both a qualitative research approach. Stemming from the findings of this study, recommendations such as employing well trained project managers, who are also trained developers, to assist in scoping the complex projects were made. Clients should also be participants in the scope management initiatives and should be consulted throughout the project. This research study was also done with the intention of assisting Project Management students' training by contributing to the Project Management body of knowledge. This would help trainers and educators understand the real challenges in the field, and prepare them to provide solutions for future practice.

Key words: E-commerce, project management, outsourcing, scope, scope management, scope creep

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GLOSSARY

Term

IT	Information Technology
ICT	Information Communication Technology
IS	Information Systems
ITS	Integrated Tertiary Software
MIS	Management Information System
SPSS	Statistical Package for Social Science
UoT	University of Technology
B2B	Bussiness to Bussiness
B2C	Business to Client
PMBOK	Project Management Book of Knowledge
PMI	Project Management Institute

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1. CHAPTER 1: Introduction

1.1. Introduction

Quinn (1996: 122), in his novel "*The Story of B*", re-explained the boiling frog syndrome. He explained that if a frog is left in a jar and heat is gradually applied the body of the frog adjusts its temperature. As the water reaches its boiling point, the frog will not be able to adjust anymore, and will decide to jump out. However, at that point it would have exhausted all of its energy and fail therefore dying. This principle has again been explained in light of the global warming scenario. Several academics concur with this principle. However, they dispute its applicability to a real frog scenario. The principle however, is relevant to the issue of scope creep particularly with its gradual increase in the project scope The Project Manager may be able to adjust the resources, schedules and time but there comes a point when continuous adjustments become unbearable, potentially resulting in project failure if changes are not properly managed.

Some changes may not be easy to avoid as they incorporate some improvements or alterations necessary to keep the project relevant to the changing environment and/or changes in customer requirements. Every organization understands that scope creep is bad and organizations have put in place change control measures to try and deal with the changes to project scope. However, numerous projects are still failing due to scope creep. Hussain (2014: 4) defines scope creep as a phenomenon where some features are unofficially added to the original scope.

1.2. Background To Research Problem

Scope creep has so many names that it is sometimes called requirement creep, or feature creep. It is regarded as an uncontrolled change to the scope of the project. It is considered to be a negative phenomenon and should be avoided. The project risks drifting away from its original purpose by allowing unplanned additions to scope. This increases work gradually until the project no longer resembles the original one and the original estimates may become obsolete (Turk, 2010: 1). A survey of software development projects (Lamri London & Newcastle Seminars, 2003/4) has shown that 63% of projects experience project overruns due to scope creep. Mathur (2007: 2) states that 80% of projects are failing due to project managers' inability to manage scope creep. According to the 2010 Global Survey, scope creep is believed to be the main cause of project failures worldwide (Hussain, 2012: 1).

Scope creep can happen in any project. It wastes a lot of money, reduces satisfaction, and in the end the project value may not be met. Most projects are suffering from scope creep and project stakeholders are constantly frustrated. There seems to be no effective way of controlling it (Larson & Larson, 2009: 1). E-commerce is associated with the buying and selling of goods and services through the computer network. E-commerce is a paperless exchange of business information using Electronic Data Interchange (EDI), electronic mail (e-mail), Electronic Bulletin Boards (EBB), Electronic Fund Transfer (EFT) and other similar technologies (Quah & Prabhakar, 2008: 5). E-commerce projects are fast paced and require a lot of development and interaction between stakeholders and customers (Mroz, 2017). Due to the limited amount of experienced developers in South Africa (DHET, 2019: 81), many companies outsource the services of other companies for the development and maintenance of e-commerce platforms. Outsourcing is believed to have developed from American terminology to mean “outside re-sourcing”, therefore acquiring resources from outside. Outsourcing is a term used to refer to the contracting out of some non-critical internal functions or business processes, to a third-party company. Many companies are outsourcing their information security and networking (IT) services to third parties. More and more companies are beginning to offer outsourced IT services, hence a lot of projects in IT services (Constantin, 2007: 110-117).

Many businesses are having challenges in managing scope. They stray out of their competencies and attempt to do a lot in a short amount of time. Many organisations also have issues with satisfying the expectations of the clients throughout the projects. Internal and external stakeholders may have differing expectations, and so apply pressure which is almost difficult to ignore (Newton, 2015: 10-12). An outsourced e-commerce project management company majors in the development of customised e-commerce, web, social media and mobile development. It was the Company was Launched in 2003, and to date have developed many successful sites, applications and campaigns of many media organizations, agencies and corporate brands around the world. Still with all this experience, scope creep remains a challenge and many projects are taking longer to complete. This then unnecessarily causes clients to go beyond their budget. Scope creep is so prevalent that clients and project managers often fall into the trap of scope issues and managing the problem. Project overruns are a common phenomenon to projects, as many projects fail. The main reason however, is due to projects taking longer to finish than what was originally planned (Kendrick, 2009: 381). There is currently a boom in outsourcing IT projects in South Africa. This outsourcing was forecasted to create 2500 direct jobs and 75 000 indirect jobs and contributing up to R7.95 billion to the economy by 2009. According to research and an advisory firm International Data Corporation (IDC), IT outsourcing makes up over a third of R30 billion in the IT services market (SAinfo, 2008) according to Devabit.com (2019), 84% of

service providers are projecting a big growth in outsourcing. The critical challenge though is that, the companies are unwilling to share information about their outsourcing but evidence are there that for businesses to grow, outsourcing is crucial but relationship may grow into oartnership-like with trustable relationships.

1.3. Statement Of Research Problem

Observations were made by the researcher while working for an outsourced project management company and through reading other related projects. It was discovered that various projects were failing nationally and internationally due scope creep issues. The causes such as unclear scope, client agreement issues, lack of priorities, poor estimation and many others were researched and possible solutions were drafted. What stood out of all the causes was scope creep, especially at one particular outsourced company in Cape Town. Scope creep is well known and a lot of prescriptive measures are there. Unfortunately, it still remains the main issue in project failures. Therefore, in light of the information in the previous section, it seems fitting to explore the challenges of managing scope creep in e-commerce projects.

1.4. Research Questions

Project failure is a common phenomenon in IT projects. More and more projects in e-commerce are failing due to various reasons and many of which causes are related to scope. There are a lot of tools outside the current market to assist project managers on how to deal with scope creep and it is believed to be the main source of project failure. A lot of research has been done about project failure and methodologies to assist in dealing with it formulatively. Projects are still failing despite all the effort and the unanswered question of why still remains.

1.4.1. The Main Research Question

The main research question is: what the challenges of managing scope creep in ecommerce projects?

1.4.2. Secondary Research Questions

The following secondary research questions will be asked in order to formulate possible solutions to the problem.

1. What are the scope management loopholes that allow scope creep to exist?
2. What control measures need to be put in place to manage scope creep?
3. What steps need to be taken to prevent scope creep from the onset?

4. The research question should be understood as an underlying guide to the questions to be asked during the construction of a research instrument (George Mason University writing centre 2008: 1-3).

The main question	What are the challenges of managing scope creep in Ecommerce projects	
Secondary question	Research Method(s)	Objectives
What are the scope management loopholes that allow scope creep to exist?	Questionnaire	To establish causes of scope creep in all IT related projects.
What control measures need to be put in place to manage scope creep?	Questionnaire	To establish the effectiveness of the current control measures to the known causes.
What steps need to be taken to prevent scope creep from the onset?	Questionnaire	To establish if the measures in place can be used to avoid scope creep from the onset.

Table 1.1. Research question, secondary questions and objectives

1.5. Objectives

Objectives are essentially short-term goals or short-term expectations from an undertaking, bringing research study closer to the expected goals of the undertakings. A research study's objective should be an active statement about how the study will answer a specific research question (Farrugia, Petrisor, Farrokhyar, Bhandari, 2009: 2800).

1.5.1. Primary Objective

The primary objective of this research study is to identify the challenges of managing scope creep in e-commerce projects.

1.5.2. Secondary Objectives

- Identify loopholes in scope management which may cause scope creep in IT related projects.
- To identify what change control measures for effective scope creep management exist.
- To identify the preventable causes of scope creep that should be dealt with from the onset.

1.6. Purpose And Significance Of Study

This study will contribute to future research which may want to review the subject of scope creep. More research may help in highlighting critical areas of scope creep after the findings of this study. The research will also assist project managers to try and avoid scope creep. It has been proven that by just avoiding it, may not eliminate the problem. However, a research study as to what may cause project managers and developers and all stakeholders to struggle with scope creep may assist to better understand scope creep and to reduce or limit the effects of scope creep. This research study will also aid in the learning and training of future project managers, the research will highlight scope creep, may also improve the skills of learners and lecturers to be effective and able to reduce scope creep. It will add to the body of knowledge in this field, because it can be used by academics for future reference. Should the findings be addressed they may also be able to improve project management, and lessen the failure of projects due to scope creep. It is also expected to provide a practical solution to the problem of project failures due to scope creep in e-commerce, or any other project.

1.7. Delineation Of Research

This research study focuses on the causes and effects of scope creep on outsourced e-commerce projects. As well as the challenges faced by project managers in managing scope creep. This study will be a case study of an outsourced project management company in the Western Cape, South Africa. This company deals with large numbers of IT projects, ecommerce projects are the same as IT projects because in both projects they is coding or program development. Case study research is an investigation of either an individual, business or group. Data concerning individual entity will be collected through the use of a questionnaire. Several advantages are associated with case study research and they include its ability to turn opinion into fact and, is relevant to all the parties involved. The disadvantages, include the fact that it takes long to analyse data and it is labour intensive (Creswell And Creswell , 2017 :20).

1.8. Research design and methodology

Hypotheses are a tentative assumption between some variables (Bless, Higson-Smith & Kagee, 2006:14). The nature of the problem seems to be directly linked to the primary research objective, as it seeks to establish the challenges of managing scope creep in e-commerce projects. Outsourcing has evolved with more and more companies outsourcing their projects especially IT related projects (Lee, Huynh, Kwok, Pi, 2003: 84-89). Outsourced e-commerce projects provide a better platform for future research since more and more organisations are turning to e-commerce for a competitive advantage (Bodla, 2013). There is

an increase in e-commerce project management companies in South Africa and the world over (Klerk and Kroon 2015: 33-40).

According to Weenen, Jentink, Pronker, Commandeur, Claassen, Boirie and Singer (2014:795). The qualitative approach to research is concerned with gathering a great deal of information. It is always difficult to analyse qualitative data because it is subjective and therefore a Likert scale will be used to convert that data to information. In contrast, the quantitative research approach explains phenomena by collecting numerical data that are analysed using mathematically based methods (Weenen, et al, 2014:795).

It was then decided that a mixed research approach will be used where the both quantitative and qualitative paradigms are incorporated. A case study of a selected e-commerce project management company based in Cape Town will be used in selecting the participants. A self-administered questionnaire will be used in the research study. A questionnaire is used for this research study, because it does not interfere with the participants' daily work. They are able to complete the questionnaire in their spare time. Another reason is that many people may feel comfortable answering the questions in private without any pressure, rather than having to do so in an interview session.

1.8.1. Target Population

The term population refers to objects with specific characteristics which consist of a total collection of individuals from the on-going study (Welman, Kruger & Michell, 2008: 54). In this case, the population refers to the project stakeholders of previous, current, and future projects at Fontera Digital Works. These include business executives, project managers, developers and project coordinators.

1.8.2. Sampling And Sample Size

A sample refers to a process where individuals are selected for a study. The individuals would be representative of a larger group which they were selected from. The purposive sampling method was selected based on the specific knowledge regarding the topic of the study. The sample involves the stakeholders of the projects. This will include but is not limited to, developers, project managers, project owners and the organisation's management which deals with projects. The sample will include people who have been involved in projects for the past 5 years, and a questionnaire will be used to obtain the required information.

1.8.3. Sample Sizes: Considerations

There are mainly two rules when considering one's sample size. One consideration is based on redundancy or saturation which has to do with identifying consistent patterns. There is a

point in a research study where consistency in the answers begins to appear, that is known as the saturation point and it signifies a sample size. The second consideration has to do with how large the sample can be in order to represent a variation within the target population. The size of the sample is considered before it can be used to evaluate the applicable amount of diversity represented (Nastasi, 2004: 4). Table 1.2. and 1.3, further clarifies some methods of determining the sample size.

Rules of Thumb Approach

Research Approach	Rule of the Thump
Biography/Case study	One case / one person selected
Phenomenology	Asses 10 people, else fewer if you reach saturation
Ground theory/Ethnography/ Action/Action Research	Asses 20- 30 people which is sufficient to reach saturation

Table 1.2. Rules of Thumb Approach

Rules of thumb based on data collection

Data Collection method	Rule of Thump
Interviewing key informants	Interview five people or any number closer to five
In-depth interview	Interview 30 people or any number around 30
Focus groups	Create groups of around 5 – 10 each. Consider the number of focus groups you need in the research question
Ethnographic surveys	Select a large and representative sample , purposeful or random bases on purpose , with numbers close to those in quantitative study.

Table 1.3. Rules of the thump based approach (Nastasi, 2004)

Based on information from Nastasi (2004: 4), the sample size was ethnographically fixed at 200 project stakeholders. Welman, Kruger and Mitchell (2008:173) advises that a sample of 200 and above is large enough to give credible results. To arrive at the sample size the researcher exhausted all users involved with the project.

1.8.4. Data Collection Method And Research Instrument

A questionnaire has been selected as a tool to gather the essential data from an organisation. Collis and Hussey (2003: 173) defined a questionnaire as a list of well-thought and cautiously structured questions to solicit dependable responses to research questions. Questionnaires are designed to assist in obtaining appropriate information from the population sample concerned as accurately as possible to be able to collect and analyse data.

1.8.5. Data Analysis

SPSS Statistics is a software package that will be used for statistical analysis in this research study . This method of data analysis is required because it allows the data collected from any source to be used and it can be opened in file formats that are commonly used for structured data. The research process undergoes a normal process of planning, data collection, editing, coding of information, then data analysis as a last step. Data analysis has two aspects, namely descriptive statistics and statistical inference. Information will never be 100% correct however, Collis and Hussey (2003: 17) hypothesised that the choice of methods, and technique used for data analysis, depends more on the type of data. That is it being qualitative or quantitative. Floyd and Fowler (2009: 145) stated that once data is collected, no matter the methods used, it must be translated into an appropriate form for analysis.

1.9. Ethical Considerations

Research ethics should be more than just about the character of the research participants. It should also include any form of bad scientific misbehavior and attempts at plagiarism (Terreblanche, Durrheim & Painter, 2006: 61-62). The ethical certificate was sought before the research was conducted. This was to enable the research study to be conducted unimpeded, the successful collection of the data, and to have a mutual agreement regarding the scope, and intent of the project. The participants were well informed of the objectives of the research study and their informed consent to participate in it was sought. Confidentiality and anonymity was guaranteed if the participants believed that it would make them more comfortable.

Furthermore, the following ethical standards were upheld in this research study. Participants were told that their participation was voluntary and they could withdraw from the study if they wanted to. They would be protected from any form of harm and the information gathered will only be used for research purposes. Finally, all participants would be treated with equal respect throughout the research study.

1.10. Validity And Reliability

Validity is when the measurement tool succeeded in describing the reason for which it was made for reliability is the extent to which the measurement technique used can be trusted to produce constant results (Weiner, 2007:7). Questionnaires were distributed to all project stakeholders of the organisation, including developers, project managers and clients. Few of the questions were either removed or corrected after the assessment of the returned questionnaire.

1.11. Chapter Classification

This section will describe, in brief, what each chapter in this research study will discuss. Chapter one will introduce the study and the background theory concerning the research problem. The research problem statement, research objectives, research questions, research methodology, research instrument, data collection, and ethical considerations will also be included in this chapter. Chapter two concentrates on the literature review aspect of this research study. This chapter focuses on the project life cycle and the problems inherent in each one of the phases. Special emphasis will be placed on project selection, project estimations and the project planning process in its entirety. Chapter two will also define and discuss the concepts of scope determination, scope management, scope creep causes, and the problems associated with scope creep in projects. This is known as conceptualisation.

In chapter three, the research methodology used for this research study will be discussed. It will highlight the methodology used and explain why the quantitative research method was preferred for the data collection phase. The focus of the fourth chapter is mainly to report on the data collected. That is, it will concentrate on the analysis and interpretation of the data. Lastly, chapter five will be a summary of the findings, if the objectives were achieved, and a brief discussion of the research problem and questions will be revisited. The recommendations will be suggested to the stakeholders of outsourced project managers and for any other possible researchers in the field. In this regard, a conclusion concerning the research study will be discussed.

1.12. Conclusion

In conclusion, projects are getting complicated as technology increases. Scoping the projects is important as the challenges of scope creep management are evident in most projects. A lot has been written on scope creep and how dangerous it can be to projects, however, countless projects are still suffering from this problem. The challenge now is to investigate to what level is this issue felt and what are the obstacles in managing it. This research study seeks to find answers to the aforementioned questions, and create a reference point for project managers, current and future to create a basis for further study of scope

management to be used in future research or education. With such anticipated growth, projects without scope management will fail and as such projects must be completed in time, as they are currently fast paced. This may be due to changes in governments, marketing trends, economic policies and many other changes that affect the way people buy goods and services.

2. CHAPTER 2: Literature review

Introduction

This chapter provides an overview of previous research on scope management. It introduces the framework for the cases that is comprised of the main focus of the research described in this research study. Scope and scope management will be discussed and debated. Literature relating to scope management will be highlighted and also how scope creep relates to different types of projects and e-commerce projects. Without scope management it will not be possible to successfully plan and execute projects. Scope creep can only be understood through the understanding of scope and cope management.

2.1. Project Scope And Scope Management

Project scope relates to business needs, linking to specific deliverables to benefit the business and to satisfy stakeholder specifications. This includes the requisite processes to ensure that the project includes all work required, encompassing the definition and control of what is included in the scope. This is regarded as scope management (Maley, 2012: 84). Larson (2013: 102) defines project scope as the ultimate result or generally the mission of the project. This is what is crucial for the client to smaller version of the full project before it is done. Especially when working with e-commerce projects or any IT related project. Usually scope definition is done by many stakeholders, the main players being the project manager and the client.

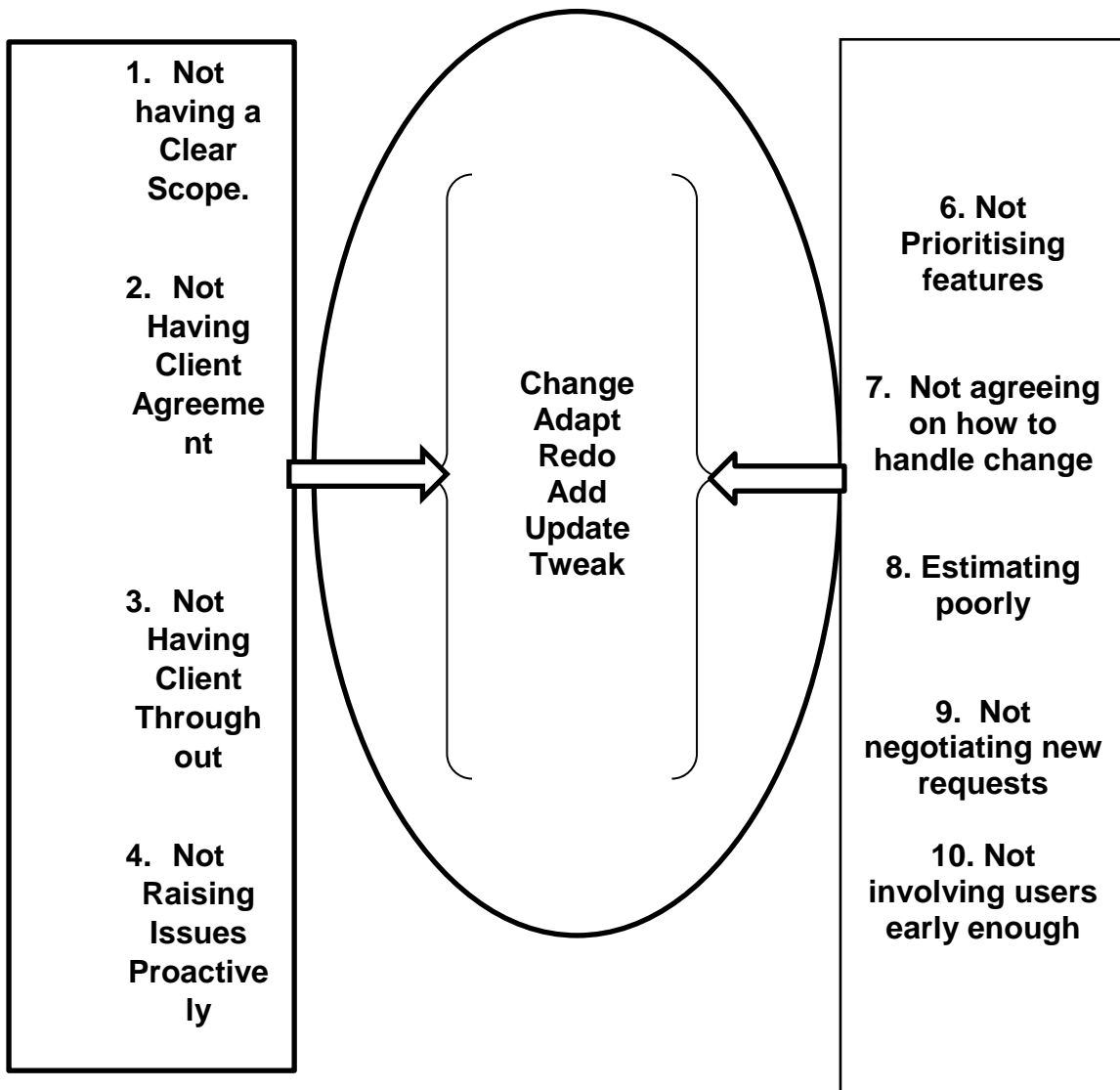


Figure 1.1. Ten Causes of Scope Creep and How to Avoid Them (Haworth, 2018)

Haworth (2018) summarised 10 causes of scope creep and how to avoid them. The explanation and layout is so detailed that it would seem difficult to allow scope creep in projects. Villanova (2019) concurred and even further explained that training may be needed to manage the unexpected challenges in complex projects. This is sending a very important signal that what could seem to be a simple layout of processes and procedures, may not be. The literature cited below further clarifies the intricacies of scope management. Duke (2016) acknowledged that scope creep is still a “killer” to many projects. Load Spring Solutions (2019) agreed that scope creep is inevitable in their projects, the upgrades and other software integrations. This is in light of the fact that they are a major competitor in e-commerce projects. Although Helms (2002) also agrees with the effects of this problem, he stressed that scope creep is natural and that these are remarks compounded by experience as competitors in the industry. There is therefore a need to find the challenges of managing scope creep, as both researchers and project managers are seemingly not in agreement as to whether it is avoidable or not.

2.1.1. Project Life Cycle Phases

Project Management Books of Knowledge, PMBOK (2017: 3-8) defines project management as application of knowledge making use of skills, tools and techniques to the activities of the project to meet the agreed project requirements. The 47 logical processes which fit into the five phases are believed to be the guiding tool. Based on the same framework all the parts of the project are also treated as mini projects. The outputs of the previous phase are treated as the input to the preceding phase so the whole process is sequential in nature. One such phase which falls within the planning phase is the scope management which is a knowledge area consisting of a number of processes. Without scope management there are no bases of defining scope creep.

The challenge of defining project phase and project life cycle in order to highlight their differences, is necessary to clearly explain scope management. PMBOK defines project life cycle as a series of phases that every project passes through from initiation to closure. These phases are a collection of project activities which are related logically and so build up to the completion of either one or more deliverables (PMBOK, 2013: 39-41). There is a general agreement to the use of project life cycle approaches on all projects. It should be understood that according to (PMBOK, 2013: 39-41), phases are inside each cycle and thus, there is some form of scoping at each and every cycle each phase has its own scope issues to deal with adding to the complexity of scope management. Project life cycle is a management tool according to Knipe, Van der Waladt, Van Niekerk, Burger and Nill (2006: 31). It is a critical tool that needs to be adhered to because it assists in the management of tasks in sequence. It also helps in the identification of project issues and decision making pertaining to those issues that would have been identified.

Ability to have overview of the whole project, helps in the sequential breaking of tasks to small and manageable tasks, instills sense of urgency to stakeholders and Identify staff competencies and integrate activities.

This may help in identifying any additions or subtractions to project work. The scoping is made easier in the process.

For a project to be successful, the project life cycle must be adhered to. The project must pass through the phases until closeout. Westland (2006: 16-202) authored his book in detail regarding project life cycle. He pointed out that the phases are only four namely initiation, planning, execution and closeout. This is the same with a lot of other authors. Although they may differ in the terms used generally they are all in agreement. Pinto (2016:33) does not

use project initiation but rather conceptualisation. There are a few differences however, he is in agreement regarding what it entails.

Steyn et. al (2016: 23-25) described the importance of the phased approach of project life cycle. He highlighted that in dealing with some projects that are complex one need the phases so that you plan and complete the first phase before the next one. Sequentially so to eliminate risks. If preceding phases are done properly the chances are that the subsequent phases will also succeed. This is done to simplify the project because it is difficult to plan for the whole project at once. Knipe et. al. (2006: 28) brought in a different dimension regarding the phases. They believe phases are influenced by industry. Furthermore, they acknowledge that there are common features but with notable differences due to industry practices. Also, it may vary to suit the participants that is different project managers also employ different phases.

Steyn et. al. (2016: 34) in support of the above gave notable examples of different organisations and how their phases look like. The figure 2.2 shows project life cycle stages and momentum tracking of scope changes. Hartley (2009: 103) emphasised that regardless of how good the project manager is or how good the charter is and the scope creep is bound to occur.

2.1.2. Life Cycle, Phases And Scope

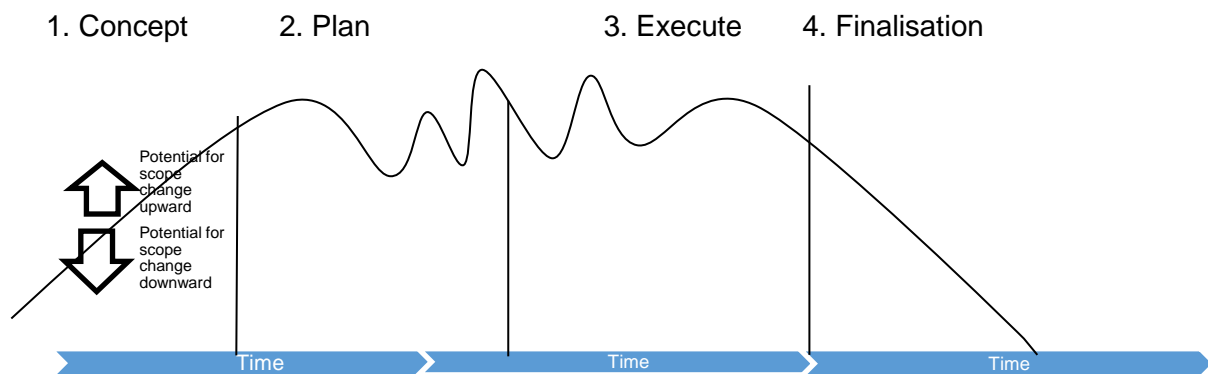


Figure 2.1. Project life cycle and momentum tracking of scope changes (Hartley 2009: 102)

2.1.3. Project Initiation/Concept

Pinto (2016: 33-35) uses the term conceptualisation for initiation. He pointed out that this is the phase where goals are developed and technical specifications. This is where the scope is determined together with resource allocations and stakeholders are also assigned. In addition to this, Westland (2006: 3) added that this is a stage where problems or opportunities are identified and a feasibility study is done. Feasibility studies are conducted to investigate if the proposed solutions will be a success. Afterwhich, recommendations are

made after the project is initiated detailing the objective scope. Nicholas (2004: 91) stated that this is the stage where the examination of user environment and objectives are done, prompting the formal proposal or a letter of interest. This is usually for outsourced project management companies. Capability and solution appropriateness is considered at this level.

2.1.4. Project Planning/Development

This is the planning phase which precedes the initiation phase. The input to this phase is the project initiation outputs. This is the stage where the whole project takes root. The activities, tasks, dependencies and time frames are all comprehensively outlined here. All the plans are drawn here and these include resource, financial, quality, risk, acceptance, communication and procurement (Westland, 2006: 3). Pinto (216:33) added that all the work packages are broken down here. For example, assignments are made and the process of completion is delineated clearly. For an outsourced project management company it will be at this point that when all the planning is done. The plans are forwarded to the client for review, who will then evaluate and make an informed decision of continuing revising or to cancel the project (Nicholas, 2004:92).

2.1.5. Project Execution/Implementation

Project execution/implementation forms part of the final phase of the actual project work as per the planning phase. The bulk of time, resource and budget are used here (Pint, 2016:33). With regards to the outsourced project management company the client will be given the product to test against agreed specifications. It is usually at this stage that clients may dispute the result due to scope creep or failure to adhere to the scope user environment testing is crucial (Nicholas, 2004: 92). There are notable differences in how different authors approach the subject of project life cycle. Thus in most cases has to do with the type of project being undertaken. IT related projects may have a different approach to construction projects. E-commerce projects too may have a different approach since it is new in the market and competition is growing. The projects are much shorter in duration, hence need a shorter life cycle which may not include as many stages. Some projects are as known to be as short as one week.

2.2. Project Scope Management

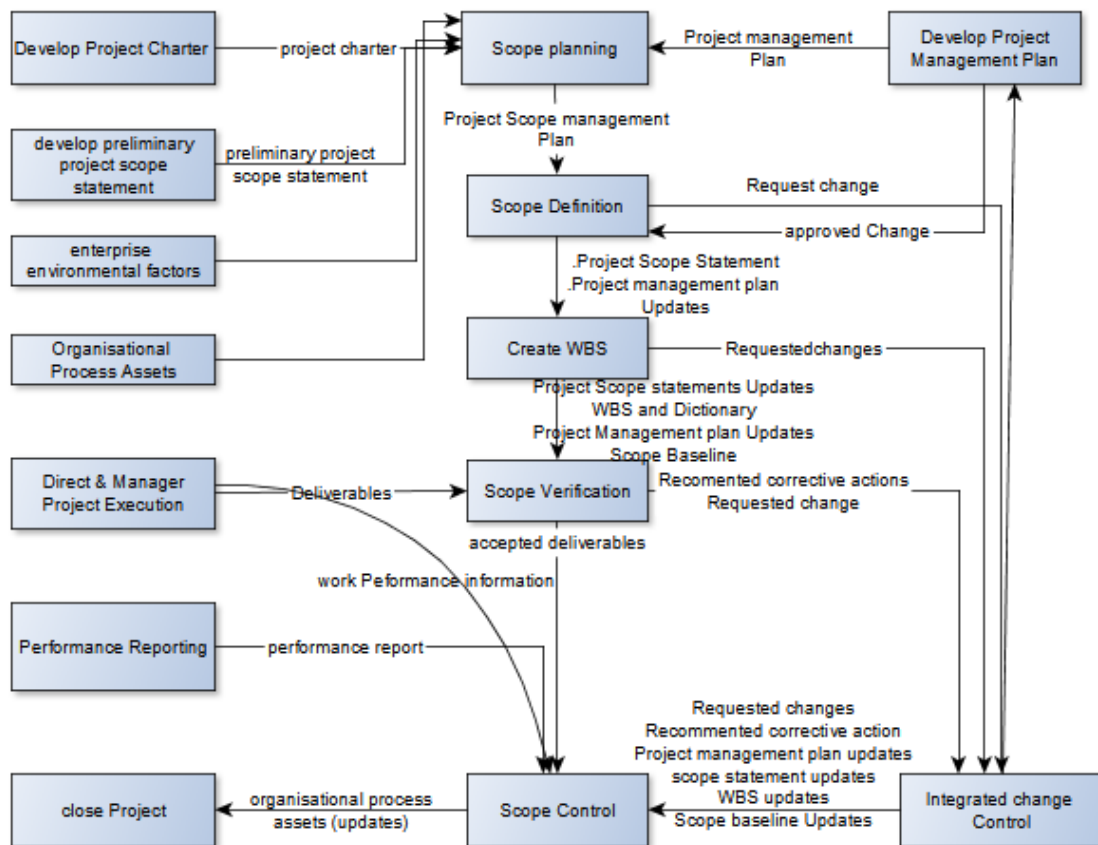


Figure 2.2. Scope management Overview (PMBOK, 2013)

Larson and Grey (2011: 102) postulate that the scope should be developed under the supervision or direction of a project manager. In this regard, the project manager should see that there is an agreement between the customer and the owner on the deliverables and objectives of the project. Notable stages are discussed in the sub-sections below.

2.2.1. Plan Scope Management

Plan scope management refers to the process of creating the scope management plan, which outlines how the scope will be defined, controlled and validated (Knipe et. al., 2010: 82-84). The project scope management plan is the only output of the scope planning process. The document describes the process which will be followed in the definition, documentation, verification, acceptance, completed deliverables, controlling and the management of requests for changes that may be needed for the scope (Sliger & Broderick, 2008: 68).

The planning process provides parameters and a path on which scope will be managed throughout the project. The inputs to this process are the project management plan, the

project charter, enterprise environmental facts and organisational process assets. The tools in this process are the meetings and expert judgments. The outputs include a scope management plan and a requirements management plan (PMBOK, 2013: 69). It should be understood that outputs of previous stage are regarded as inputs to the preceding stage.

2.2.2. Plan Scope management inputs

The project management plan forms a capsule version of all the project activities. It includes what will be achieved, how will it be measured and reported and who will be involved. This may probably be the chief communication document for the whole project. Project management plan identifies all stakeholders involved and the budgetary issues (Haugun, 2011: 104).

According to Haugun (2011: 26) a project charter serves as a document which explains the project. It is used to create organisational ground rules and the context as to the preparation for the implementation phase. It also provides the means to communicate and manage the purpose of the project to stakeholders and to show management support. The project charter also describes the required support from management and the level of authority of the project manager. It can be used as an optional contract between a project manager and his superiors. The parameters of each assignment are established and resources to be used also are established. This document is produced by the project manager but is reviewed by senior management and may also be reviewed by the customer (Haugun, 2011: 26).

According to PMBOK (2013: 68) the inputs for a project charter involve among other things for example project statements of work which is simply a description of what needs to be delivered by the project. In external (outsourced) projects it can come from the customer. This includes business needs, product scope descriptions, and strategic planning. It also involve with business cases which may only be relevant to internal projects, as this is a document to determine if the project is worthy of an investment for the business. This may include the market demand, organisational needs, technological advancements, any legal requirements, ecological impacts or social needs.

Agreements are used to define intentions for a project. These may vary from a memorandum of understandings and the service level agreement contracts or even letters of intent. Some may be in the form of emails or verbal agreements. In the case of outsourced projects contracts are the best form of agreements (Meredith & Mantel, 2012: 228-229).

Some organisations have several templates and registers for contracts and tools for assessment to assist in the running of projects. There are some other forms of assets in

lessons learned and organisational knowledge base. Anything that the organisation acquired in order to be used in managing the project, is part of the process asset. Plans that are formal or informal, as well as procedures, policies and guidelines are very crucial in the planning stage (Dwevedi, 2012). Any artifacts used are also included and the lessons learned, along with historical information. This is the process that is done throughout the project life cycle and can be grouped into processes, procedures and corporate procedure base (PMBOK, 2013: 27).

2.2.3. Tools And Techniques Of Plan Scope Management Phase

This involves mainly two tools, expert judgment and meetings. Expert judgment is where, experts are regarded as an asset of an organisation. Their opinions are very crucial for planning estimations and they may be stakeholders, or even customers. Expert judgment is therefore considered important in the planning phase of every activity. It serves time during the planning phase and it assists in the unearthing of possible risks during the implementation phase. It also improves the quality of estimates, and improves the forecast. Complex projects mostly rely on expert judgment, because the specialists who make accurate unbiased decisions are very important to any competitive organisation (Rajagopalan, 2015). Meetings involves almost all stakeholders meeting to deliberate and develop a scope management plan which is clear and highlighting the inclusions and exlusions (Schwalbe, 2014: 423).

2.2.4. Plan Scope Management Outputs

The Scope Management Plan provides the scope framework for the project. This plan documents the roles and responsibilities in relation to project scope, scope definition, scope verification, scope change control and the project's work breakdown structure. All communications pertaining to project scope must adhere to the Scope Management Plan (Knipe et. al., 2010: 84).

Requirements Management Plan is a part of project management planning which showcases how requirements get to be analysed, documented and managed. The phase to phase relationship is considered here and the project manager chooses the most effective relationship for the project. Afterwhich, it is documented in the requirements management plan. The other parts of requirements plan are based on the relationships (PMBOK, 2013:110).

2.3. Collection Of Requirements For Project Scope

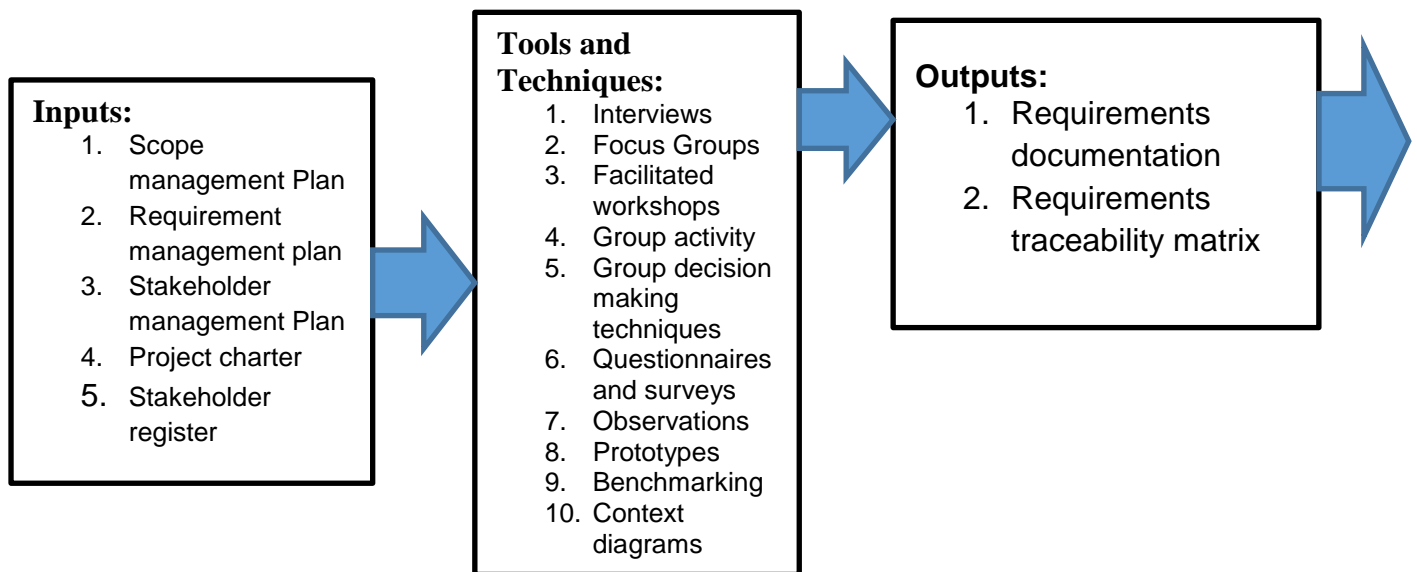


Figure 2.3. Collect requirements process (Knipe et. al., 2010: 84)

This process involves both the identification and documentation of stakeholder needs as well as stakeholder requirements. It also involves the management of the needs and requirements. Collect requirements is a stage where the stakeholder needs are determined and requirements are managed to meet the project objectives. All this will be documented also at this stage. This serves as an input to the defining and managing project scope stage. In any project active stakeholder involvement includes the disintegration of needs into requirements and determining. The documenting and managing of product requirements service or project results is also very important. Requirements comprise of competencies that must be met by the product or should be in the product service. Not only that but the result should justify the agreement and any formally imposed specifications (PMBOK, 2013: 112). Requirements include documented and quantified needs of the customer, the sponsor, or the stakeholders. These requirements will have to be analysed and documented in enough detail to be incorporated in the scope baseline, and measured during execution. This is the basis of the Work breakdown structure (WBS). It is from these requirements that the schedule, cost and quality are based upon (Monnappa, 2012).

Some of the outputs of the preceding phase are considered as inputs to this phase. In this case the outputs in the planning phase that is the project charter and scope management plan, are included in the inputs.

Scope management Plan	Provides clarity on what requirements needs to be collected, and how a project team will determine that.
Requirements Management Plan	provides the processes which will be used throughout, and to document and define the stakeholder needs.
Stakeholder management plan	this is merely to understand the stakeholder engagements and communication requirements. As well as to determine the level of their participation in requirements activities
Project Charter	this is used to provide product descriptions, or services, and project results to help in developing detailed requirements.
Stakeholder Register	his is used to provide information regarding the stakeholders who can provide information on requirements. This will also capture crucial requirements and critical expectations that stakeholders may have for the project

Table 2.1. Source: PMBOK, 2013: 113)

2.4. Scope Definition

With regards to scope definition, the detailed description of the project is prepared here, and so are the detailed descriptions of major deliverables. The intent of the scope and the parameters are set, along with the reviews of the supporting documents to ensure that the project and the stated goals are insync. The results will then highlight the needs and expectations of stakeholders (Burke, 2011: 118). This involves dividing the deliverables which are stated in the scope statement. The components are divided to improve the accuracy with regards to cost, resource estimates and time. It will also help to create performance reference point, control and will create clear assignment responsibilities (Knipe et. al., 2010: 84).

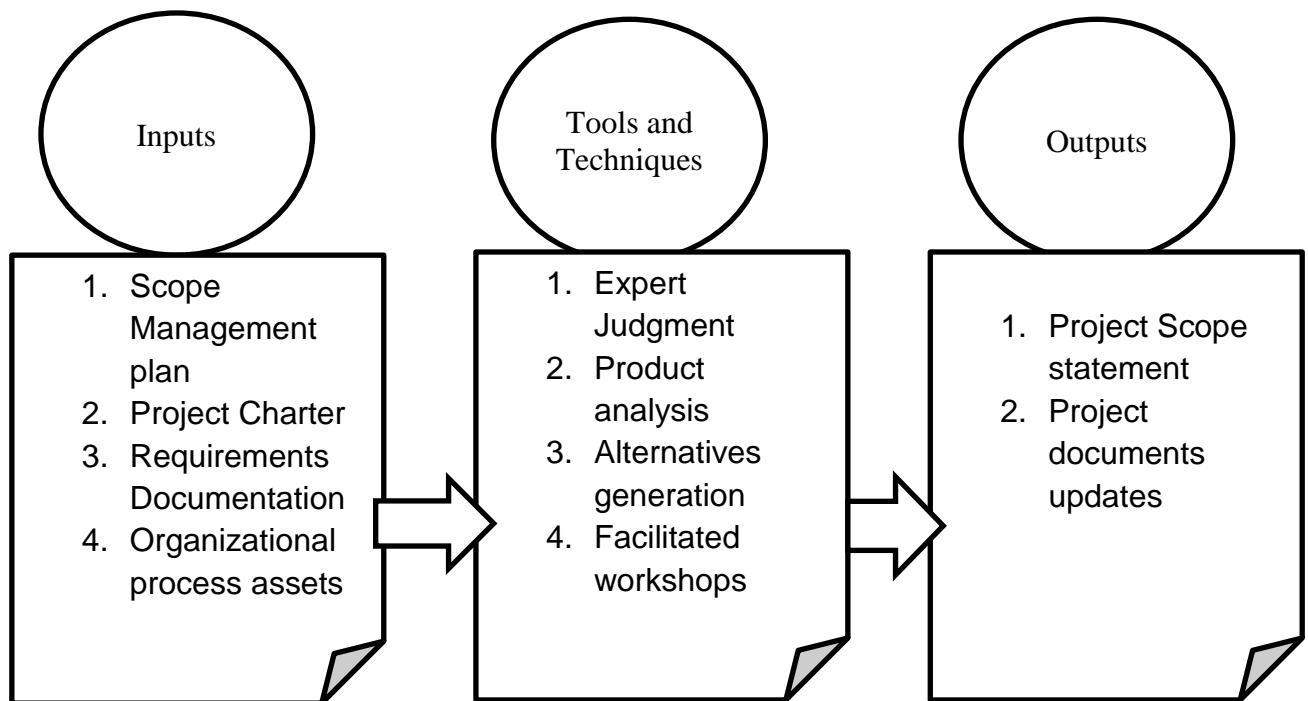


Figure 2.4. Scope Definition Process (PMBOK, 2013)

The outputs of collect requirements are inputs at this stage. Historical information about other previous projects also can be used. Omissions or even errors of previous projects provide useful information at this stage. Lessons learnt from previous stages are crucial also, because they are used as a corrective measure for other similar projects (Knipe et. al., 2010: 85; Richardson & Butler, 2006: 116).

2.4.1. Tools and Techniques of Scope definition

The Work Breakdown Structures (WBS) of other previously developed projects are a useful tool. They can also be re-used in many organisations if the projects are similar. A method of decomposition can be employed where larger deliverables can be subdivided into smaller components. This is done in order to obtain sufficient details for future projects initiatives. Decomposition has some activities which include the identification of major project deliverables. The major process here is that elements should be defined in terms of how they will also be managed (Sliger & Broderick, 2008: 79; Richardson & Butler, 2006: 116).

Expert judgment: Where experts are a group or individuals with specialised knowledge, or training. These may come in the form of other units in the organisation, as consultants, stakeholders or technical associations. They assist with the analysis of information needed to develop the scope statement and help with technical details (Knipe et. al., 2010: 84-86).

Product analysis: Projects may have deliverables of a product or a service. Product analysis will only be for those that have products as a deliverable. This is an effective tool which helps in methods of translating high level product descriptions to tangible deliverables, as each application has accepted methods. The methods may involve but are not limited to systems analysis, product breakdown and value analysis (PMBOK, 2013: 128-129).

Alternatives generation: This is a technique used for gathering as many potential options as possible. This will help to identify different approaches to execute project work using various approaches such as brainstorming and analysis alternatives.

Facilitated workshops: Key members with varying expectations and areas of expertise will help with the cross-functional, and mutual understanding of project objectives and limitations. The outputs expected after the stage are Project scope statements, product scope descriptions, acceptance criteria, deliverables and exceptions.

Project scope statement: This is considered the heart of the scope management process. It mirrors the effort of the project team in generating a document and approval of all limitations, before going to the development phase (Pinto, 2016: 173). It involves the description of the project scope, the major deliverables, including assumptions and limitations. It includes detailed descriptions of deliverables and provides the collective understanding of project scope among stakeholders. The details regarding the exclusions assist the project management team on how to control the overall scope (PMBOK, 2013: 123).

Sample Scope statement (see Appendix 1)

2.5. Create A Work Breakdown Structure

Work Breakdown Structure (WBS) is a sub-project components hierarchy which is deliverable-oriented and it defines the entire work of the project (Richardson & Butler, 2006: 117). The work is divided into logical parts according to how it will be done. This forms a basis on which the planning and the management of costs, schedule, resources and changes are done. Some experts argue that if the work is not included in this stage then it should not be done at all (Schwalbe, 2014: 198).

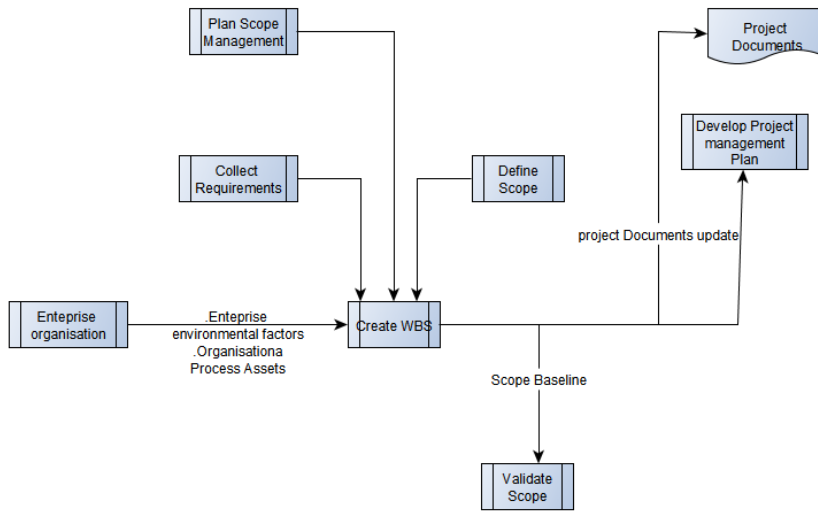


Figure 2.5. Create a WBS Process (PMBOK, 2013)

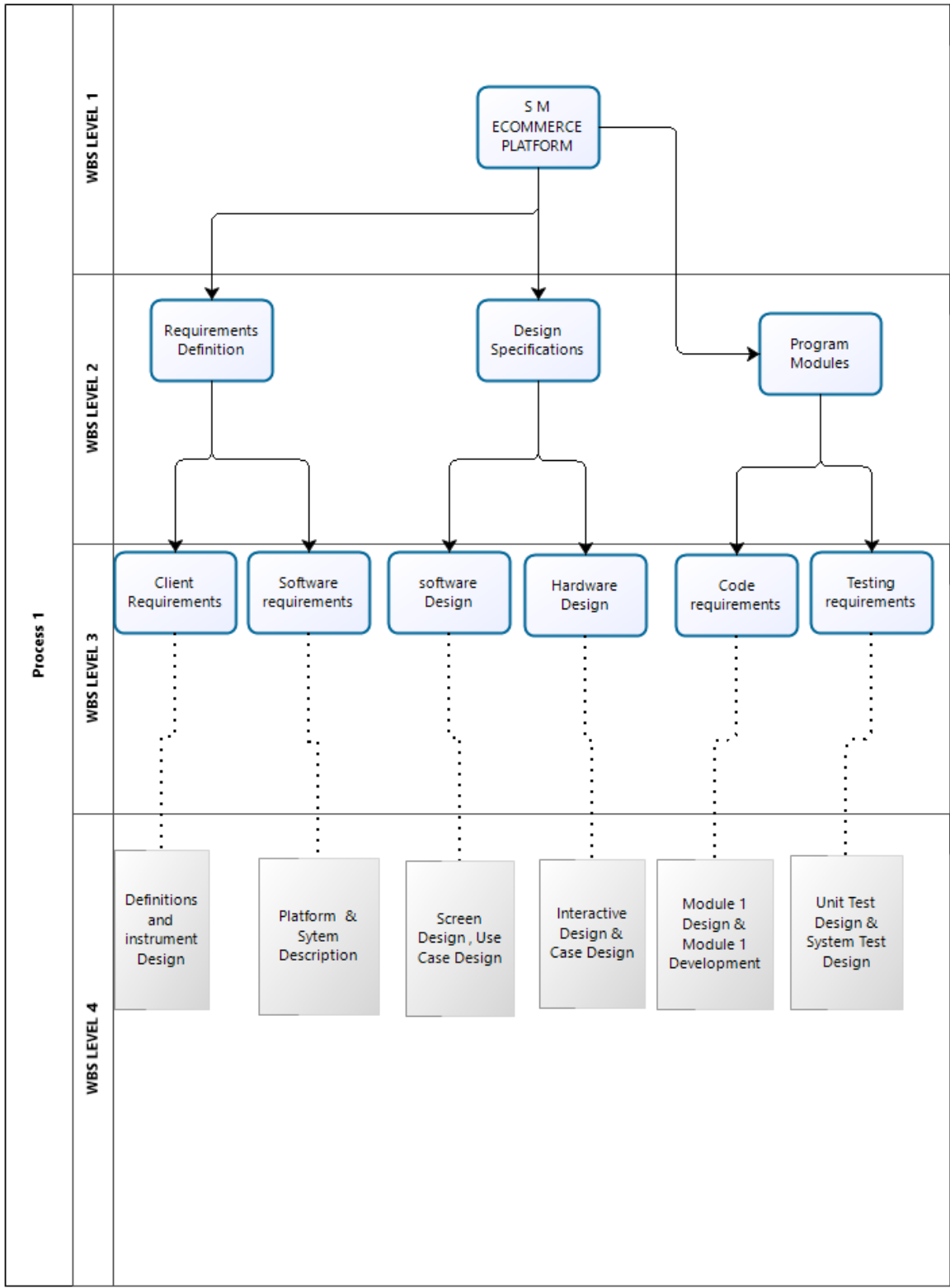


Figure 2.6. Create a WBS structure and Process (Schwalbe 2014: 198)

The levels highlight the level of aggregation, from high level aggregation to low level work units which may be timed. Work packages appear at the lowest level which is the subdivision of work that cannot be broken down any further (Schwalbe, 2014: 198).

2.6. Validate Scope

This process also known as scope verification. This is the formal acceptance of the project scope by stakeholders (Richardson & Butler, 2006: 117). This involves customer reviews and sign-offs on some key deliverable, this creates a space where scope creep finds its way into the project. Scope validation should be done throughout the project life cycle, this is done to minimize known or unknown scope changes as this will test if all the work to be done or being done is within scope still Schwalbe (2014: 209).

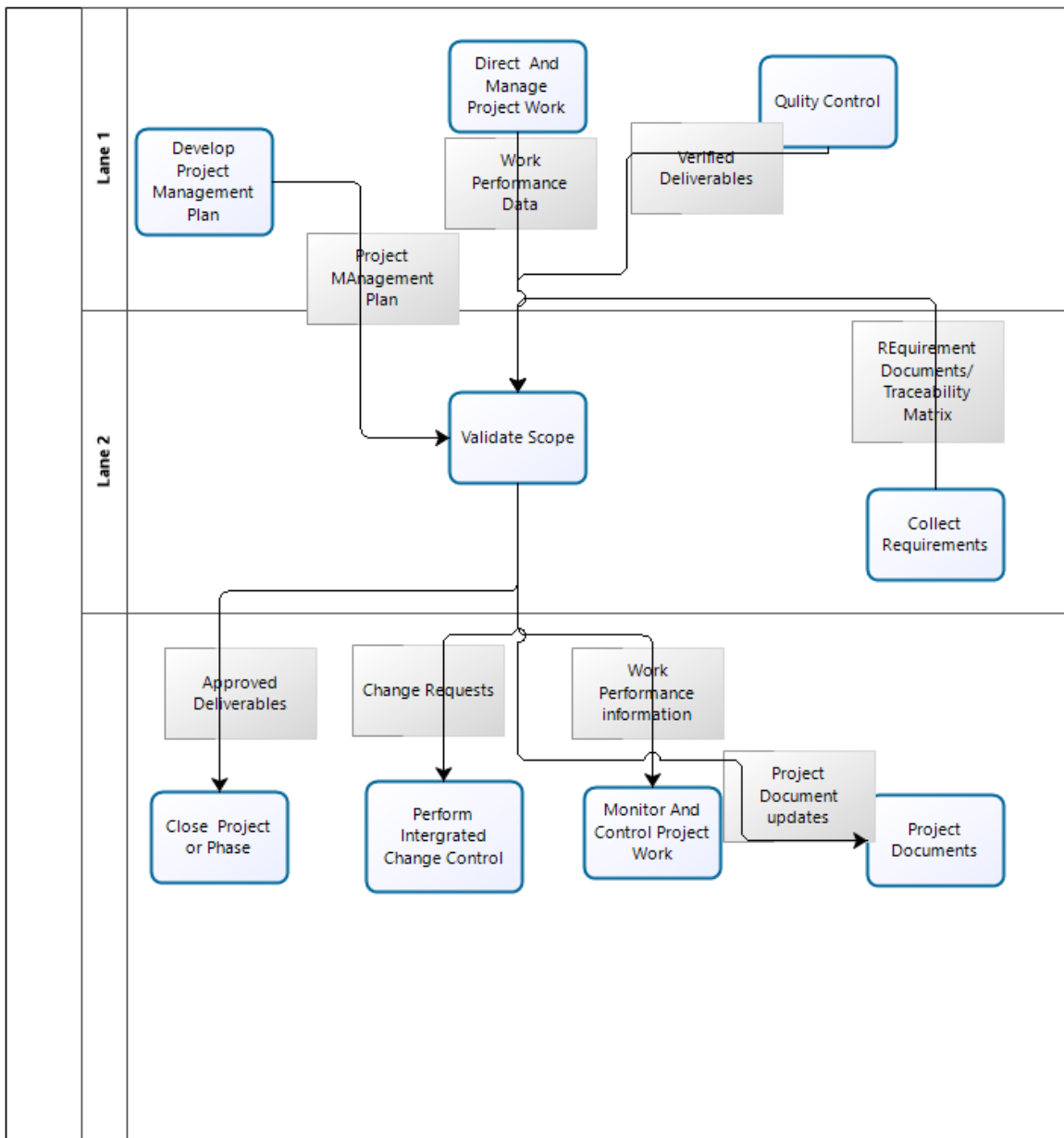


Figure 2.7. Validate Scope flow diagram (PMBOK, 2013)

2.7. Control Scope

All projects are prone to some changes in scope during their life cycle. The scope control system is designed to manage such changes in the scope process. The process can also be called configuration management system. Scope change control is defined as factors which influences scope changes to ensure that changes are beneficial. The thrust is to determine that the change has occurred, and to manage them when they occur (Burke, 2011: 119).

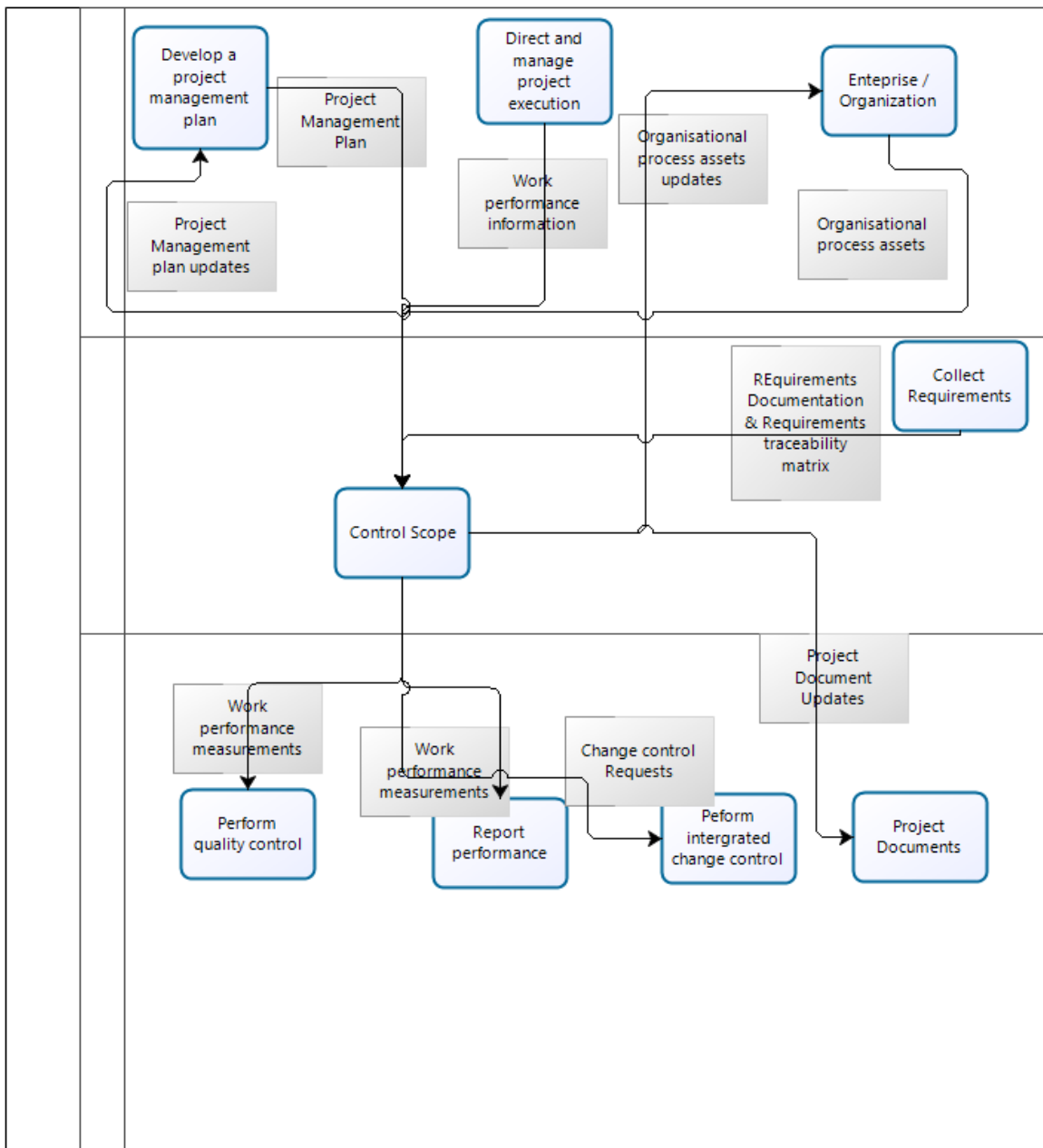


Figure 2.8. Control scope flow diagram (PMBOK, 2016)

While scope management looks straight forward as reported by (PMBOK, 2016) on the diagram, there is the possibility of a few loopholes as it is just one size fits all. PMBOK and Knipe et al prescribed a standard method for different projects, especially IT projects that are fast paced and have a lot of changes that need to be completed. This, when compared to other projects such as construction, or manufacturing, which is more repetitive. Hence, there is a need to look at management challenges to scope creep, as this may be caused by the scope management as well.

2.8. Scope Creep Loopholes

It is believed that projects don't fail at the end, but at the beginning. The end will show the extent of failure or the time when failure becomes unavoidably obvious. The issues at the heart of projects failing is attributed to scope. Product scope and project scope plays a vital part in scope management. Project scope is the strategic part of the project. This is the set of the activities which needs to be done for the product or service to be delivered Project Management institute (2017: 10-27). With specified features and functions, product scope involves specific details of the projet. This simply refers to the features and functions that characterise the deliverable. For the project and product scope to be defined properly, there is a need to set up meetings with all the stakeholders to have a better understanding of what needs to be done to produce the scope statement. In the case of outsourced projects, the client and the project team will have to schedule a few meetings. The challenge on projects is that they allocate time for those meetings and since some stakeholders have other deliverables to do, the time will lapse without much having been achieved. This is understandable because stakeholders have their daily work that differs from scoping. However, it burdens the important aspects of scope deliberations which forms the scope baseline. When a certain period time has elapsed, there is always a general feeling of foreboding that usually engulfs project teams. Where everybody reluctantly seems to agree and then push to get on, and produce deliverable. In that case the biggest error is made and the possibility of scope creep lies ahead (Newton, 2015: 8).

Jacobs (2016: 10) differs in this aspect, as he centres on a different perception of what clients mean when he specifies a deliverable. A client coming from possibly a marketing or business environment, usually uses terms that may not be understood by the other stakeholders. Especially those that will work on the project referred to here as project team. In documenting the information, the team also uses the terms in their context, where the client assumes that it is what was discussed. Now, the traditional process of scope management will be to adhere to what was agreed and signed by the client. Newton (2015) argues that even though the scope is agreed to at first, honouring that agreement may not be practical. This is due to some challenges that filter in during the process of doing the project, time and scope are also involved hence, elapsed time, or the cost may vary.

Communication is at the heart of project management as the project manager will be communicating with different stakeholders of different professions and academic backgrounds. Scope management a process where stakeholders need to understand what needs to be done to avoid scope creep. It is a vital part of communication. Burnotein & Van Arsdall, (2003: 5-8) believes that numerous changes in projects are driven by a lack of

communication. His research discovered that 39% of project issues were communication driven, since there are continuous reviews of project deliverables and timelines if there is any miscommunication it can then be cleared. The processes are sequential, then the output of previous stages will then be reviewed before they are used in the preceding stages. It is presumed that if change is managed properly the issue of scope creep will vanish. There are a number of issues that prompts this change. These issues include changes in the market place which may affect product design or product delivery timing. Changes in the client management which may also affect scope as new ideas emerge such as a new mission and vision. The financial position of the organisation also prompts some changes to projects which may have been implemented. This is usually the case with outsourced projects where funds are at the heart of every development.

Type 1	<p>Overlooked Requirements Missed Requirements due to:</p> <ul style="list-style-type: none"> • Inadequate planning (Doll,2001) • Poor requirements analysis (Gulen, 2003), (Haugher , 2007)and (Suresh, 2005) • Late user involvement (Haugher , 2007)and (Suresh, 2005) • Underestimating Complexity (Haugher , 2007)and (Suresh, 2005) • Greenfields Projects (Brenner,2002) • Misunderstandings about SOW (Brenner,2002), (Gurlen, 2003), (Inder and Riverier, 2007)
Type 2	<p>Functionally enhancements Additional features that appear in the form of:</p> <ul style="list-style-type: none"> • Enhancement requests from projects drivers(Doll, 2001b; Nokes and Kelly, 2007) • Developer-included enhancements (Doll, 2001b) • Gold planting (Haughey, 2007; Suresh, 2005) • Perfectionist attitude of developers/suppliers (Brenner, 2002; Gurlen, 2003; Nokes and Kelly, 2007) • Consolidation of multiple projects (Brenner, 2002; Gurlen, 2003) • Desire to avoid conflict/customer pleasing (Brenner, 2002; Grenner, 2003; Suresh, 2005)
Type 3	<p>Changing requirements External influences such as:</p> <ul style="list-style-type: none"> • Third-party products, supporting systems and technologies(Gill, 2002) • Government regulations (Alev, 2000; Gill, 2002; Kapur, 2004; Nokes and Kelly, 2007) • Market and trend changes (Alev, 2000; Doll, 2001b) • Competitive Positioning and emerging opportunities (Kapur, 2004)

Table 2.9. Summary of sources of scope creep (Quah & Prabhakar, 2008: 15)

2.9. Feasibility Analysis Of Scope

Badiru (2012: 67-69) brought in a slightly different approach to combat scope creep, the scope feasibility study. This was generalised by other authors while some do not even mention it, some mention it either in the project initiation and planning phase. Feasibility studies need to take place in a number of areas to avoid scope creep. Technical feasibility is where the process is tested against the current state of technology. Managerial feasibility looks into the infrastructure of the process to achieve and sustain the process improvement. The collaboration between management and employee involvement is critical as this tests the level of cooperation and this determines the level of cooperation between the two. Economic feasibility and financial feasibility looks into the ability of a project to generate economic benefits and raise funds. Social and cultural feasibility looks at the availability of technical prowess and the compatibility of projects with cultural setup. Another area is safety and political feasibility, where the effects of the project on the environment and political landscape is studied. Some however are specific to certain projects and may not apply to others. Others, though, prefer in-house projects rather than outsourced projects.

Butterick (2009: 89-106) argues that what is required is simply a proposal document to identify the need. This is a short document outlining the requirements that the proposed document will have to meet. As well as the benefits, impacts on the market, technology, operations and the estimates. This will then be followed by initial investigations whose output will be the business rationale which will answer questions such as why the project is needed the options available, how it will be conducted and who will complete the task. The final stage will be a detailed investigation which should produce the scope of the project. However, he pointed out that the document will continuously change due to the changing environment without any mention of scope creep. Although in agreement, Meredith et. al. (2006: 14-16) suggested an evaluation stage which is at the end before the closeout. This is at a stage where scope creep would have already been realised, and the damage would have been done.

Steyn, Carruthers, Dekker, Du Plessis, Kruger, Kuschke, Sparrius Van Eck, Visser (2015: 29) concurs that feasibility studies should be done; however they introduced another term called pre-feasibility, wherein which the technical aspect will be dealt with. In some instances, the project manager may scope the project, especially if it is an e-commerce project. However, the developers will estimate the time that it will take to finish the phase or cycle. This will result in more loopholes because the developer may expertly alter the project, without the client's permission. This will be done to a point where the value added does not correspond to the added costs of executing that particular development. Additions are caused by the developer and not the client (Heaton, 2016).

It would seem up to this point that scope creep is entirely negative but (Larson & Grey, 2011: 105), believe that scope creep can produce positive results. Scope can represent opportunities, especially in outsourced projects. Product development thrives on scope creep for example, when a small feature is added that may create a huge competitive advantage. A small change to a production process may hasten the process and get the product to the market earlier and reduce costs. That supports the notion that changes during project life cycle will definitely occur, and some are beneficial to project outcomes. Only those that have negative effects are the ones that should be avoided.

2.10. Dynamics Of Scope Creep

The amount of money invested may limit the amount of work that should be done. This is a common phenomenon in IT development projects, and outsourced projects. This then may have some form of direct relationship to the definition of project scope from the initial scoping perspective. The larger the project the more people, departments, agencies are involved, and the governance will also become more complex. Large IT or e-commerce projects involve people from different departments with their own management department and priorities. Several sub-projects may end up competing for resources, developers, database programmers, worsening the governance of that particular project. Competition of limited resources intensifies as sub-projects expand, making the management of the whole project a challenge (Gray & Larson, 2011: 34-35).

The complexity of some projects threatens the accuracy of the estimates and scoping. As deadlines approach pressure rises and people begin to cut corners to keep the project on track. Cutting corners in e-commerce projects results in inappropriate parallel development. In construction, it may mean developing a poor structure or accepting the lowest bid without ensuring that the vendor is qualified. Cutting corners leads to several issues of scope and in the end, a particular part of the project that would have not been scoped, will have to be done. Smith (2010: 490-491) and Gray, and Larson (2011: 296) regard it as a student syndrome where the project is delayed until the last minute and in the end everything is rushed.

There are other assumptions that are made which add onto the dynamics of scope. Some of the developers with IT backgrounds believe that by managing the parts of the project one is also managing the project. Many developers ignore the system-wide impact, due to minor decisions which undermines the preliminary time and cost estimates (Flev, 2017:2). Some assume that schedules and cost can be accurately predicted in before the work is done related to scope (Watt, 2012: 12). When projects take longer, the response is usually that

there were a few additional features added. Others deliberately add more features to justify the increased cost or time whereby compounding scope creep. Further examples include situations where a new client comes and in trying to establish a relationship. In the process of strengthening the relationship, some discussions may easily be translated in accepting additional requests from the client in the future. A positive relationship can be nurtured but it is short lived and either the quality or revenue or both are sacrificed (Heaton, 2016).

2.10.1. Traditional Project Management Issues

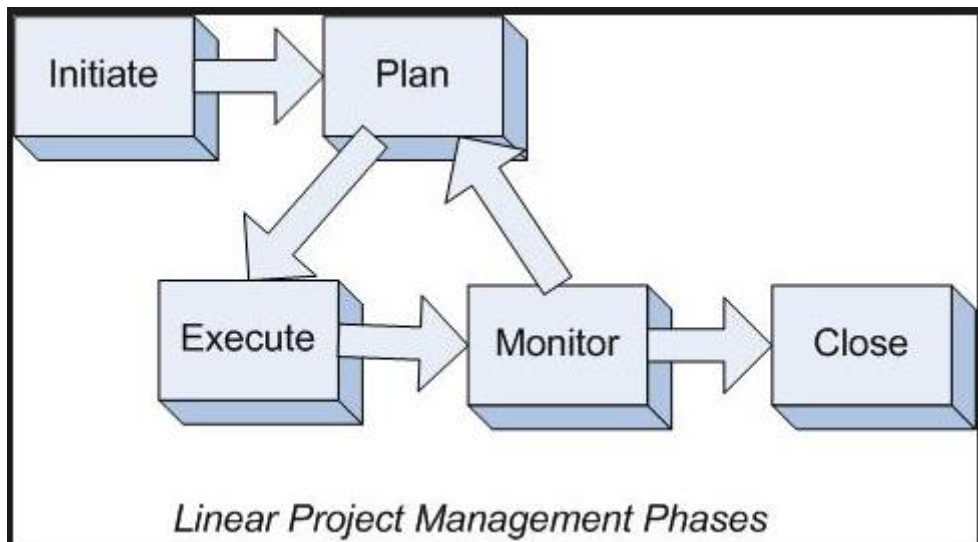


Figure 2.10. Linear Project Management Phases (Madhuri et. al., 2014)

Most explanations on scope creep come from a linear sequential view of projects and how they are managed. PMI defines project management as a temporary endeavour with a definite beginning and an end, thus defined scope and resources. The assumption is that, one phase is completed before the next one begins. Should there be a problem occurring, teams will have to return to the previous stage. Based on the sequential framework, scope creep occurs when the planning phase is incomplete. Some even suggest that if project deliverables are not defined fully upfront or if work breakdowns are not clear, the project will exceed its original cost and schedule projections. Others attribute scope creep to ill-defined resource requirements or insufficient funding. Another set of explanations focuses on the problems that occur during the controlling phase such as poorly documented changes to project specifications.

The explanations maybe correct to some extent but even if teams strictly adhere to this project management framework and complete each step with precision, scope creep will still occur. As such, the total elimination of scope creep is therefore impossible (Madhuri et. al, 2014). Linear project management is necessary but the frequency of scope creep shows that it is insufficient to prevent the problem. The weakness of linear project management is

that it does not consider large and complex systems. There is an appreciation that projects are becoming larger and more complex. Subsequently, the time in which to complete projects is not enough (Kerzner (2015: 25-33). Currently there are no mentions of how traditional methods are going to handle such issues. Reliance on traditional methods, especially those needed to combat scope creep, is a failed approach. Projects that are complex consist of so many interdependencies. These interdependencies are extremely dynamic systems, involve manifold feedback systems, encompass non-linear relationships and include hard and soft data.

These systems are not properly understood before or while they are occurring the reason being since they are done separately and tested separately, only when implementing a full component will they be tested wholly. Prediction and control are therefore impossible. Thereby creating a possibility of scope creep the governance of complex projects is so complicated that it makes it difficult to define project deliverables, or grasp resource requirements ahead of time.

2.11. E-Commerce And E-Commerce Projects

2.11.1. Ecommerce

After the invention of the internet, businesses used information technology mainly to contact clients, suppliers or intermediaries or use paper forms and data capturing through networked computers. In today's world businesses of all sizes are integrating web based technologies and applications to share information and process transactions. Businesses and organisations are now competing on the internet to get strategic advantage and extend their influence (Sousa, 2015: 253-260). E-commerce is a term broadly used to cover all business activities that use the internet as a platform for guiding exchanges or for making relationships and maintaining them. Internet business includes but is not limited to customer relationship management, e-tailing, search engines, online auctions and hubs (Chipp & Ismail, 2008: 5).

Valaciach, Scheneider and Behl (2012:173) agree by saying that companies are exploiting the web to reach out to a wider customer base, and offering a wide range of products. Therefore, by creating a closer relationship with customers, this is known as e-commerce, or e-business or Web-enabled Business. E-commerce is associated with the buying and selling of products, and services through the computer network. The internet has transformed traditional business operations into a very competitive market place. Most companies are strategically positioning themselves to compete on the e-commerce platform. Some are conducting their business on the internet without having a physical office (Smith, 2011). E-commerce is classified by the parties involved. Business to Business (B2B) is trading among businesses online and consumers are not involved. It involves large transactions and is

rather complex. An online survey indicated that about 25% of B2B companies have an e-commerce site.

Business to Customer (B2C) is another classification which involves clients and businesses. In which clients search, read catalogues, and buy goods online. The difference between B2C and B2B is that it is visible to customers (Booyesen, 2018).

Contrary to popular belief that e-commerce is about buying and selling online only, Valaciach, Scheneider and Behl (2012:184) believe that the even the events that lead to the purchase of the product, and after sales support is part of the ecommerce.

2.11.2. E-commerce Projects

To prepare a business to operate online is a very complicated project and requires continuous improvement. The requirements are so vast and continuously change to meet the changing needs of customers. Developers need to create systems that allow for global information dissemination, integration, mass customisation, interactive communication, collaboration and transactional support. Social media interaction also is incorporated. Scoping such projects is complicated and the length of time for such projects is short. Therefore, prolonged developments may make it obsolete before it is implemented (Valacich, Sneider & Behl, 2012: 173-178). Rainer, Prince and Watson (2015: 262-285) further state that certain mechanisms need to be put in place to implement Ecommerce projects. Mechanisms which includes but not limited to electronic catalogue, Electronic Auction, E-store Fronts, E-malls, E-marketplaces, Electronic payments mechanisms and Electronic checks.

With the traditional project management methodologies, creating scope and managing the scope and avoiding scope creep may be a challenge. The projects are complex and are ever changing and are not linear in nature because there are too many interactions.

2.11.3. Outsourcing e-commerce projects

Although traditional retail stores still dominate the South African market more and more consumers are now beginning to choose online shopping options for cheaper technical goods purchases. Takealot.com is one such company whose growth has been hinged on e-commerce. The e-commerce market in South Africa grew by 52% in 2017 (Booyesen, 2018: 3). That accounts for 6.9% of customer spending by rand value. Therefore, doubling the statistics of 2015. The European market is now much inclined to e-commerce and South Africa is fast moving with no sign of a decline. Online spending is growing, making e-commerce projects very complex and so outsourcing the needed skills is the only way to retain market dominance and outclass other competitors. Online spending by 2017 was

projected to be over 52 billion dollars of which 10 billion dollars was realised according to Geraldine Mitchley, Visa senior director for digital solutions in sub-Saharan Africa. The business fraternity is well aware of the untapped potential and many are seen to be flocking towards the e-commerce platform.

3. CHAPTER 3: Research Methodology And Methods

Introduction

According to Welman and Kruger (2001: 46) a research study is conducted to investigate a research question or hypothesis, through the collection of data from the object of inquiry. The results obtained should shed some light on the research question or hypothesis. This chapter therefore, will examine the research design and the methodology that was used in this research study. The research question, along with the secondary research questions will be presented to reach a conclusive analysis. The research methodology will be a non-systematic mixed methods approach and its purpose is to explore the challenges of managing scope creep in e-commerce projects. This method is more applicable for this study because there is no hypothesis to be tested as there would have been in a standardised qualitative research study. Theory is therefore a result, not the starting point as with standardised qualitative research.

3.1. Research Problem

The research problem was adequately addressed in chapter one. The understanding available is that there is literature to address the issue of scope. It then follows that scope creep should be addressed properly using the available literature. The issues arises then as to why is it that scope creep is still a challenge. The researcher therefore pursued a desire to find the challenges of managing scope creep in ecommerce projects.

3.2. Research Questions

Questions are then formulated in a way to understand how projects are being managed to create a clear understanding of the reasons behind project failure.

3.2.1. The Main Question

The main research question for thus study wanted to know the challenges of managing scope creep in projects in IT projects?

3.2.2. Research Sub Questions

The research question had three secondary questions that were asked in order to explore the phenomenon further and to provide solutions to it What are the scope management loopholes which cause scope creep?

What are the control measures that need to be put in place in order to manage scope creep?

What steps need to be taken to prevent scope creep from the onset?

The research question should be understood as an underlying guide to the questions that were asked before the construction of research instrument.

THE MAIN QUESTION:	What are the challenges of managing scope creep in Ecommerce projects	
sub question	Research Method(s)	Objectives
What are scope management loopholes, which causes scope creep?	Questionnaire	To establish causes of scope creep, all IT related projects
What are control measures that need to be put in place to manage scope creep?	Questionnaire	To establish the effectiveness of the current control measures to the the known causes
What steps that needed to be taken to avoid scope creep from the onset?	Questionnaire	To establish if the measures inplace could be used to to avoid scope sereep from the onset

Table 3.1. Research Sub Questions

3.3. Research Design

A research design is the blueprint according to which the research participants are selected, and information is collected from them (Welman & Kruger, 2001:46). Flick (2011:65) explained that there is need to answer research questions as much as possible. This research study was a comparative study. It compared the perceptions of different stakeholders with regards to scope and scope creep. Van de Bunt and de Bruijn (2006: 621) explained that the objective of a comparative analysis is to search for resemblance and variance. Research methodology according to Leedy and Ormrod (2001:14), is simply the approach that a researcher embarks on to accomplish the research project's objectives. The "how" aspect of the research is addressed by the research method. That includes the procedures and various techniques of sampling, collecting, analyzing and interpretation of data. The research methodology that was used in this research study incorporated a mixed method approach. The notation that there are either qualitative or quantitative research methodologies is generally an umbrella term for a number of other methods, and theoretical backgrounds on either of the two sides. An outline of the two approaches is, however, important to clearly differentiate and clarify why the mixed method approach was used in the research.

3.3.1. Quantitative Research

When studying a phenomenon, the concept is implied theoretically as an initial step. The empirical study is developed into a hypothesis that will be tested. This procedure is however, necessary in finding the differences among persons concerning the characteristics in the study (Bacon-Shone, 2016).

In some cases the theoretical aspect cannot be immediately uncovered for measurement. Instead indicators that permit the measurement are used in place of a concept which will lead to the concept being operationalised. This will only be done with specific questions and specific alternative answering. Quantitative research is interested in casualties where the topic for research in which the influences of other circumstances are excluded as far as possible. The instruments are, thus, tested for consistency in their measurement, to achieve generalised results. The results should therefore be valid beyond the situation in which they were measured. Quantitative research works with descriptive statistics, and numbers. The strategy is towards a goal oriented procedure aiming for the objectivity of the results by standardising all steps and postulating inter-subjective variability as opposed to central quality assurance (Leedy, 1993).

3.3.2. Qualitative research

There are different types of research designs under a qualitative paradigm which are:

Case study and historical study focus on the study to understand a single situation. This could be a process, a program or an activity. A variety of material is collected in a specific and bounded time. The same is used for collecting historical data to understand and learn from past situations. Narrative case studies' focus is simply to have a description of the lives of individuals and get the meaning from them. Grounded theory studies focus on developing an understanding of a phenomenon or state so as to able to develop a theory or a model for items such as factors a form of interaction, or a process. Phenomenological studies focus on the study of human experience at an experiential level. It is about understanding the essence or meaning of the experience (Shuttleworth, 2008).

This research study used a case study approach. This method highlights what brought the result. Individuals, processes or events are studied in depth over a given period of time by collecting data through different tools such as interviews, questionnaires, observations, documents, past records or electronic media. Case studies are in depth detailed histories of the lives of people or descriptive accounts of imperative aspects of their lives. This is also known as case histories and they are dependent on either interviews, questionnaires, observational or archival materials. This is believed to be the only option when one attempts to understand an individual's experience, especially when an individual is an expert and has rare or unusual characteristics (Dunn, 2010: 49). In order to get rich information about scope creep, the case study of an e-commerce project management company in Cape Town was used.

Case studies are proved to be a rich source of ideas when little is known about an area of investigation. The histories of psycho-analysis in the 19th and 20th centuries are proof of that. Case study methods are thus suitable to explore the challenges of managing scope creep in project management projects. This is because there are several projects that are run concurrently on e-commerce platforms. These projects involve various portfolios, software development, managerial projects accounting projects and web development projects to mention a few. This then allows for a thorough investigation of the causes of scope creep. It will also allow for differing views when looking at in-house projects and outsourced projects. The platform is therefore rich in all facets of projects, and so a qualitative research approach on such matters should yield usable, and reliable results. In this research study the challenges of exploring scope creep in a project management company in Cape Town was explored.

A questionnaire was used in this research study. This was due to several advantages compared to other sources of collecting information, such as archives and interviews. Archival involves the use of pre-existing data usually collected for other reasons. Thus an archive is where the records are kept and maintained. Interviews though, may yield probably the same results as a questionnaire. However, they may not produce results that are extensive, and trusted, due to some factors such as people prefer to write instead of talking in interview. They may not want to be known that they are the ones who revealed particular information. Therefore, in order to counteract that, questionnaires are used. In order to collect information on what people's experiences are regarding the managing scope of projects. The questionnaires were therefore used in the case study. Questionnaires were given to all the participants involved in projects, from management, to developers and project managers (Sarandakos, 2005: 288). Case studies grant researchers with the plasticity of using numerous research instruments, and finding many layers of data by utilizing multiple research instruments making it a preferred option in this research.

Yin (2002) states that a case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially between the boundaries of phenomenon and co-phenomenon. He favoured case studies to surveys due to their limitations in investigating, because it is difficult to contextualise the phenomenon. There are three types of case studies, namely explanatory, descriptive.

Each of which has five components, research question (s), the proposition or intention, The unit of analysis, data collected link to the intention and the interpretation of the findings.

In the case of qualitative research, there is no need to start from a theoretical model of the issue under study and there is no need for operationalisation and a hypothesis. The research design selects participants purposively and integrates small numbers of cases according to their relevance. The qualitative research approach either addresses issues by grasping the subjective meaning of issues from the perspectives of participants or from the hidden meanings of a situation that is being studied. The study of cause and effect is not valued to be more relevant than describing the complexity of situations, social practices and the life world of participants. The intention is not to put trust in testing what is known but discovering new aspects in the situation that is being studied. The situation is designed to be as open as possible, and therefore not standardised.

Theory	To be tested as a starting point	As an end point to be developed
Case selection	Oriented on statistical representability, ideally random sampling	Purposive according to the theoretical fruitfulness of the case
Data collection	Standard	open
Analysis of data	Statistical	interpretative
	In a statistical sense to be populated	In a theoretical sense

Table 3.2. Qualitative research

3.3.3. Mixed method research

There are six mixed method design strategies developed by Dr. John Creswell (2003) who is an expert in mixed methods research.

Sequential Explanatory Design which is a two phase design, where quantitative data is collected first, then qualitative data. This is merely so as to use qualitative results to interpret the findings from the quantitative phase. Sequential Exploratory Design which is the opposite of explanatory. Qualitative data is collected first and then the quantitative data, and this is done to develop an instrument, such as survey, to identify variables. The use of information collected from journals can be a good example of this design. Sequential Transformative Design this also has the two phases but allows the researcher's theoretical perspective to determine the order of data collection. The results are then integrated at the end of the study. In Concurrent Triangulation Design both qualitative and quantitative data are collected concurrently in one phase, but data is analysed separately rather than compared or combined. This is mainly useful when overcoming the weaknesses of one

method with the strength of another. Concurrent Nested (Embedded) Design gives priority to one approach while the other provides a supporting role. The imbedded design usually would address a different question rather than the primary question. In Concurrent Transformative Design both quantitative and qualitative data is collected concurrently and the perspective in the research question is the guiding tool.

The mixed method approach was chosen in order get the best of both research designs. A qualitative research design (see section 3.4.1) assisted in having a detailed and an exact analysis of the scope creep cases, where participants had more freedom to determine what was relevant for them, by presenting the problem in its context. A sequential transformative design was specifically used to alternate between qualitative and quantitative approaches. As a result this would aid the questionnaire to address the issue of scope creep. This was time consuming, however, it was necessary in order to understand the issues of scope creep in IT projects. More especially in e-commerce projects which are both new and may face as many changes because of their nature and complexity. This situation presented the best opportunity to understand the dynamics of scope creep in projects. The data from the questionnaire will be quantitatively analysed, presented into graphs and tables.

3.4. Target Population

A population is a set of objects where all the measurements critical to the researcher are represented (De Vos, Strydom, Fouche & Delport, 2001: 193). Polit and Hungler (1999:37) further stated that a population is a collective or totality of all the members, subjects or objects conforming to a set of specifications. The objects in the population under study are therefore referred to as the sampling frame. A sample of the population is studied in an effort to understand the population from which it was drawn. According to Polit and Hungler (1999:278), there should be a criteria which specifies certain characteristics which people within a given population must possess, so as to be included in the study. The eligibility criteria in this research study was therefore individuals that were involved in the projects of the company under study. In this research study, the population was taken from all project stakeholders of an outsourced e-commerce project management company in Cape Town.

The population consisted of clients who brought their e-commerce projects together, along with the in-house staff who were involved with projects. The client's perspectives allowed the researcher to understand the issue of scope. These perspectives could then be compared to those of developers and project managers.

3.4.1. Sample Size

A sample of 150 people were selected from a population of staff and clients who worked with projects on a daily basis. Some questionnaires were not received on time and some were incorrectly filled. This may have been due to various reasons, some of which stemmed from time. Another reason was, because some participants did not understand how to answer the questions. Others did not complete the questionnaire because they believed that they had no real involvement in certain projects. As a result of this, the total amount of fully completed questionnaires was 107.

There are mainly two rules to consider when considering a sample size. Firstly, consideration based on redundancy or saturation, which involves identifying consistent patterns. There is a level where consistency begins to appear, and it is at that point where saturation is reached. That signifies a sample size. Secondly, how large the sample can be to represent a variation within the target population, that can be used to evaluate the applicable amount of diversity represented (Nastasi, 2004: 4).

Research related sampling refers to the selection of individuals, units or settings to be studied. Quantitative sampling is pro random sampling, while qualitative research is pro purposeful, or criterion based sampling. That is a sample with characteristics relative to the research question. Seaberg in De Vos et. al. (2001: 195) advocates for a larger sample to reduce the probability of sample error. This allows for trust in representativeness, as it is an important aspect of sampling. The research sample therefore uses a qualitative approach where it needs to be represented adequately. Seabong in De Vos et. al. (2001: 195) suggest that a sample size should be big enough to reduce the probability of error. The sample size was 150 project stakeholders. Welman, Kruger and Mitchell (2008: 173) advise that a sample of 150 and above is large enough to give credible results.

3.4.2. Sampling Technique

The sample size must be a good representation of the targeted population. Usually it is impractical to involve all members of the population in research studies (Welman & Kruger, 2001: 46). While it would be much favourable to include all, hence need to have a need to use a sampling technique to get the sample. This research study used a non-probability sampling technique and it is discussed below.

3.4.3. Purposive Sampling

In non-probability sampling, the units of analysis do not have an equal chance of being included (Fox & Bayat, 2007:58). The selection is based on the researcher's judgement. This means that the researcher determines a sample based on the attributes of a population

(De Vos et al., 2001: 202). For the purposes of this research study, the sample was selected using only the employees that dealt with projects and clients. Fox and Bayat (2007: 59) further state that judgement is based upon a researcher's expert opinion.

3.5. Data Collection Method And Research Instrument

A questionnaire was utilised as a tool to gather the essential data from a casually selected organisation. Collis and Hussey (2003: 173) defined a questionnaire as a list of well-thought and cautiously structured questions to solicit dependable responses to research questions. Questionnaires are designed to assist in obtaining appropriate information from the population sample concerned as accurately as possible, to be able to collect and analyse data.

3.5.1. Data Analysis

According to Neuman (2011), qualitative analysis does not use a well-established body of formal knowledge such as mathematics and statistics. The data is relatively vague and context-based. Which means that the data may have more than just one meaning. The researcher does not have to describe specific and verifying formulas. The researcher will have to simply develop explanations which are very close to the context and demonstrate the process casually. This will enable the researcher to eliminate explanations deemed irrelevant or present contradictory evidence. This research study will therefore use a mixed method, as it will use some descriptive statistics.

There are various contexts of data from various sources, so data analysis sketches the flow of information and presentation in this study. To analyse the researched data, there are some steps that need to be considered. Mainly:

- (a) Establishing the exact facts about the case which can be arranged sequentially.
- (b) Grouping the facts into expressive themes.
- (c) Clarification of specific information resulting from documents that correlates to the case.
- (d) Merging the themes that are related to identify patterns that could lead to other concepts.
- e) Blending and simplifying the overall result of the study to draw deductions and set a tone for future studies (Leedy & Ormrod, 2001).

This research study used a narrative analysis which means that the data presents the events from a particular point of view. Data from the questionnaire was analysed and interpreted accordingly. The analysis aimed to identify challenges of managing scope creep in e-commerce projects. This also included daily project management traits and options, given the daily challenges of interacting with project lifetime. The analysis also aimed to establish whether or not scope creep management was actually a real challenge in projects or were

project managers in need of skills or experience, in managing it. Some developers presumed scope creep to be an obvious phenomenon while others views is believed it to be a matter that can be managed properly and entirely avoided.

The analysis's objective was to establish the extent to which the success of projects were affected by scope creep. Also, to determine whether there were factors that could encourage stakeholders to resist the temptation of scope creep in e-commerce projects. Most importantly the analysis wanted to understand the lessons learned and the challenges that were experienced in the daily operations of the projects. Specifically dealing with scope management, and focusing on scope creep. SPSS Statistics is a software package that was used for statistical analysis. This was used because it allows data that comes from any source to be analysed and it can be open in all file formats which are commonly used for structured data.

3.6. Validity And Reliability

Validity is when the measurement tool succeeds in describing the purpose for which it is made for. Reliability is the extent to which the measurement technique used can be trusted to produce constant results based on constant application (Weiner, 2007: 7). Jackson (2009: 70) argued that validity is a measure truthfulness or genuineness. Questionnaires were distributed to all the project stakeholders of the organisation, including developers, project managers and clients. Before administering the final questionnaire and adjustments were made to it to ensure reliability. A valid test by default becomes reliable.

3.7. Ethical Considerations

Research ethics should be more than just the character of the research participants but also any form of scientific misbehaviour and or plagiarism (Terre Blanche, Durrheim and Painter 2006: 61-62). The ethical certificate was sought before the research was contacted. This allowed not only to do the research but also to collect data and to have a mutual agreement regarding the scope and intent of the project. Respondents were well informed the objectives as well as their consent to participate was sought. Confidentiality and anonymity was guaranteed. In support of the above mentioned, the following ethical considerations were applied to the study.

Participation is voluntary, participants can withdraw any time should they wish to. Conversant consent and protection from any form of harm. All information will be treated with utmost confidentiality and respondents will remain anonymous. The information will only be used for research purposes and a fair treatment of all participants is assured.

3.8. Purpose And Significance Of Research

This research study was conducted to understand the challenges of managing scope creep. The general understanding is that scope creep is an issue in every project. This despite the research and literature on how to manage it. It has been established that it is still occurring. The case was taken from an e-commerce project where the scope issues needed more attention because of the nature of the projects and the environment in which the projects are operated in is always changing. It is important for project stakeholders to try and look at scope creep critically and to understand the real causes of scope creep in fast paced projects.

The research will contribute to researchers who would be interested in reviewing the subject of scope creep. More research may assist in highlighting critical areas of scope creep after the outcome of this study.

This research study will also assist project managers to try and avoid scope creep. It has been proven that avoiding it may not eliminate it. However, a research study that identifies what may cause project managers, developers, and all stakeholders to struggle with scope creep, could aid with possible solutions as to how to avoid it. This research study may help to better the understanding of scope creep, to reduce or limit the effects of scope creep.

The research will add in the learning, and training of future project managers. As well as to improve the skills of learners and lecturers to be effective in reducing scope creep. It is hoped that research will add to the body of knowledge because it will be used for future reference by academics. The findings should improve project management and alleviate the failure of projects due to scope creep. This research study is expected to provide a practical solution to the problem of project failures due to scope creep in e-commerce or any other project.

4. CHAPTER 4: *Analysis And Interpretation Of Results*

Introduction

Data analysis is a process to gather information and transforming it to data that is useful for the research (Ader, Mellenbergh & Hand, 2008). This chapter will discuss the statistical analysis of the responses obtained from the questionnaires that were administered to the participants. The questionnaires were administered in order to explore the perspectives of project managers, and all other e-commerce project stakeholders regarding scope creep. It is necessary to analyse the data that was collected in order to answer the research question. In essence this chapter will discuss and debate the analysis of the data, whilst interpreting the findings. The data will also be tabulated for clarity.

4.1. The research questionnaire

The questionnaire was divided into 3 sections.

The first section, section A, consisted of general questions regarding scope management and change management. This section's objective was to gain a general understanding of scope from the respondents. Secondly, section B consisted of change management questions. This creates the basis to which scope creep management is treated by the organisations, and shows how principles of scope control measures are used in e-commerce projects. Finally, section C comprised of practical questions regarding the management of scope creep.

4.2. Analysis

Of a total of the 150 questionnaires distributed, only 107 questionnaires were completed and eight questionnaires were not properly completed. Some questionnaires had missing information and others were answered by people who were not involved in projects. As a result of this, important information regarding practical experience was missing. Therefore, the final number of questionnaires used was 107, and results below are tabulated using their data. The data gathered was subjected to frequency counts. That means that the responses from each individual question were added together using IBM SPSS software to identify the highest frequency of occurrence. That is the number of times a particular response will occur. The responses were quantified and presented in percentage format.

4.3. Section A:

4.3.1. Question 1:

Do you sometimes change project scope/requirements?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	89	83.2	83.2	83.2
	No	18	16.8	16.8	100.0
	Total	107	100.0	100.0	

Table 4.1. Do you sometimes change project scope/requirements?

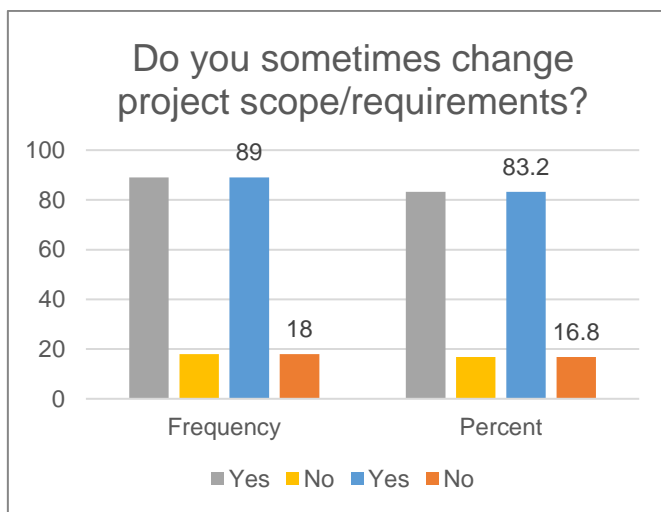


Figure 4.1. Do you sometimes change project scope/requirements?

The targeted population was 150, however, the total number of participants captured was 107 (71%). Table 4.1 and Fig 4.1 show that 83% of the participants admitted that they sometimes changed scope/requirements after the project began. Only 17% did not agree that there was a change in project scope once the project started. While there may be reason to suspect that project scope changes are unavailable there is still a reasonable percentage who believed that scope did not need to be changed.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes all	19	17.8	17.8	17.8
	Yes some	85	79.4	79.4	97.2
	No	3	2.8	2.8	100
	Total	107	100	100	

Table 4.2. Are the changes in your project recorded?

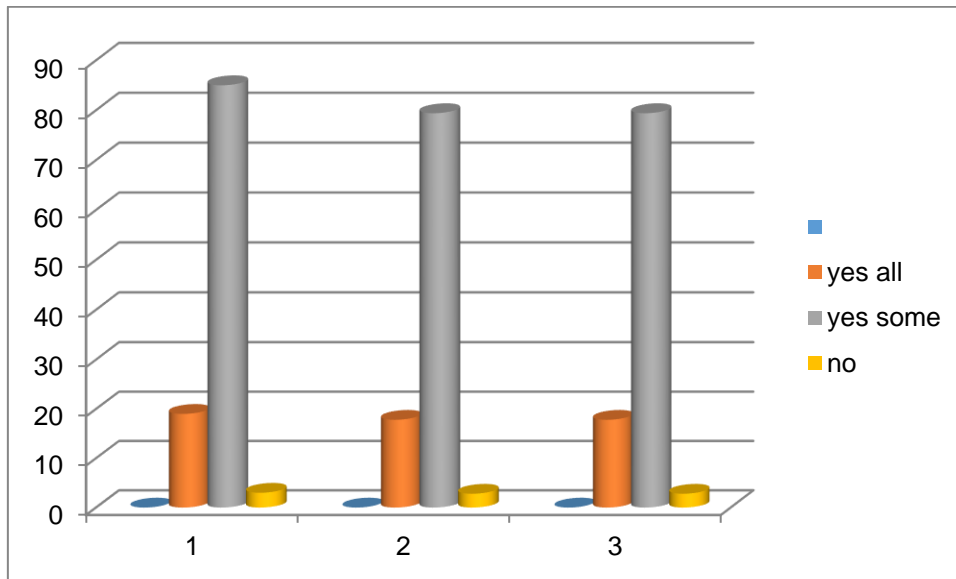


Figure 4.2. Are the changes in your project recorded?

This question wanted to follow-up on the participants that answered yes to the previous question. However, it created an assumption that every participant said yes and so there may have been some changes besides scope changes.

4.3.2. Question 2:

Are changes in the project recorded? Three options were available. Yes, yes to some, or no. This aided the researcher to understand if there were policies put in place that could deal with any scope changes. 17.8% of the participants believed that all the changes were recorded. 78.4% believed that some changes were recorded. This may suggest that some were not recorded and, therefore, means that either there is no need to record everything, or it is not feasible to record all the changes in e-commerce projects. 2.8% believed that there was a need to record changes at all.

Question three was designed in such a way that the participants would select the main reasons for project changes in e-commerce projects. Possible reasons for this were listed an, the participants were not limited to only one reason. Table 4.3 A. to Table 4.3 F. are tabulated responses per possible reason.

4.3.3. Question 3:

What are the causes of project changes in your projects? Tick one or more

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	75	70.1	70.1	70.1
	No	32	29.9	29.9	100.0
	Total	107	100.0	100.0	

Table 4.3. 3A New regulation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	89	83.2	83.2	83.2
	No	18	16.8	16.8	100.0
	Total	107	100.0	100.0	

Table 4.4. 3B Error in project scope definition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	91	85.0	85.0	85.0
	No	16	15.0	15.0	100.0
	Total	107	100.0	100.0	

Table 4.5. 3C Value addition change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	75	70.1	70.1	70.1
	No	32	29.9	29.9	100.0
	Total	107	100.0	100.0	

Table 4.6. 3D Work around due to risks encountered

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	48	44.9	44.9	44.9
	No	59	55.1	55.1	100.0
	Total	107	100.0	100.0	

Table 4.7. 3E Client see the outcome and want change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	80	74.8	74.8	74.8
	No	27	25.2	25.2	100.0
	Total	107	100.0	100.0	

Table 4.8. 3F Adjusting activities

	Table 3 A	Table 3 B	Table 3 C	Table 3 D	Table 3 E	Table 3 F
Yes	70.1	83.2	85	70.1	44.9	74.8
No	29.9	16.8	15	29.9	55.1	25.2

Table 4.9. 3G Summary of responses to question 3

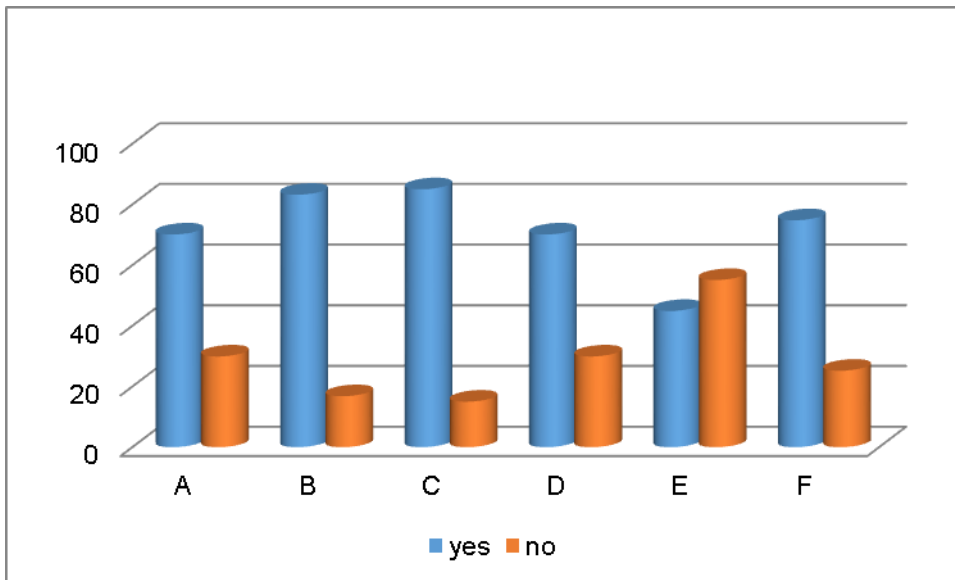


Figure 4.3. 3F Summary of responses to question 3

Table 4.9: is a summary of the responses. 70.1% agreed that the new regulations caused changes to scope. This may be one of the sources of scope creep. 83.2% also agreed to some errors in scope definition, whereas 85% believed that on top of all the other agreed causes, most changes were value addition changes. 70.1 % also felt that because of the nature of IT projects, errors and debugging or risks encountered, were also a cause of scope changes. 44.9% believed that after clients changed their minds, because they saw the results, they preferred to have some changes applied to the scope. 74.8% of the participants felt that some changes were due to adjustment of activities for various reasons.

4.4. Section B

Action on changes

Given that a bigger percentage of respondents agreed that the changes existed, the literature seems to support their responses, they further confirmed that the changes were recorded. It would probably be crucial to find out how they being recorded. It is at the centre of this research study to explore how stakeholders treat changes in e-commerce projects, based upon the the knowledge that the changes are frequent.

4.4.1. Question 4:

If there is a need to change the project scope, what control measures are there, or how do you manage scope changes? Please tick where applicable.

A set of proposed actions are listed and the respondents could choose some, or all of the available answers, in the categories of Strongly Agree, Agree, Neutral, Strongly Disagree, and Disagree.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	32	29.9	29.9	29.9
	agree	41	38.3	38.3	68.2
	Neutral	29	27.1	27.1	95.3
	Strongly disagree	1	.9	.9	96.3
	Disagree	4	3.7	3.7	100.0
	Total	107	100.0	100.0	

Table 4.10. 4A Fill in the scope change request

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	32	29.9	29.9	29.9
	Agree	48	44.9	44.9	74.8
	Neutral	18	16.8	16.8	91.6
	Strongly disagree	1	.9	.9	92.5
	Disagree	8	7.5	7.5	100.0
	Total	107	100.0	100.0	

Table 4.11. 4B Document and justify scope

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	27	25.2	25.2	25.2
	agree	54	50.5	50.5	75.7
	Neutral	23	21.5	21.5	97.2
	Strongly disagree	3	2.8	2.8	100.0
	Total	107	100.0	100.0	

Table 4.12. 4C Review the changes request

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	30	28.0	28.0	28.0
	agree	50	46.7	46.7	74.8
	Neutral	19	17.8	17.8	92.5
	Strongly disagree	6	5.6	5.6	98.1
	Disagree	2	1.9	1.9	100.0
	Total	107	100.0	100.0	

Table 4.13. 4D Approve the request

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	8	7.5	7.5	7.5
	agree	19	17.8	17.8	25.2
	Neutral	17	15.9	15.9	41.1
	Strongly disagree	41	38.3	38.3	79.4
	Disagree	22	20.6	20.6	100.0
	Total	107	100.0	100.0	

Table 4.14. 4E Just apply the change without changing scope

	Table 4A	Table 4 B	Table 4 C	Table 4 D	Table 4 E
Strongly Agree	29.9	29.9	25.2	28	7.5
Agree	38.3	44.9	50.5	46.7	17.8
Neutral	27.1	16.8	21.5	17.8	15.9
Strongly Disagree	0.9	0.9	2.8	5.6	38.3
Disagree	3.7	7.5	0	1.9	20.6

Table 4.15. F Summary of responses

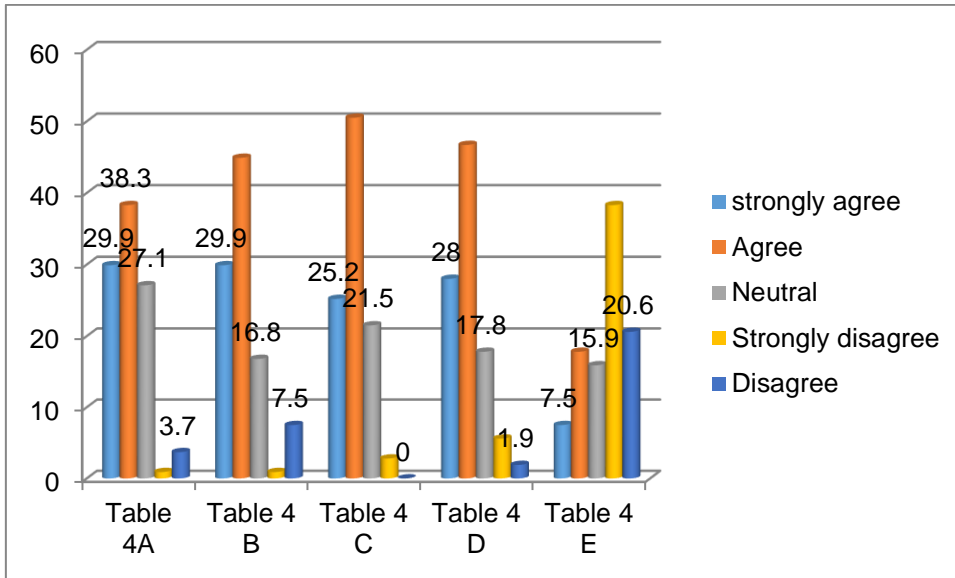


Figure 4.4. Summary of Responses

68.2% of the respondents believed in filling in the change request to try and control scope creep. 27.1% neither agreed nor disagreed, which could mean that change request, according to them, was not important. 4.6% did not fill in a change request. 73.9% felt that there was need to document the request and to justify it. 16.8% of the respondents believed that documenting the request and justifying it served no purpose. Therefore, completing the request or not was the same. 8.4% believed that it was not necessary to document the request at all. 75.7% felt that there was a need to review the change request in order to determine whether, or not, there was a need to consider. However, 2.8% did not agree to the review process and 21.5% did not believe that reviewing it added any value to the change management process. 74.7% believed that when a change request arrived, it should be approved in the end. 17.8% did not deem the approval process necessary and 7.5% did not agree with the approval process at all. 58.9% respondents believed that applying the changes without changing the scope, was not possible while 41.6% thought otherwise. The results here show a very complicated dynamic within e-commerce projects. Developers have a bigger influence, because they apply the changes to the projects. As for the organisation being outsourced, some participants responded in a manner that suggested that they were pro-business and hence the client's needs should be satisfied first. Others were neutral, because they did not make the decisions. They were more likely to be working due to authoritative instructions. This could be a source of scope creep due to the diverging views of the respondents.

4.4.2. Question 5:

Indicate your level of agreement/disagreement to the following statements.

In trying to understand how project managers and stakeholders understood the effects of scope changes, a set of questions were asked with regards to issues of cost, schedule, communication, developers' attitudes, and the effects on market changes. The responses are tabulated in tables 4.16 to 4.27 and the summary table 4.16 represents the combined responses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	14	13.1	13.1	13.1
	Agree	70	65.4	65.4	78.5
	Neutral	21	19.6	19.6	98.1
	Strongly disagree	2	1.9	1.9	100.0
	Total	107	100.0	100.0	

Table 4.16. 5A Changes in project activities change project costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	14	13.1	13.1	13.1
	Agree	67	62.6	62.6	75.7
	Neutral	26	24.3	24.3	100.0
	Total	107	100.0	100.0	

Table 4.17. 5B Change in project activities change project schedules

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	6	5.6	5.6	5.6
	Agree	48	44.9	44.9	50.5
	Neutral	53	49.5	49.5	100.0
	Total	107	100.0	100.0	

Table 4.18. 5C Changes in project activities are communicated to the entire team

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	8	7.5	7.5	7.5
	Agree	29	27.1	27.1	34.6
	Neutral	56	52.3	52.3	86.9
	Strongly disagree	8	7.5	7.5	94.4
	Disagree	6	5.6	5.6	100.0
	Total	107	100.0	100.0	

Table 4.19. 5D There are proper ways to manage scope creep

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	20	18.7	18.7	18.7
	Agree	30	28.0	28.0	46.7
	Neutral	9	8.4	8.4	55.1
	Strongly disagree	12	11.2	11.2	66.4
	Disagree	36	33.6	33.6	100.0
	Total	107	100.0	100.0	

Table 4.20. 5E The changes are done by developers to impress the client, gold plating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	20	18.7	18.7	18.7
	Agree	34	31.8	31.8	50.5
	Neutral	11	10.3	10.3	60.7
	Strongly disagree	6	5.6	5.6	66.4
	Disagree	36	33.6	33.6	100.0
	Total	107	100.0	100.0	

Table 4.21. 5F Changes are proposed by client to suit changing markets needs

	Table 5 A	Table 5 B	Table 5 C	Table 5 D	Table 5 E	Table 5 F
Strongly agree	13.1	13.1	5.6	7.5	18.7	18.7
Agree	65.4	62.6	44.9	27.1	28	31.8
Neutral	19.6	24.3	49.5	52.3	8.4	10.3
Strongly disagree	1.9	0	0	7.5	11.2	5.6
Disagree	0	0	0	5.6	33.6	33.6

Table 4.22. 5G Summary of responses

Fig. 4.5 Summary Of Responses

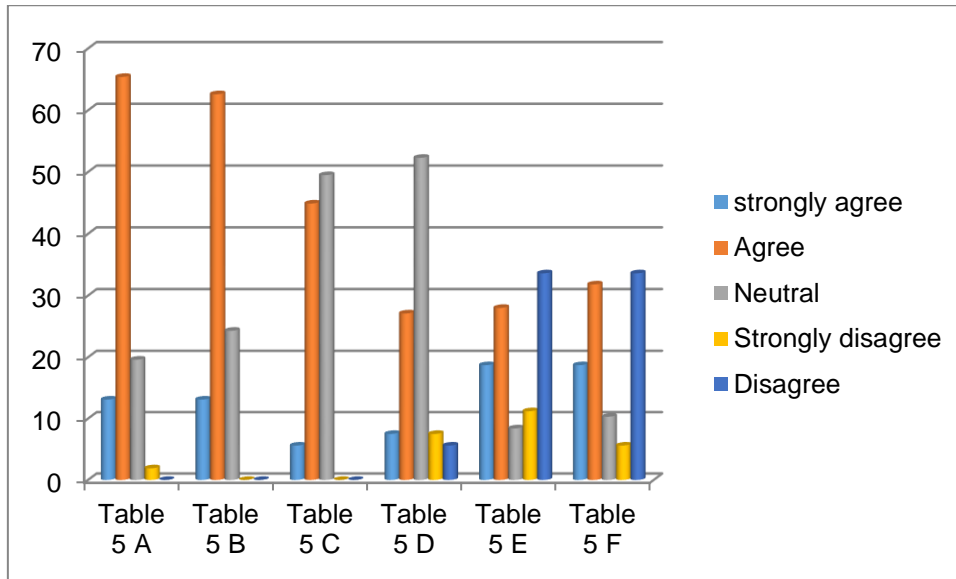


Figure 4.5. Question 5 Summary of responses

78.5% of the respondents believed that there was a strong relationship between project activities and costs while 19.6% were neutral because they were not sure if there was a relationship or not. Only 1.9% did not believe that there was a relationship that exists between a change in project activities, and cost of the whole project. 75.7% believed that there was also a relationship between changes in project activities and project schedule, while 24.3% were neutral. No other respondents disputed that. 50.5% believed that changes in projects were communicated to the entire team while 49.5% were not sure if it was necessary for the communication of all changes to be made to all the teams involved. This may be due to the fact that not all respondents were involved in projects, unless they were doing a particular job. For example, a developer whose duty is solely to develop, may not be knowledgeable of events outside his scope of work.

34.6% of the respondents felt that there were proper ways of managing scope creep, whereas only 13.1% believed otherwise. 52.3% did not believe that there were proper ways to handle scope creep. This could be because project failures were attributed to scope issues, and the the most difficult conversations in e-commerce projects were discussions of scope with clients. This leads to another question of the level of client involvement in project changes. 50.5% of the respondents believed that the bulk of changes were due to proposals made by the client to suit the ever changing market environment in the e-commerce landscape. 39.2% believed that clients did not have any influence, while 10.3% were neutral.

The questions were also designed to look into the practicality of what the respondents were saying. This is presented by a cross tabulation of two sets of questions. The first set required the respondent to say what he or she thought with regards to projects. The other set required the respondents to say what they experienced. This should help in understanding the magnitude of the scope management matrix. This will help in determining with proper conclusive remarks and recommendations for future research.

4.4.3. Cross Tabulations

		Increased risks		Total
		yes	no	
Do changes increase risk	yes	39	21	60
	no	0	47	47
Total		39	68	107

Table 4.23. Do the changes increase risk * increased risks cross tabulation

The cross tabulation column presents the participant's responses based on their perceived view and experience. Of the 107 respondents, 56.1% believed that the changes increased the risks in projects. However, only 36.1% actually experienced that, whereas 20% did not experience it. They argued that it even though it may be possible and it may not occur in the practical sense. Interestingly, of all the respondents who believed that the changes did not increase the risks, none of them actually experienced it.

		Decrease client satisfaction		Total
		yes	no	
Do changes decrease client satisfaction	yes	31	5	36
	no	0	71	71
Total		31	76	107

Table 4.24. Do the changes decrease client satisfaction * decrease client satisfaction cross tabulation

33.6% of respondents believed that the changes decreased client satisfaction but 13.9% have yet to experience it. 66.4% did not believe in the link between the changes and client satisfaction. This creates a perception that so many project managers in e-commerce projects, think that changes affect clients. Yet, there is no valid proof that clients are really affected by it.

		Reorganise the budget		Total
		yes	no	
Do changes cause budget reorganisation	yes	72	8	80
	no	5	22	27
Total		77	30	107

Table 4.25. Do changes cause budget reorganisation * Reorganise the budget cross tabulation

Many of the respondents believed that the budget was reorganised. This was confirmed by 74.8% of the respondents. Only 10.7% of the respondents did not experience it. Even in light of those statistics, 18.6% of the respondents who did not believe that the changes needs reorganised budget, actually accepted it and they have somehow experienced it.

		Reduced client morale		Total
		yes	no	
Do changes reduce client morale	yes	23	9	32
	no	0	75	75
Total		23	84	107

Table 4.26. Do changes reduce client morale * reduced client morale cross tabulation

In some instances, changes are assumed not to be coming from the client. It is for such reasons that it was necessary to find out from the respondents, if the changes actually affected client morale. 29.9% believed that it was true while only 21.5% actually experienced it. 70.1% did not believe that changes will result in reduced client morale. This may however be a distinct characteristic of e-commerce projects where the clients proposes changes merely because of thee prevailing economic or political issues.

		Managed increased work due to changes		Total
		yes	no	
Does changes cause to manage increased work in short time	yes	81	0	81
	no	0	26	26
Total		81	26	107

Table 4.27. Do changes cause to manage increased work in short time * managed increased work due to changes cross tabulation

The cross tabulation is meant to investigate if the changes may increase the length of the project, or if the work will increase in the same amount of time. This will also test the practicality of the answer, 75.7% said yes, and experienced it while only 24.3% disagreed. They claimed to have not experienced it as well.

4.4.4. Findings Of Overall Results

The following observations were drawn from the responses of the questionnaires:

The results reveal that there is no uniformity with regards to how e-commerce projects are run. Project managers and teams alike perceive matters differently, even though they work on the same projects continually. The responses further revealed that the skills set in project management teams were compromised. The reason possibly being that the opinion of what to do, when to do it and was not uniform as would have been expected.

Furthermore, with regards to the fact of the differing opinions of the project teams, scope management was not properly understood. Very few of the respondents believed that scope management actually affected projects regardless of the amount. This also revealed that what people think, and what they experience, are two different matters altogether. A set of questions assisted in revealing that different approaches thus far, have not yielded in the elimination of scope creep, especially in IT related projects.

5. CHAPTER 5: Conclusions And Recommendations

Introduction

This chapter presents the overview, summary of the findings, conclusions and recommendations based on the data that was analysed in the previous chapter. Limitations in this research study were identified and will be discussed. The challenges of managing scope creep, such as frequent scope changes, improperly defined scope, legislative changes and many others were identified and recommendations will be discussed, and presented. This research study utilised a qualitative approach and the main objective was to identify the challenges of scope creep in e-commerce projects.

5.1. Summary Of Previous Chapters

Chapter 1 outlined the background of the research problem. The problem was identified and research objectives were specified. This included a discussion of the research approach and the proposed methods and structure of the research study was also described. The second chapter of this research study contained a literature review of the topic. This review was undertaken in order to establish a theoretical understanding of topic and a basis for developing the research instruments used. In chapter three discussed and examined the rationale for the selected research design and methodology. The sample size and parameters of the study were described.

Furthermore, in chapter four the data presentation, statistical analysis and interpretation of the results.

Lastly chapter five summarised the research study as a whole. Conclusions regarding the topic were drawn, and recommendations were made for future research. Where applicable, future policies on scope management and scope creep in e-commerce projects, were provided as possible solutions.

5.2. Revisiting Research Objectives

The main objective was to find challenges in managing scope creep in e-commerce projects. There are however, other objectives which aided in answering the question of scope creep challenges.

- Identify loopholes in scope management which may cause scope creep.
- To identify what change control measures for effective scope creep management existed.
- To identify the preventable causes of scope creep that should be dealt with from the onset.

5.2.1. Objective 1: To identify loop-holes in scope management this may cause scope creep

It was discovered that the developers, project managers, and clients, together with other stakeholders, did not share the same understanding and expectations of scope. This created a gap in scope management. The issue of clients not being able to fully explain what they want until the project commences, adds on to the challenges of avoiding scope creep. The loophole in this case are the vulnerabilities that are created by differing understandings of stakeholders working together to achieve the single project goal.

5.2.2. Objective 2: To identify control measures for effective scope creep management

Adherence to scope is a basic requirement, and every change must be recorded, and time should be adjusted, and communicated. E-commerce projects are fast paced. Therefore, the way to control the changes may need to be reviewed, as it may speak to the way the developer accomplishes his work however, control measures should be put into place. Recording changes is an old age process which should be adhered to. There is a need to record previous issues encountered, and use them as lessons learned on other projects. This, in effect, may be the best control measure, as it will assist in managing e-commerce projects because of their nature. Clients compete to gain market share, hence they want features without necessarily knowing fully how to scope them. It is therefore because of such reasons that there are challenges of scoping in e-commerce projects.

5.2.3. Objective 3: To identify preventable causes of scope creep that should be dealt with from the onset.

Some project managers are not developers, and may also have limited knowledge of what the e-commerce platform entails. They may also have little knowledge concerning IT development, and yet that forms the backbone in scoping an e-commerce project. Some project managers also are not knowledgeable in business matters, and what drives e-business. These are some of the issues that need to be prevented before a project commences. Other causes of scope creep are associated with clients attempting to compete with other competitors in the industry. There is an invisible hand which pushes the project to begin without a full scope, and it needs to be avoided.

5.3. Major Findings

5.3.1. Findings based on the questionnaires

From the sample of stakeholders, the results revealed that e-commerce projects, because they are creative in nature, posed some difficulties in managing scope. Clients do not fully

understand what they want, but as the project develops, they get better understanding of what they want. This, thus adds onto the initially agreed scope creating a fertile ground for scope creep. There is no uniformity with regards to how e-commerce projects are run, as project managers and teams alike handle matters differently. Even though they work on same projects continually.

The responses further revealed that the skills set in project management teams were compromised. This is due to the fact that, in almost all the respondents the perception of what to do and when to do is not uniform as would have been anticipated.

Further to the fact of differing opinions of project teams, the scope management is not properly understood. Very few of the respondents believe that scope management actually affects projects regardless of a million projects. This also revealed that what people think and what they experience are quite different. A set of questions assisted in revealing that , a different approaches this far have not assisted in the elimination of scope creep especially in IT related projects.

The background of this study was accomplished by studying literature on e-commerce projects of the company under study and other e-commerce projects. The literature also included information from IT projects, both international and national (Cape Town, South Africa). The background of the research problem covered the scope management and challenges that the respondents experienced were picked from the internal and external stakeholders of the organisation. A questionnaire was used to collect the data and the data was analysed using a statistical software package (SPSS). The findings unearthed some disjointed operations between developers and project managers. Their responses were different with regards to how they understood e-commerce projects. The skills set of project managers is underpraised which results in unqualified project managers leading the project teams. Scope management is not as simple as it may seem in books and the e-commerce platform is more complex than other projects.

5.4. Recommendations

In the past one assumed that scope must not change, and if it does so, it must be well documented. It should also be applied accordingly, however, due to the fast paced approaches to projects, the scope will change if anything delays the project. Hence, the time of scoping and the relevance of scope must be related. Project managers must be skilled in both the business and the project including the ability to at least understanding the coding. This will assist in eliminating differing views or expectations in scope management. All e-commerce project managers must themselves be able to code. If not, all project managers

should have a qualification in project management. This will assist in aligning the answers of project managers and the developers. This is, because there is limited documentation regarding a range of new fields of projects. That is why there is a need to do research in particular fields especially IT, be it database management, e-commerce or networking, as the information available is too generalised.

Further research is recommended on, but not limited to the following study areas. The difference between IT project and e-commerce projects, is the the value of outsourcing e-commerce projects and how to scope e-commerce projects.

The main reason for this is because e-commerce project management is developing rapidly, and countless people are now buying goods online. Businesses are growing and yet, there is limited literature on how other fields relate to e-commerce in the best way in order to increase productivity.

5.5. Limitations

The study is focused on the challenges of scope creep in one company. The generalisation may have its own limits, hence the need for further research in other areas. Questionnaires are not the only tools that can be used to collect data. There are many other tools, however, all tools have their drawbacks. Hence the limitation of using only one tool. There is always another drawback with regards to the limited number of people who can respond to questionnaires for various reasons which cannot be avoided.

This research study encountered certain challenges just like many other social research studies. Some of the respondents did not give their perspectives willingly, hence the limited number of responses. Some participants refused, thereby limiting the number of responses that were tabulated. This research study also assumed that e-commerce projects would provide answers to scope creep issues in every project. This may not be all inclusive as a few issues were related to a given type of project.

5.6. Conclusion

In conclusion the objective of this research study was to identify the challenges of managing scope creep in IT projects. Conclusions were made only after fully realising that scope creep has been the reason why numerous IT projects fail. Questions such as what the causes of scope creep are what the control measures are and how it can it be avoided, were all asked and answered. The findings suggested that the skills and qualifications of project managers were questionable. The complexity of IT projects is underestimated, hence PMBOK and other available tools are limited in addressing the ever changing environment of e-

commerce. The benefits of scope creep are an improved reputation, increased revenue and process optimisation. These benefits stem from clients being accommodated when they request for slight improvements in their projects, to meet their competing needs. Clients always expect companies to go beyond scope to a reasonable limit. These are neglected and yet they can create a competitive edge which is needed most in online business. Scope management in general is not properly understood mainly by stakeholders. This creates unrealistic expectations on both IT capabilities and developmental capacity. Outsourcing is currently the only viable option but it also aids to the causes of scope creep in e-commerce projects.

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4. APPENDICES

Templates used will be collected here, together with the questionnaire and the ethics certificate

4.1. Appendix A: Project Scope Statement

Project Name		ProjID	
Type (Con, BI, SM)		Project Sponsor	
Classification (A,B, C)		Project Manager	
Sector / Directorate		Sector Ref #	

Prepared By

Name:

Directorate:

Department:

Address:

Telephone:

Email:

4.2. Appendix B Revision History

DATE	REVISION#	SECTION	CHANGE BY	DESCRIPTION OF CHANGE
18-Oct-2010	1	Approvals	Hammad Khaliq	Pg#9 Removed "Tracking Information"

4.2.1. Document Review/Update Control

Date	By	Position/Role	Description of Changes/Updates/Comments

4.2.2. Project Definition

Project Overview:

NOTE: The second row in each table (and in blue font) consists of help text only (e.g. this row). These rows should be deleted from the final document.

The Project Scope Statement is the key document required to define exactly what the project is: What the service(s) and/or product(s) to be developed are and how we will know when we've achieved those objectives; what is in and what is out of Scope, both in terms of the Project Boundaries and any other data required to further define and support those boundaries. It contains many sections that interact with each other, The Work Breakdown Structure, Boundaries, Assumptions, etc. Therefore completing this document is an iterative process.

Plan to start this document at the same time as starting the Project Charter. Properly defining the end point of the project will better enable the Charter to be as complete as possible at time of signing.

This template should be used for all project Scope Statements, regardless of whether the project is a Construction, Service & Maintenance or BI. It should also be used for all Class A, B and C projects but it is expected that the level of detail will be different for each project classification.

Provide below a high level statement below as to what this project is and why this project is needed and/or what business needs it addresses. This information can be extracted from the Project Charter.

e.g.

This is a Roads maintenance project required in accordance with theobjectives to provide efficient and safer roads Or

This project is to develop systems and procedures to enable the Directorate..... to be able to respond to all enquiries fromin a timely and professional manner.

Product Description:	
<i>Specifically state the actual products and/or services that will be delivered by this project</i>	
e.g. A facility for A report covering A process and tool set for managing..... A review of for Etc.	
Completion Criteria	
<i>List all the criteria that need to be achieved in order for the project to be 'accepted' by the users and for the project to be declared 'completed'</i>	
e.g. drainage network commissioned System transferred to Production User signoff obtained etc.	
1	
2	
3	
4	
Success Criteria	
<i>List all the criteria that would need to be met such that the project could be declared a 'success'</i>	
e.g. Completed on budget Completed on schedule New Road handling traffic flow as specified Zero accidents, etc.	
1	
2	
3	

4	
Project Boundaries	
<p><i>As thoroughly as possible, list all the reports, presentations, drawings, documents, configurations, services, meetings/reviews, objectives, regulation/standards to be met etc. that will be (or not be) part of this project</i></p> <p><i>Very Important:</i></p> <p><i>It is much easier (and makes it much clearer to the reader) to properly establish project boundaries by having listings of both “Inclusions” – or What’s in Scope - and “Exclusions” – or What’s Not In Scope.</i></p> <p><i>This section is the most critical part of this document. Use it to validate and update all of your WBS, constraints, assumptions and risks etc. (and vice versa) and plan to revisit it several times while completing the rest of this document and the Project Execution Plan (PEP)</i></p> <p><i>These listings of Inclusions and Exclusions will also likely be larger depending on the Project Classification.</i></p> <p><i>e.g. (all of the following could be either an Inclusion or Exclusion on your project):</i></p> <p><i>Construction of.....,</i></p> <p><i>Completing an “As Is” assessment and assembling existing documentation for.....</i></p> <p><i>Preliminary Design Report for.....</i></p> <p><i>Meetings with.....in regard to</i></p> <p><i>etc.</i></p>	
In Scope (Inclusions)	

Not In Scope (Exclusions)

Assumptions		
<p><i>Assumptions could relate to internal factors (e.g. availability of internal resources, financial control processes, the organizational culture, etc.) or external factors (e.g. local marketplace conditions, the influences/authority of external regulatory bodies, etc.)</i></p> <p><i>For Class A and Class B projects, include details of the impacts likely if the assumptions prove to be false</i></p> <p><i>e.g.</i></p> <p><i>Internal resources available as/when required will use contract staff (more BD)</i> <i>xyz project.(which this relies on) is on schedule schedule delay</i></p>		
#	Assumptions:	Impact if False:
A1		
A2		
A3		
A4		
A5		

Constraints:											
<p><i>Constraints could relate to internal factors (e.g. availability of internal resources, financial control processes, the organizational culture, etc.) or external factors (e.g. local marketplace conditions, the influences/authority of external regulatory bodies, etc.)</i></p> <p><i>For Class A and Class B projects, include details of who they are imposed by and why.</i></p> <p>e.g.</p> <table border="0"> <tr> <td><i>Must be completed before July</i></td> <td><i>Local</i></td> <td><i>weather conditions</i></td> </tr> <tr> <td><i>Contractor selection must be tendered</i></td> <td><i>MoF</i></td> <td><i>guidelines</i></td> </tr> <tr> <td><i>Must comply with new environmental laws</i></td> <td><i>MoE</i></td> <td></td> </tr> </table>			<i>Must be completed before July</i>	<i>Local</i>	<i>weather conditions</i>	<i>Contractor selection must be tendered</i>	<i>MoF</i>	<i>guidelines</i>	<i>Must comply with new environmental laws</i>	<i>MoE</i>	
<i>Must be completed before July</i>	<i>Local</i>	<i>weather conditions</i>									
<i>Contractor selection must be tendered</i>	<i>MoF</i>	<i>guidelines</i>									
<i>Must comply with new environmental laws</i>	<i>MoE</i>										
#	Constraint:	Imposed by:									
C1											
C2											
C3											
C4											
C5											
Risks:											
<p><i>For all Project Classes, provide details of all the major Risks below and attach the Risk Register detailing recommended risk actions. This should include as a minimum all the Risks listed in the Charter</i></p> <p>e.g.</p> <table border="0"> <tr> <td><i>There might be a shortage of materials during construction</i></td> <td><i>purchase ahead of time</i></td> </tr> <tr> <td><i>Users might not be available to provide requirements.</i></td> <td></td> </tr> </table>			<i>There might be a shortage of materials during construction</i>	<i>purchase ahead of time</i>	<i>Users might not be available to provide requirements.</i>						
<i>There might be a shortage of materials during construction</i>	<i>purchase ahead of time</i>										
<i>Users might not be available to provide requirements.</i>											
#	Risk	Recommended Action									
R1											
R2											
R3											
R4											
R5											

Functional Organizations Involved:

Document all the functional organizations that would be involved in, interested in or impacted by this project and their participation level in the project

e.g.

Planning & Design

Review all contractor designs for tech. compliance

IT

provides the infrastructure for storing deliverables

HR

Will oversee training programs developed etc.

Organization	Participation

4.2.3. Project Milestones

Include below a listing showing the major milestones of the project and any critical dependencies these have to other milestones and/or especially to events outside the control of the project team (e.g. getting MoF approval, another project being completed on time, etc.)

For Class A and Class B projects, a schedule should be developed and attached using a tool such as Microsoft Project Professional (or Primavera if this is the preferred package of project Consultants and Contractors). This would enable the Work Packages to be further broken down into tasks as appropriate and to also capture all the dependencies between Work Packages and/or tasks.

For Class A projects, this schedule should also include the resource assignments for each Package or task and these resources should be leveled across the projects, taking into account any other commitments outside of the projects that those resources might have

The milestone list or schedule contained in the signed version of this document shall be the 'Schedule Baseline' and a copy of this baseline schedule must be kept separately so that comparisons back to this baseline can be made from time to time during the project as required.

#	Milestone Description	Date	Critical Dependencies
1	Project Start		
2			
3			
4			
5			
	Project end		

Attachments / Supporting Documentation
<i>List all documents that exist and support this Charter</i>
<i>e.g.</i>
<i>Business Case</i>
<i>Project Charter</i>
<i>Consultant Contracts</i>
<i>Risk Register, etc.</i>
*Attach WBS in MSProject with this document

4.2.4. Approvals

Project Manager's Signature	
I have prepared/reviewed this Project Scope Statement in accordance to the Project Management System (PMS) and based on the information provided to me in the attached documents and in consultation with the Project Sponsor my project team and other Stakeholders.	
Name	Signature
Date	

Project Sponsor's Authorization and Approval	
I have reviewed and agree with the information contained in this Project Scope Statement	
Name	Signature
Date	

Other Approvals	
Name	Signature
Role:	
Date	
Name	Signature
Role:	
Date	
Name	Signature
Role:	
Date	

4.3. Appendix C: Questionnaire

Introduction

My name is Sulaiman G Maeresera, a final year MTech Project management student, studying at the Cape Peninsular University of Technology. As part of my studies, I am required to conduct a research study in my area of study. My topic is "Scope creep management challenges in an outsourced e-commerce Project Management Company in Cape Town". The purpose of my study is to analyse the effects of scope creep in an outsourced project management company. I hereby do request your permission to collect information from you using this questionnaire. Your responses will be strictly confidential and will be used only for the purpose of this study. Please note that your views/responses will be dealt with respect, honesty and confidentiality. Furthermore, you can withdraw at any time during this questionnaire should you feel so. Your responses and the name of your organisation will be kept anonymous.

Instructions

Do not put your name on any part of the questionnaire.

Please read and complete the questions to the best of your knowledge. Your responses will be analyzed after being coded. You can circle more than one answer where is necessary.

SECTION A

Questions:

In which department do you belong in your organization

When working on your projects do you sometimes change the projects scope/ requirements?

Yes

Are the changes in your project recorded?

Yes all No

What are the causes of project changes in your projects? Tick one or more.

- New regulation
- Error in project scope definition
- Value addition change
- Work around due to risks encountered
- The clients see the outcome and want change
- Adjusting activities

Other.....
.....

SECTION B

If there is need to change project scope, what control measures or how do you manage scope changes. Please tick where applicable.

Question	Strongly agree	Agree	Neutral	Strongly disagree	Disagree
Fill a scope change request					
Document and justify scope					
Review the change request					
Approve the request					
Just apply the change without changing the scope					

Indicate your level of agreement/disagreements to the following statements

Question	Strongly agree	Agree	Neutral	Strongly disagree	Disagree
Changes in project activities change project cost					
Changes in project activities change project schedule					
Changes in project activities are communicated to the entire team					
There are proper ways to manage scope creep					
The changes are done by developers to impress the client (Gold plating)					
Changes are proposed by Client to suit changing markets needs					

SECTION C

What are the challenges encountered when managing scope creep, please tick as many as possible

- Increased risks
- decreased client satisfaction
- Reorganize the budget
- Reduced team morale
- Managing increased work in short time

Other.....

What developments would you propose in the process of project scope change management?

.....
.....
.....
.....

What challenges have you encountered on any particular project when managing scope creep

- Increased risks
- decreased client satisfaction
- Reorganize the budget
- Reduced team morale
- Managing increased work in short time

Other.....
.....

7.4. Appendix D: Clearence Certificate:



P.O. Box 1906 • Bellville 7535 South Africa • Tel: +27 21 4603291 • Email: fbmsethica@cput.ac.za
Symphony Road Bellville 7535


Office of the Chairperson Research Ethics Committee	Faculty: BUSINESS AND MANAGEMENT SCIENCES
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At a meeting of the Faculty's Research Ethics Committee on 02 November 2017, Ethics Approval was granted to Sulaiman Godspower Maeresera (2121604236) for research activities related to the MTech: Business Administration in Project Management at the University of the Cape Peninsula University of Technology

Title of dissertation/thesis/project:	SCOPE CREEP MANAGEMENT CHALLENGES IN AN OUTSOURCED E-COMMERCE PROJECT MANAGEMENT COMPANY IN CAPE TOWN Lead Researcher/Supervisor: S FORE
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Comments:

Decision: APPROVED

	15 December 2017
Signed: Chairperson: Research Ethics Committee	Date

Clearance Certificate No | 2017FBREC502

7.5. Appendix E: Conference Presentation Confirmation



7.6. Appendix F: Editor's Certificate

113 Mowbray Avenue Benoni, 1501

11/11/2019


To whom it may concern

This letter serves as a confirmation that a professional reviewed Sulaiman Godspower Maeresera's Dissertation. The dissertation was thoroughly scanned for any language errors and other technical aspects.

The document reviewed is titled '**SCOPE CREEP MANAGEMENT CHALLENGES IN AN OUTSOURCED E-COMMERCE PROJECT MANAGEMENT COMPANY IN CAPE TOWN**' and has 104 pages.

If you need any further information do not hesitate to contact me on;

Mabasa Witness Makono
Grad/CSA, PGCE Unisa
Email: witnessmakono@gmail.com
Tel: +27118947305
Cell: +27718331711

Signed: 
At: *Benoni*
Date: *11/11/2019*