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Inter-Organisational Issues Facing Implementation of Project Management Maturity

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by
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MAY 2012
DECLARATION

I hereby declare that this dissertation submitted for the degree of Master’s in Business Administration at the UNISA Graduate School of Leadership, is my own original unaided work and has not previously been submitted to any other institution. I further declare that all sources cited or quoted are indicated or acknowledged by means of a comprehensive list of references.

Rainer Preussler

May 2012
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ABSTRACT

Repetitive project failures or underperformance and ever increasing competition have given impetus for the need to drastically improve project performance within professional services organisations. This realisation has prompted actions to drive restitution efforts to enhance successful delivery and overall project management throughout the organisation. However, the desired outcomes to improve project management processes at an organisational level have not always been forthcoming in light of improvement activities implemented through various changes in operating procedures.

The purpose of study is to investigate and identify, from an intra-organisational perspective, the factors required to bring about enhanced implementation and continuous improvements in project management processes; and to determine how they must be aligned to a successful strategy implementation for attainment of higher states of organisational project management maturity.

The study focuses on project intensive organisations, mainly implementing information communication technology (ICT), business services and financial related projects. Through the use of a literature review, augmented by a quantitative survey, the perceived impacts and values of the determined factors on project management maturity were gathered.

The research study shows that companies wanting to improve project management maturity must steer away from focussing only on certain processes, but must take a holistic view, encompassing a variety of internal factors, ranging from components of organisational learning, to change management and strategy implementation. The identified factors will provide impetus for organizations to create and leverage the drivers, fostering a climate for continuous project performance improvements and ultimately giving them the ability for moving to higher levels of maturity.
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CHAPTER 1: Background to the Problem

1.1 Introduction

Projects are frequently implemented as an instrument for attaining an organization's strategy and as a response to needs that cannot be addressed within an organization's normal operational boundaries. In addition, they have become avenues for mastering business and change (Andersen and Jessen, 2002). Projects are initiated at all levels of an organization; they can involve a single person, or thousands, running from a couple of weeks to many years. Each has their particular set of requirements, which must be met by effective project management.

With increasing competition within all industries and professions, organizations worldwide are embracing project management as a way of successfully completing projects, meeting business objectives and achieving organizational goals (Project Management Institute, 2005). Therefore, they are striving to implement and improve concrete project management processes; as they are vital in establishing a sustainable competitive advantage.

Yet, there is a paradox to be found in these improvement endeavours, for which, in its prevalence, has been coined ‘Cobbs Paradox’, which states, “We know why projects fail, we know how to prevent their failure, so why do we still fail” (Carl and Freeman, 2010: 340).

The manifestation of this paradox can be found within many organisations where initiatives to improve project management processes and the associated maturity have been attempted, but have been deemed not to realize the associated benefits. This provokes the thought, that possibly, one actually does not completely understand why projects fail or how to prevent failure, which in turn leads to the less than ideal outcome. This research will explore some of these issues surrounding this paradox.

1.2 Problem in Context

According to statistics from research conducted by the Standish Group, on average 40% of projects fail (Project Management Institute, 2011). Further research has shown that a staggering 75% of business transformation projects fail in totality, with only 16% of projects completed on time and within budget (Yazici, 2009). Risks to these typical critical success factors can be broadly attributed to poor planning, unrealistic or changing scope, and lack of commitment on both vendor and user of the service. To rub salt in the wounds, a PwC report revealed that approximately 60% of project failures can be attributed to organisational aspects (Nieto-Rodriguez and Evrard, 2004) as opposed to project management (managerial) shortcomings. Awareness to these figures is indicative that there appears to be a trend throughout the industry, showing that organisations which can deliver projects successfully have a vital core competency, awarding them a competitive edge.
Repetitive project failures or underperformance and ever increasing competition have given impetus for the need to drastically improve project performance. This realisation has prompted actions to drive restitution efforts to enhance successful delivery and overall project management throughout the organisation. However, the desired outcomes to improve project management processes at an organisational level have not always been forthcoming in light of improvement activities implemented through various changes in operating procedures.

Considering that everything in a business is a project or is project related (Dinsmore, 1999), it has become essential to bring about change and determine what needs to be in place for successful delivery of projects. As the organisation’s strategy is to dominate whatever market it operates in, realignment of systems, structure and culture for implementation should be considered.

As barriers of entry are diminishing, making entry into the industry easier, it can be argued that smaller, more flexible consultancies are standing at par or surpassing large power houses on the basis of project delivery. They seem to have a talent that leaves larger consultancies wanting, even outsourcing to them on occasions. Additionally, international players are gaining ground, with their ever increasing footprint and access to vast resources.

In light of these assertions, the questions arise as to what causes these failures on an organisational level, and what can be done to form a basis to improve the processes more effectively. The projects that are taken on are complex, but not overwhelmingly so, leading to the belief that the root causes could be inherent to inter-organisational issues that manifest through the actual delivery of projects.

It can be argued that repetitive project failures have a variety of negative effects, such as financial repercussions, lowering staff morale, and placing company reputation at risk. Should improvement efforts to change such a position have not yielded the desired results, it could be postulated that reflecting thereon, could lead to a potential realisation that attempts to fix superficial processes is not enough, prompting an investigation into the deficiency in bridging strategy and execution to the level expected in a professional services firm to better implement organisational wide project management.

To contextualize the problem of underperformance in the overall process of project delivery, an examination at grass roots level must be conducted and aim to understand the internal drivers of project delivery and the reasons therefore. This is not to detract from issues arising on the actual project, but more so to foster a culture of successful project delivery and instituting improved processes form an enterprise perspective to do so. At present, a culture of benevolence seems to be present. As one of the drivers is continuous improvement, heed should be given to the growing emphasis on organisational learning, which is the strategic capability to implement new processes in contingent situations. Within a large organisation, this requires sharing of knowledge to ensure that lessons learnt, both from success and failure, are capitalised on in process improvement. To enshrine such processes, further possible factors that have negative effects on the roll out thereof is a potential to resist change from staff or other stakeholders. This seems to have high validity.
as processes were well thought out, but were not accepted by staff into their daily project work.

From a resource based perspective, the firm has many resources and capabilities in its possession, but it seems that coordination and deployment thereof leads to seemingly inefficient utilisation, which in turn could lead to the diminishing returns in project management and associated process improvement.

Leadership support, even if the leaders are not project managers, is available through the encouragement of using an appropriate project delivery processes and purveying the need for improvement. Various levels thereof are however prevalent, with communication and collaboration being fostered in pockets or departmental levels. This propagates the improvement through the changes in procedures and processes on a more cross functional basis to obtain an enterprise view of project management. In a similar light, often changes are implemented in a top down manner, in terms of policy setting opposed to a more collaborative approach.

As organisations need to execute projects to implement strategy, remain competitive and to generate profit, it has therefore become imperative to understand why the firm is failing to improve project management processes at an organisational level, leading to a fading capacity to deliver projects on time, within budget and quality criteria.

The results of this research are important as they will provide a guide to ensuring that a company is internally ready and adept to successfully foster, manage and deliver projects to create a sustainable competitive advantage.

1.3 Problem Review

A number of emerging themes have been identified from a reflective review of the problem in context. They are:

- Project management maturity
- Strategy Implementation / Internal alignment
- Organisational learning
- Change (approach/resistance/culture)

A key aspect for improved understanding of the issues causing project delivery failures and how to advance past these is to assess a company based on their organisational and project management maturity. Companies’ actions and decisions reflect their maturity levels (Dinsmore, 1999); therefore by investigating these, one could determine the drivers thereof. Many companies grow in scope and goals, tackling ever more complex projects, but do not necessarily make the same advancements in their project management practices (Project Management Institute, 2011). To gain insight into this, it is important to ascertain the levels of maturity in terms of general management infrastructure and process specific information to delve into the details of barriers and enablers at an organisational level. As project
management is by nature systemic and consists of various interdependent parts (Kerzner, 1997), this approached is deemed as appropriate in examining the underlying components.

As it has been proposed that there is a link between process improvement and competitive well being (Harkness, Segars & Kettinger, 1996), a variety of maturity models have been developed to ascertain the levels of maturity and practices to advance through these. In applying such approaches, it becomes evident what areas have deficiencies and what exact items need to be targeted for improvement.

Without using such a conceptual structure, process improvement activities could focus on incorrect areas, leading to further underperformance or vice versa. Consequently, discipline and consistency would not by applied, leading to few ad hoc successes driven by astute project or business managers (Paulk, Curtis, Chrissis, & Weber, 1993). In considering some alternatives to this approach, reflecting upon it, yields no concrete results. A company could develop a new project management methodology, train all their staff in the intricacies of project management or improvise project processes on the fly. However, in doing so, any changes are superficial without there being a firm basis for the improvement, leading to further business projects following suit in underperformance, regardless of the world view. The consistency of a maturity model is required to set realistic goals for process improvement by understanding the difference between immature and mature organisations.

Here, it is necessary to reiterate that this research does not focus on understanding project management discipline or its critical success factors, but rather the organisational factors that impact an organisation at becoming excellent (highly mature) at propagating project management principles. This will therefore be used to inform the questionnaire to gather data enquiring on these features. They remain important, but fall outside the scope of this research. As reasons for project failures are mainly organisationally related and are outside the direct range of influence of project managers, such as amongst many, organisational flexibility, changes in strategy and poorly matched structures (Nieto-Rodriguez and Evrard, 2004). This gives a greater rationale to exploring aspects of strategy implementation and its relation to project management maturity interventions.

In examining the processes and systems for maturity that are in place (or should be), is a critical point, however stimilus is given to have to delve deeper and further analyse these items in context of key internal dimensions that form the foundation for effective implementation thereof (Louw and Venter, 2006). These would pertain to ensuring culture, capability, knowledge and systems are in place to foster a climate to do so and ensure sustainability and successful implementation of a drive for increased project management maturity. As the move to enshrine organisational project management maturity is a strategic implementation, these factors also form the cornerstone for the ability of an organisation to deal with change, which has a direct link from strategy formulation to implementation. As project management is currently deemed as being of strategic importance (Dinsmore, 1999), supported by the factors influencing the successful strategic implementation thereof. Therefore, if the alignment of these factors is not considered in implementing what is
essentially a strategic change, in terms of process improvement through maturity increases, it will become increasingly difficult to obtain the desired results from project management process improvement.

As some companies are more dependent on projects than others, levels of maturity could differ, but the search for solutions is based mainly on those heavily enshrined, but not disregarding those of a lesser extent. Regardless, they would all need to cultivate effective communication, cooperation and trust to achieve rapid project management maturity (Seay, 2005).

As both maturity and organisational architecture for strategy implementation components are linked to capabilities within the organisation, which are needed to apply an organisation’s process improvements (Chrissis, Konrad & Shrum, 2007), could have impacts on the issue; as without these, the benefits of process improvement cannot be realised. These are reflected both in the organisational capabilities in addition to the human capabilities to implement projects. These do not detract from successful existing capabilities, such as the ability to successful launch marketing campaigns or innovative product development, but focus on project specific capabilities.

With these items in place, Meisner states that organisations will learn from their mistakes and successes and will be enabled to mature more rapidly to become a project organisation (2007). Should this not be the case, the lower levels of maturity are known to endanger the delivery of successful projects (Bolles and Hubbard, 2007). It is therefore deemed important that it is necessary to determine a clear vision and plan to change to a new way of delivering projects. These areas can be considered broad, but further analysis will determine the key factors; which leads to the need to understand how organisational learning pertains to organisational project management maturity endeavours.

As noted by Meisner and in contextualisation of the research problem and in reviewing the themes, the ability of an organisation to learn is crucial in obtaining higher levels of project management maturity (2007). Subsequently, the concern that a great extent of difficulty in improving project management processes exist, leads to suspect the organisations ability to learn the new processes, to learn from experiences and integrating these lessons into their process improvement activities.

The ability to learn and adapt to new situations is vital, thus organisational learning becomes a critical issue, particularly in how to generate rather than to adapt to learning (Back and Seaker, 2004). It is therefore believed that this is a key factor in being able to obtain levels where improvement can happen, as without, any experiences could be wasted. It is also a key component in the highest levels of organisational project management maturity (Project Management Institute, 2010). In essence, if an organisation cannot learn and adapt, they will be left straggling behind the competition. This pertains to both learning from external events and internal. The focus for this research will be based internally. From a strategic perspective, it is believed that learning enhances organisational knowledge for facilitating improvement and adaptation within organisations (Smith, 2001).
Therefore, it is deemed that an organisation should be capable to learn in order to successfully implement any changes or improvements.

As the previous items all seem to be underpinned by change, organisational or otherwise, it is reasoned that to understand the intricacies of change management, will bring greater insight into understanding the research issues at hand. Particularly as executing organisational project management maturity exercises bring significant changes to an organisation.

These range from continuous process improvement, communication and collaboration methods, innovation, active learning to changing the overall strategic intent. In determining why superficial improvement activities have not yielded results, it would be prudent to see how the changes are implemented and to what extent such changes are met with resistance and how to overcome this from a variety of stakeholders. Various factors that impede the attainment of critical mass needed to implement changes could be present. With this in mind, the actual strategic flexibility of the organisation to undertake initiatives could impact such improvement efforts. The intent is to be flexible and agile to change, but other unidentified processes could restrict these endeavours. Potentially the vision does not support it, or the balance of dynamic controls is out of sync, essentially forming organisational resistance.

As a result, a systematic approach to change management is needed (Nieto-Rodriguez and Evrard, 2004) to implementing an organisational project management maturity process, subsequently increasing the levels thereof. Each should be examined for its level contribution that inhibits an organisation to move from the current state to a desired one.

Should the culture not be one that is receptive to change, or if the change simply was forced upon the users thereof without consultation, a reason for failure could find its roots in resistance to change. As with any business changes, there is likely to be resistance in moving from the known to the unknown, but the route of least resistance involves consideration of all the intricacies implicated therein (Zigarmi and Hoekstra, 2011). If the change and the value thereof are not communicated and driven accordingly, no matter how worthy the processes or intentions are, it will not succeed. As this feeds into the purpose of the organisational architecture for implementation of strategy, with culture underpinning all other items that drive change, the dependencies thereon must be taken into account.

Hence, it is postulated that to institutionalise any change entails building an infrastructure and an organisational culture that supports methods, practices and procedures of the business in terms of project management maturity so that they become enshrined in the very fabric of the organisation (Kotter and Schlesinger, 2008).
1.4 Problem Statement

In light of the problem review deliberated above, the problem statement for this research study is defined as:

Organisational Project Management Performance cannot be implemented or increased without aligning inter-organisational factors enabling continuous process improvement.

1.5 Research Questions

A brainstorming around the Problem statement opened up a number of potential research questions aimed at responding to the challenges set by the statement itself. The research questions are:

- What frameworks are typically used to implemented project management maturity exercises?
- How do organisations falling into the upper echelons of maturity differ to those of lower maturity in terms of key practices?
- What are the core factors that need to be examined to ensure a successful project management maturity implementation?
- To what extent does the capacity for organisational learning form part of core factors for increasing maturity?
- What are the processes that are followed when organisations make drastic changes to improve processes?
- What are the shortcomings and barriers in implementing project management maturity endeavours?
- Do changes relating to project management maturity improvement follow a best practice strategy implementation approach?

1.6 Research Objectives

A SMART analysis of the above questions has led to the selection of three objectives for the research at hand, given the constraints of time and resources for this research.

These key objectives of this research are:

- To establish the current level of project management maturity in the organisations
- To ascertain the perceived core factors within an organization required to increase organisational project management maturity.
- To indentify the perceived key elements required for successful implementation of an organisational project management maturity strategy.
1.7 Importance/Benefits of the Study

Companies are constantly trying to mature their project management processes, but many grapple to do so successfully, even with the best intentions present. To reach the highest states of maturity, constant process improvement and learning is necessary. Yet, this state seems difficult to attain, not by direct shortcomings of the maturity guidance frameworks, but by issues that lie within the organisation and their implementation and enshrinement thereof. This in turn has negative impacts on project delivery, subsequently leading to a deterioration of a sustainable competitive advantage.

The importance of this study finds its roots in the drive towards organisational project management in terms of delivering strategy through projects.

This study holds its importance within the current context of the competitive environment, where companies are realising the strategic benefits of moving to enterprise or organisational project management, to implement strategy through projects. This in turn gives impetus to comprehend and absorb these underlying factors thereof. Failure to do so, could lead to legacy processes being maintained and suboptimal approaches continuing as the norm.

This study will provide an enhanced understanding of the key underlying factors of success, on an intra-organisational level, in implementing process improvements and learning in relation to increased project management maturity, illuminating issues that form the keystone thereof.

The benefits of this study will appeal to practitioners who endeavour to increase organisational project management maturity, by aiding to pinpoint the practices and building blocks required to implement the associated process and learning improvements. In unravelling these root causes and core aspect that must be in place for this to happen, they will be better equipped in terms of capacity to facilitate heightened maturity.

This study contributes to the fields of project management maturity, process improvement, organisational learning and strategy implementation.

1.8 Limitations and Delimitations

During the development of the research, a number of limitations and delimitations were noted. These are presented below.

1.8.1 Limitations

Limitations examine the impacts that the design has on the generalizability of the study that are typically beyond the researcher’s control.

As the research is confined to determining the intra-organisational drivers for increased performance in a maturity based perspective, other aspects that contribute to these topics can be excluded in addition to factors external to the organisation.
For reasons that the planned sample size is relatively small relating to the population, results may not be generalizable beyond the population. However, due to the types of companies in the sample, results would be mainly generalizable to similar organisations but could be generally applicable to businesses implementing maturity frameworks or attempting to improve project management processes. Therefore some generalisations could cautiously be made. The purposive base of the sampling method, sampling errors cannot be ruled out to a greater extent.

The questionnaires will be collected anonymously to provide respondents to freely express their views; however this will lead to an issue in being able to track the respondents from an administrative point of view.

A limitation lies with the sampling type relating mainly to convenience of the locality of the researcher, which could cause validity issues with other regions.

Owing to the limitations of time and resources of this academic research, results can be restricted to certain interest groups.

Due to these limitations, efforts will be pursued to in the research design to control the extraneous variables within the time and resources available.

1.8.2 Delimitations

Delimitations define and narrow the scope a study. Initially the issue at hand was intended to examine failures to implement organisational project management maturity to improve project delivery. However much information exists about the project related failures among many such as such as user involvement, commitment and requirements gathering, but it was subsequently deemed that the focus should move into the organisation, examining internal factors that drive maturity and process improvement. As this is a very broad field, the decision was made to examine the basis of maturity increases which are related to continuous improvement of processes and the implementation. To further narrow the study, focus is realigned to what needs to be in place internally for a company to be able to continuously improve processes.

The study will focus on project driven organisations, mainly implementing information communication technology (ICT), business services, financial and engineering related projects and ideally having (or wanting to) conducted a maturity exercise. The businesses under review will be based in the Gauteng metropolitan areas. Organisations outside this area would be difficult to engage with due to the previously mentioned constraints, and are therefore specifically excluded. The sample for the quantitative study will be drawn from directories, the Project Management Institute’ SA chapter and personal connections.

The study will be confined to seeking respondents to questionnaires that are of senior and operational level, and project management professionals, within large organisations. It is not believed that a wide enough audience could be obtained for gather rich information by way of interviews. The focus on the study will be to collect data on effectiveness of specific
processes and knowledge areas pertaining to implementing project management process improvements and the continuity thereof for increases in maturity.

Although a greater sample size would have been beneficial, due to the limited time and money, a smaller sample is necessary, while attempting to remain representative.

Although general process improvement models could have been examined, these are specifically excluded as they are not directly relevant, considering the research aims to identify organisational aspects that are required to clarify the problem.

1.9 Outline of the Report

The outline of the report and content analysis pertaining to this dissertation, reads as follows:

- **Chapter 1 - Background and problem in context**: This chapter provides a high level background on the scope and context related to the research study. The research process is explained and the research design and methodology elaborated upon. The research constraints were listed and a high level overview was provided on the chapter’s content of the dissertation. The chapter was concluded by a list of the research objectives.

- **Chapter 2 - Problem analysis and theoretical considerations**: In this chapter, exploration and development towards a deeper understanding of the research problem is conducted. This is done through exploitation of appropriate business models and theory.

- **Chapter 3 - Literature review**: In this chapter, the major areas addressed in the research, are examined by way of a comprehensive literature review. Project management maturity approaches, strategy implementation, organizational learning and the strategies for the management and implementation for planned change are reviewed and analyzed in detail.

- **Chapter 4 - Research methodology**: In this chapter, the research methodology, the development of the measurement instruments, the collection and coding of the data and the statistical techniques used to gather, process and analyze the data are outlined.

- **Chapter 5 - Results and discussion**: The overall results of the study are presented, analyzed, interpreted and discussed in this chapter.

- **Chapter 6 - Conclusions and recommendations**: This chapter presents the concluding remarks and recommendations on the research topic, while also suggesting recommendations for future research.
1.10 Summary

The objective of this chapter was to highlight and provide background information to the issue and study at hand, impelled by the need to improve project delivery and the underlying issues requiring improvement to do so. The chapter further emphasized the objectives and the importance of the study, giving insight into the research process and addresses the research problem, questions and constraints. Chapter 1 also presented the outline of the chapters for this report.

Chapter 1 lays the foundation for chapter 2, in which various business models are applied to gain deeper understanding of the various aspects that affect the implementation of project management process improvement.
Chapter 2: Problem analysis / Theoretical considerations

2.1 Introduction

In the current business environment, companies are applying project management principles to target strategic corporate needs to manage a myriad of simultaneous projects in a dynamic manner; by focussing on consolidated project management principles across the organisation they achieve success (Dinsmore, 1999). To achieve this plateau with effective outcomes requires a greater understanding of the concepts driving or inhibiting these, especially how they relate to implementing and improving associated processes for greater performance.

A number of themes or constructs have been reflectively opened up in the Problem review. This chapter will take that reflection further and exploit the theoretical considerations and existing business models around these issues in order to further unravel the underlying complexity in the research.

This theory base helps lay the groundwork for the exploration of the various items that form part of the intra-organisational factors underlying successful project management process improvement and the complexities thereof.

2.2 Problem analysis / Theoretical considerations

One of the main themes emanating in this study is that of project management maturity. This is a complex issue and a model has been suggested that illuminates some of these issues.

The problem that improvement of organisational project management processes is not fostered within companies could potentially lead them to become inefficient in delivery of projects, losing revenue, escalating issues with client retention and undermining their sustainable competitive advantage. In determining what the root causes for lack of project management process improvement is and what needs to be in place for improvement to materialise, an examination of a company's maturity for project management and its underlying factors must be assessed in addition to their will and ability to improve and the factors fundamental to these.

Of relevance in this research maybe the first model that is to be used to unravelling these complexities is the Project Management Institute’s (PMI) Organisational Project Management’s Maturity Model (OPM3) to address overall project management and its path to higher states of maturity. To gain insight of the overall characteristics of mature companies, this will be combined with the Project Management Process Maturity Framework (PM2), which classifies company characteristics in relation to each level of maturity.
To obtain greater understanding of the problem, the Project Management Institute’s (PMI) Organisational Project Management Maturity Model (OPM3) model will be used. This model is founded on Carnegie Mellon’s Capability Maturity Model Integration (CMMI) that looks at overall process improvement, but focuses specifically on project delivery aspects within organisations. The model is based on three interlocking elements that focus on knowledge, assessment and improvement. Using these factors one can drill down further into the foundations of these aspects, using the model to assess the maturity from non-existent to optimized/sustainable, and understanding the drivers needed to move to a higher level of maturity to bring about greater success in the project delivery process.

This model is deemed appropriate for the intended analysis as it examines an organisation’s capability for project management and the process thereof, while simultaneously focussing on the link between projects, business strategy and the importance of organisational support for these project management practices. In combining this with the PM2 model further insights into the characteristics of companies at various levels can be determined. This combined model is illustrated below in figure 1.

**Figure 1: PMI’s Organisational Maturity Model and PM2 Characteristics**

<table>
<thead>
<tr>
<th>Level</th>
<th>Characteristics</th>
</tr>
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<tbody>
<tr>
<td>Level 1</td>
<td>Ad Hoc</td>
</tr>
<tr>
<td>Level 2</td>
<td>Planned</td>
</tr>
<tr>
<td>Level 3</td>
<td>Managed</td>
</tr>
<tr>
<td>Level 4</td>
<td>Integrated</td>
</tr>
<tr>
<td>Level 5</td>
<td>Sustained/optimised</td>
</tr>
<tr>
<td></td>
<td>Functionally isolated</td>
</tr>
<tr>
<td></td>
<td>Organizations possess strengths in doing similar work</td>
</tr>
<tr>
<td></td>
<td>Informal training of PM skills and practices</td>
</tr>
<tr>
<td></td>
<td>Strong teamwork</td>
</tr>
<tr>
<td></td>
<td>Project-driven organization Continuous improvement of PM processes</td>
</tr>
</tbody>
</table>

- Ad Hoc
  - No formal standards, processes, methods, procedures, or staff to constitute a project management discipline. Standard technologies and reporting are sporadic
- Planned
  - Standardisation
  - Project management standards, processes, methods, procedures, and staff exist in the organisation, but are not considered to be an organizational standard. Basic documentation exists, inconsistent management support rarely/occasionally applied
- Managed
  - Measurement
  - All project management standards, processes, methods, procedures, and staff are in place as organizational standards. Formal documentation exists, consistent management support, execution are irregularly/inconsistently applied
- Integrated
  - Control
  - More refined project management standards, processes, methods, procedures, and staff are in place. More refined documentation, consistent management support, consistent execution, and efficiency exist across all projects.
  - Metrics are in place to collect performance data across all projects
- Sustained/optimised
  - Constant Improvement
  - Lessons learned and best practices are applied to continuously improve existing standards, processes, methods, procedures, and staff. Metrics are collected and applied at the project, portfolio, and organizational levels.
  - The organization is in a position to evaluate future decisions based on past performance and maximize its competitive advantage in the industry

(Adapted from Project Management Institute, 2010)

PMI’s model provides insights to identify and understand the core practices for fostering project management within organisations, focussing mainly on the processes thereof. The analysis is based on the assumption that companies have chosen to implement a strategy of improving organisational project management processes. This is the overall determinant – do
they want to improve, but struggle to do so, this drives all other factors. It also gives insight to the basis of resolving of Cobb’s paradox.

In light of this, it can be argued that project management maturity is arguably dependent on a relevant strategy implementation. The following section and figure 2 below opens up some of the related issues here.

It is reasoned that there are numerous project specific issues that could cause failures, but this research aims to find the internal issues and improvements of processes. As strategy implementation is almost entirely dependent on the internal functioning’s of an organisation (Louw and Venter, 2006), a further model that will be applied to the problem of implementing improved project management processes is Lee’s organisational architecture. This will, either in whole, or components thereof, give insight into how to implement a strategy for of performance improvements in order to increase in maturity. As the OPM3 is good at identifying problems, it is not indicative enough of actually implementing solutions and therefore needs to be augmented by such an internal view to how receptive the organisation is to standardising processes and implementing maturity strategies, i.e. how ready is the organisation to change and implement improvement strategies. As the process component falls into the organisational architecture, the two can be inextricably linked to determine critical success factors for implementation of such a strategy.

Figure 2: Organisational Architecture

In context of the research problem of intra-organisational drivers to implement improved project management processes, the model shows that key factors to obtain the highest level of maturity are continuous improvement by learning from both successes and failures, which is inextricably linked to process improvement that drives delivery of capabilities to stakeholders.

A further prominent theme that is imparted in this study is that of organisational learning. This is relevant both in light of maturity improvement and strategy implementation. Particularly so, as maturity and capability assessments are a core dimension of organisational learning and improvement (Mullaly, 2006; McAdam and McIntyre, 1997). It is
therefore deemed pertinent to investigate the extent that organisational learning takes place as an underlying factor for continuous process improvement. As the rapid pace of change in the environment progresses, consequently firms cannot rely on existing processes – they need to learn new ways of doing things. From a strategic perspective, every change calls for learning, it therefore serves a dual purpose, learning to change and learning to implement new project processes. It is assumed that a failure in gaining maturity could be linked to a deficiency in organisational learning. It could be said that Cobbs Paradox has materialised due to a lack of learning. This is a further complex issues and to understand how firms can do so, Agriys and Schon’s seminal model of organisational learning can be of guidance (1978) to illuminate some of these issues. Figure 3 opens up some of the related aspects.

Figure 3: Single and Double Loop Learning

When a disparity is identified between the intended and actual outcomes of an action, the motivation is created for attempting to make corrections. With single loop learning this process happens without challenging the existing framework within which these improvements are attempted, possibly not reaching the desired result. For double loop learning, which is not constrained by current views, actually reviewing the base of how issues are examined, assessing the actual strategies behind them (Pitagorsky, 2011); essentially learning to learn, which can lead to greatly improved outcomes/processes. As double loop learning links back to organisational architecture in terms of vision and structure, validity in integration is achieved. In questioning practices, norms and policies double-loop learning is actually in explicit conflict with the immediacy of ongoing organisational processes. Therefore, emerging cultures of learning can frequently overwhelm existing cultures of compliance (Ramalingam, 2008).

Due to the theoretical nature of the learning dimensions above, the following model can also be applied to illuminate practical issues in organisational learning.
Therefore, to further ascertain the level of organisational learning, the INVEST model developed by Pern, Roderick and Mulrooney can be applied (Tarrini, 2004), which is used to diagnose an organisations learning capability and determine the organisations present stage in the learning process (Cymanow, 2001). The model proposes six factors that must be in place to determine the above. An understanding of these factors will go hand in hand with how the company has/has not managed to implement and improve its project management maturity.

Figure 4: INVEST Model for Organisational Learning

Table 1 on the next page provides an overview of the INVEST model’s factors and its associated descriptions that characterize the current the state of organizational learning.
### Table 1: Invest Model Factor Description

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description of factors based on analysis of Pern et al’s work (Tarrini, 2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inspired Learners</strong></td>
<td>Individuals see the necessity of continuous learning and development in terms of their contribution to continuous improvement and enhanced competitive advantage. They are encouraged to take responsibility and learn from mistakes.</td>
</tr>
<tr>
<td><strong>Nurturing Culture</strong></td>
<td>Employees value and encourage continuous learning and challenge the status quo. Learning from mistakes is encouraged. Climate of respect, openness and trust prevail. Continuous improvement should be the norm.</td>
</tr>
<tr>
<td><strong>Vision for Learning</strong></td>
<td>Shared vision which includes the organization’s capacity to identify, respond to and capitalize on opportunities. Proposes importance of learning throughout the organization to continuously transform itself. Employees must be committed to this vision.</td>
</tr>
<tr>
<td><strong>Enhanced Learning</strong></td>
<td>Exists where processes and systems are in place to enhance, encourage and sustain learning among all its employees.</td>
</tr>
<tr>
<td><strong>Supportive Management</strong></td>
<td>Managers believe performance improvement is the result of encouraging and sustaining learning. Managers facilitate and coach as opposed to controlling and monitoring.</td>
</tr>
<tr>
<td><strong>Transforming Structures</strong></td>
<td>Organisations work to facilitate learning between different levels, functions and subsystems, permitting rapid adaption and change. Work is defined as objectives and assignments as opposed to jobs, tasks and rules. Functional boundaries must not prevent sharing of knowledge. Cross functional working is the norm. Improvement focus is given high value throughout the organization.</td>
</tr>
</tbody>
</table>

As many of these factors are present in the higher levels of the maturity model and have relevance to the internal alignment of organizations to implement strategies, it proves that its application is pertinent to gaining insight to the problem at hand.
The combination of the items addressed in analysing this problem, are dependent on relevant change management. Figure 5 opens up some of the related issues here.

Figure 5: Kotter’s Model for Change

Adapted from (Kotter and Schlesinger, 2008)

Undertaking any endeavours that target performance improvement within organisations can typically be considered a business change. Change can be either emergent or planned based on stimuli from internally or externally to the organisation.

Inputs to change from external to the organisation are typically the factors from either the macro or micro environment. As this research focuses on internal planned changed in terms of improvements of project management performance, the external drivers will not be examined, although they have given impetus for change, such as entry of more competitors.

Becoming more efficient and effective is the main intention of planned change, however resistance from an organisation’s members can be expected as they could see this change as a potential threat affecting their future (Susanto, 2008).

Hence, in order to understand any resistance that improvement initiatives might face, a review of the change management process might be appropriate. To unravel the underlying complexities into what such an approach to change management must follow, Kotter’s Eight Step model (Figure 5) to implement change and minimise resistance will be used (Kotter and Schlesinger, 2008).
With the common knowledge that almost all organisational change can be met by resistance (Jansen, 2000), it is important to approach the subject in terms of obtaining surety that all efforts have been made to efficiently and effectively bring about acceptance and enshrinement of organisational project management improvement. This model does precisely this and therefore elucidates the core issues.

2.3 Summary

This chapter highlighted the need to examine multiple factors, both hard and soft, to implement and improve project management maturity. Models exist that point out the characteristics of highly mature project management practices and their associated features. However, it further points out that implementing such frameworks necessitates changes in various aspects of the way a company operates, which may require internal alignment and astute change management to bring about performance improvement. Moreover, as the higher levels of maturity are associated with the underlying principles of organisational learning, such a doctrine could be called upon to materialize successful continuous improvements in project management and organisational processes.

In applying these various models, the likely needs to use them holistically for the purpose of this research study surfaced.

The following Chapter 3 provides a comprehensive literature review of the major areas addressed in the analysis of the problem above.
CHAPTER 3: Literature Review

3.1 Introduction

Chapters 1 and 2 have allowed a reflective analysis of possible themes and four main themes have emerged. These have been identified to be:

- Project management maturity
- Strategy implementation and internal alignment
- Organisational learning
- Change management

These themes will be explored on a broader front by means of a literature review, with the aim to provide the academic framework for the research topic; the intra-organisational factors affecting project management process improvement.

In being explorative in nature, this literature review is applied to identify factors that should form part of the survey, in addition to illuminating the trajectory to be followed in the study.

The subsequent section presents a review of available literature and identifies various facets and elements that the broader research, business and academic community tender on the selected themes in relation to the objectives stated in Chapter 1. These works are evaluated and synthesized below in an attempt to gain knowledge on the selected themes.

3.2 Project Management

Effective project management is considered an essential value proposition for organizations that are committed to improving their competitive edge (Rad and Levin, 2006).

According to Dinsmore (1999) projects contribute to organisational success and form the building blocks of strategy execution, however, as many companies grow in scope and goals, tackling ever more complex projects, but do not necessarily make the same advancements in their project management practices (Project Management Institute, 2011). This can be caused by failure to establish and improve the underlying project management and processes on an organisational level (Carnegie Mellon, 2010). As improvement models are based on process institutionalisation with numerous process areas having to be implemented and improved, these are considered central to advancement.

Yet, results of a survey conducted by PM Research solutions (2009) on best practice benchmarks, showed that over 60% of companies are on the lowest level of maturity and only 26% of responding companies grew in maturity. In further research conducted over two hundred companies in determining the state of project management maturity, PwC found that over half of the companies (60%) are not satisfied with their current maturity level and wish to achieve a higher maturity level. The same study showed that the average maturity
level is 2.5, denoting that the current state of project management in organisations is at the level of informal processes and it is not yet institutionalised. This is one of the main reasons why so many projects are unsuccessful today. It must be noted that more than 36% of them, however, want to increase their maturity by more than 1 level (Nieto-Rodriguez and Evrard, 2004).

As project management is becoming fundamental to company success and business operations (Office of Government Commerce, 2006) this is an alarming statistic and shows the prevalence of issues to advance in maturity, i.e. failure to improve project management processes organisation-wide.

These inefficiencies in organisational project maturity are not only detrimental to the prosperity of the company, its further improvements and overall performance (Brookes and Clark, 2009), but are also passed on to customers, that have to pay as much as 60% more to get their projects delivered on time and budget (Prinzo Group, 2010), causing dissatisfaction, customer churn and reputational damage.

In being able to determine judicious goals for project management process improvement, the difference between immature and mature organisations must be understood (Paulk et al., 1993). Immature organisations, processes are generally improvised by project managers and executives during the course of the project, being reactionary on solving immediate crises. This is juxtaposed by Paulk et al., describing mature organisations possessing organisation wide ability to managing projects and associated processes that are accurately communicated and continuously improved (1993). To capitalise on these differences organisations require a process maturity framework. Hence, the purpose of the maturity model is to provide a framework for improving an organisation’s business result by assessing the organization’s project management strengths and weaknesses, enabling comparisons with similar organizations, and a measure of the correlation between an organization’s project management level and actual project performance (Bay and Skitmore, 2006).

To simplify the maturity models, it can be illustrated in figure 6 below that the lowest levels tend to only have technical content areas, whereas organizations that are fully mature have the full spectrum of competencies.

Therefore, the progression toward full organizational maturity will involve attention to all elements of managing projects beyond the technical content. Mature project management capabilities will allow the organization to improve many other areas that can lead to rapid response to changes in environment and customer needs (Rad and Levin, 2006).
Maturity models are however not prescriptive as they do not tell an organisation how to improve, they merely describe it at each level without prescribing how to get there (Paulk et al., 1993). A broad search of literature confirmed that most previous works focus on what project maturity models are, and how they work as opposed actually implementing them.

This can be advantageous to the developers of the models as they can be used across a variety of industries, but place organisations wanting to mature in an unclear context of how to implement. However, there seems to be no conclusive evidence that the focus of improvement initiatives should vary by industry or that the maturity required gaining a competitive advantage differs by industry (Pennypacker and Grant, 2003).

Although a PwC survey revealed that higher project management maturity levels will in most cases deliver superior performance in terms of overall project delivery and business benefits, there are conflicting views with other studies. There is no empirical evidence of project management maturity models contribution on an organisations success as a means of competitive advantage (Pennypacker and Grant, 2003; Ibbs and Kwak, 2000; Jugdev and Thomas, 2002). Therefore, there seem to be gaps between the ideal maturity model and its relationship to other factors, such as change and culture, pertaining to the implementation thereof and organisational factors, and how they relate to project and resulting business performance (Yazici, 2009). There is however a reservation based on the context of these studies, as the same authors contradict themselves across various timelines.

Prior to actually discussing success rates, due to a broad range of models, tools and practices available, across different industries, organisations are often confused about their application (Kwak and Ibbs, 2002). This could be a base for the perceived lack of success, even with proponents stating “you have to be pragmatic about what level of maturity is required” in terms of its application (Yazici, 2009). Selecting the work groups to be involved
improvement program is also critical. Should the selection be too large, it may be too much for the initial improvement effort. The selection should also consider organizational, product, and work homogeneity (Carnegie Mellon, 2010).

Although maturity models have been criticised to being reactive rather than proactive (Brookes and Clark, 2009), the overwhelming view is that they offer a valuable systematic approach to progress to higher levels of maturity and ultimately the improvement of it project management processes (Kwakk and Ibbs, 2002); in turn, this allows organisations to purposely and progressively develop its capabilities to successfully deliver projects. This sentiment is reinforced by Pennypacker and Grant, in stating that maturity models add considerable value to contemporary organisations and define a structured route to improvement (2003).

With the information of the various surveys and research conducted (Nieto-Rodriguez and Evrard, 2004; Ibb and Kwak, 2000; Pennypacker and Grant, 2003) seem to reveal that as the models are improving, but there has been limited success to many of the efforts. Several companies have been carrying out maturity improvement initiatives, but some giving up before realising the benefits, with others taking much longer than expected to get it accomplished (Bunditwongrat, Thongmak & Ngarmyarn, 2011). It seems that the current problem with these initiatives is a lack of effective strategy to successfully implement these models. The current problem with process improvement initiatives is a lack of an effective strategy to successfully implement those standards or models (Hardgrave and Armstrong 2005; Brietzke and Rabelo 2006; Abrahamsson and livari 2002; Babar and Niazi 2008).

It is therefore not an understatement that integrating these models effectively and efficiently can be challenging, as process improvement occurs within the context of the organization’s strategic plans and business objectives, its organizational structure, the technologies in use, its social culture, and its management system (Paulk et al., 1993). This implies that for the implementation of project management maturity, aspects outside that actual models must also be addressed. This is supported by results of a PricewaterhouseCoopers survey where the findings clearly illustrate that project failure is more likely due to organisational factors, stating that broader organisational models are more appropriate (Brookes and Clark, 2009). To determine the key factors that play a role within this context, gives impetus to examine the field of strategy implementation in more detail.

3.3 Strategy Implementation

As the implementation of project maturity is a strategic issue (Bay and Skitmore, 2006), the implementation practices must be examined.

If there is one clear golden thread in the topic of strategy implementation, it is that it is vitally important to do it properly if an organisation is to be successful. This assertion remains consistent for any implementation, ranging from wanting to compete in a different
industry basis or to implementing organisational project management maturity. In addition, there seems to have been a common trend that companies focus too much in formulation but fail at implementation (Boojihawon, 2005) resulting in strategic drift (Segal-Horn, 2004). Which could be the case in trying to implement a too high level of maturity without covering the foundation aspects (Paulk et al., 1993). Hence, knowing that all organisations face a common challenge when implementing a new strategic implementation such as organisational project management maturity - to successfully manage the changes that will occur as a new initiative is deployed (Saunders, Mann & Smith, 2008).

The literature for this theme examines the latest thinking of a selection of key elements, that must be in place if an organisation wishes to successfully implement a new strategy, be it planned or emergent.

Popular concepts in strategy implementation relate to structure, systems and culture, knowing that they must be aligned to obtain a successful implementation (Boojihawon, 2005). In reviewing the literature on these, factors surfaced that ensures this alignment. In their analysis of various implementation frameworks, Saunders, Mann and Smith found reoccurring elements of strategy deployment; among these is people, communication and alignment (Saunders, et al., 2008). This is in line with assertions made by Bay and Skitmore (2006), and Albu and Panzar (2010) to the importance of aligning strategy implementation for maturity process improvement. It therefore is palpable to examine these in more detail, supplemented with a view into theories of structure.

Lorange states that the latest trends indicate that human resources are becoming the key resource on which to focus the implementation of strategy (1998). This view is also shared by Raps in affirming that previous implementations failed due to the absence of the human factors in strategic planning (2005). The rationale therefore, is the drive to strengthen strategy implementation, aiming at faster, internally generated and profitable business growth (Lorange, 1998). To do so, the strategy implementation must fit with personality profiles of key players therein (Raps, 2005); else success could be marginal, if not an outright failure.

The traditional hierarchical and divisionised organisations where formal strategy is periodically implemented in a top down manner is not conducive to create a responsive organisation that can take advantage of opportunities in a highly dynamic and ever changing environment (Lorange, 1998). No longer is success determined by those with the largest budgets but by those that are knowledge driven, which utilise the know-how of people, allocating them in the best possible way to achieve effective implementation. This is also in line with Grant’s seminal work on the resourced based view (2010). These also drive the values into clear organisational competencies on which successful implementations can be based (Coon and Wolf, 2005). Similarly, it is important to recognise incompetency, and be open to improving these, or to focus on other capabilities (Sterling, 2003). The culture plays a crucial part in cementing these values and creating a climate for change (Boojihawon, 2005). This supports Paulk et al. factors for successful implementation of process maturity (1993).
There is a tendency toward less formal strategic implementation, within the current flat and networked organisations. Here, strategic initiatives are being undertaken by cross functional task teams on an ad hoc basis (Lorange, 1998), similar to those utilised in the Nissan turnaround to drive the implementation across internal boundaries, creating this famed success story (Yoshino and Egawa, 2006). A simple reason for this is also that long term formal strategies are no longer useful due to continuous change (Lorange, 1998). This holds its own challenges, with staff having possible silo mentalities, which could cause power struggles, but can be overcome by clear assignment of implementation responsibilities (Raps, 2005). In using such an approach, it has been noted that it fosters organisational learning (Saunders, et al., 2008).

This sentiment is shared by Haudan, who agrees that successful strategy execution takes people and not paper (2007). He believes that by building critical connections between all members of an organisation to understand the drivers of change, shared goals and capabilities, only then will strategy implementation be successful (Haudan, 2007). In essence, the human element in carrying out strategic decisions cannot be ignored (Miller, Wilson & Hickson, 2004), as change would be painstakingly difficult to initiate.

However, Saunders, Mann and Smith view this ad hoc implementation style as projects and not long term strategic initiatives (2008), and therefore caution that an organisation must not lose focus on its long term objectives, noting that the collection of projects should be evolving to support the long term strategy. It can be conjectured that implementing an organisational project management maturity initiative, could be construed as an ad hoc implementation, but its importance to delivery future strategic actions efficiently, places it on a highly important level. Getz, Jones and Loewe, have taken cognisance of this in developing their implementation framework termed migration management (2009). They believe it improves on the conventional strategy implementation approaches by utilising a collection of forward looking projects that align with the strategic direction (Getz, et al., 2009). These projects are then enabled and aligned to the organizational capabilities (Getz, et al., 2009), which give flexibility to respond to unanticipated environmental changes.

Leadership occurs at all levels in an organisation, with the best organisations having effective leaders at all levels (Louw and Venter, 2006). The following section will examine how these leaders affect strategy implementation, in context of the previous section’s findings.

To do this successfully, the change needs to be managed from top to bottom of the organisation (Lorange, 1998). The importance of this is also reaffirmed by Boojihawon, in stating that the leader of the organisation is the most critical influence to change culture (2005). Various other authors note the importance of leadership within strategic implementation, with strategists such as Okumus stating that the CEO is crucial in manipulating internal contexts to make the organisation receptive to change (2003). Leaders can communicate a compelling case for change and build passion and commitment for the common goal of the organisation and hence, the implementation of strategy (Coon and Wolf, 2005). They also ensure that resources are allocated to priority areas and communication is open and honest.
There is evidence abound stating that leadership and commitment of top management is, and remains the most important aspect of successful implementation (Raps, 2005). There is a clear lack of evidence that points towards the contrary that implementations can be successful without leadership involvement, but there must also be leadership from the bottom up to ensure that the overall implementation is managed and that the company is aligned. This is particularly true for the implementation of project management maturity interventions.

However, the role of middle management in strategy implementation must also not be overlooked as it has been in the past (Raps, 2005), as they are of similar importance as top management (Okumus, 2003). This is due to the fact that they are either directly or indirectly engaging in developing and implementing strategic decisions, that have implications on their and other functional areas. These middle managers are also mainly responsible for setting controls to secure a positive outcome of strategic decisions and must therefore possess capabilities (or be trained to do so) to effectively and dynamically, ensure appropriate performance (Ghorbal-Blal, 2010). As capabilities are of essential importance in the application of maturity models, such as OPM3, an organisation must make efforts to harness and mould these (Nieto-Rodriguez and Evrard, 2004).

As the skills and knowledge at this level of management were previously untapped, it is now realised that they are in a position to unleash momentum and drive change; as they are close to the people on the front line, they have the ability to directly influence strategy implementation (Haudan, 2007). To obtain the full benefits and buy in of these middle managers to apply their knowledge, they must be involved from formulation to align their efforts on the implementation (Raps, 2005). However, it is believed that few managers have the time to evaluate all the complexities of managing strategic change, but by strong communications and directing to a framework of priorities; their attention can better be focussed on key areas (Saunders, et al., 2008). There is a premise however that the success of this is based on, namely these managers must have readiness and experience in conducting these implementation activities, else their bounded rationality could cause them to hold back in executing strategic decisions (Miller, et al., 2004).

In light of these leadership and management concepts, the overall leadership of strategy is being redefined, where the focus now moves away formulating strong formal plans to being more focussed on involving the entire company to execute strategy and deliver results (Haudan, 2007). As an implementation of organisational project management maturity touches nearly all aspects, this overall involvement is crucial to its success. This links back to a recent article that challenges current thoughts about the paradigm of the distinction between formulation and execution, where Martin states that this is not the case and that there must be a virtuous strategy circle that allows information to flow from employees upstream to adapt strategy (2006). Essentially, these must take into consideration the constant interaction of implementation and on-going strategy formulation (emergent strategy) in dynamic environments (Saunders, et al., 2008). In addition leaders’ effectiveness at different levels need to be aggregated to show significant performance improvement in strategy execution (O’Reilly, Caldwell, Chatman, Lapiz & Self, 2010), clearly
showing that a combined approach is now required. i.e. no one person in a large organisation can lead an implementation. This fact was empirically verified in the in-depth research of O’Reilly et al. (2010).

It must be noted, as the ad hoc implementations occur, one should not rule out the traditional strategic implementation, as they are still useful to strengthen planning and control systems (Lorange, 1998).

A further aspect that is synonymous with strategy implementation is structure and communications. An organisation’s structure is the ways in which its activities and members work together to achieve its goals (Boojihawon, 2005). Although no structure is universally effective for every organisation the following section examines some underlying principles that are applicable and current thought leadership on the concept.

Structure is important, but companies must not immediately rush in to change the structure to accommodate the implementation (Neilson, Martin & Powers, 2008). Traditionally, implementation concepts generally overemphasize structural aspects, reducing the effort to an organisational exercise (Raps, 2005). Therefore, implementation must happen from an integrated and dynamic point of view, taking into account the soft aspects such as human resources (discussed above), communication and culture (Raps, 2005). Research has shown that fundamentals of good execution start with clarifying decision rights and making sure that information flows where it needs to go; if these are in place the correct structure often becomes obvious (Neilson, et al., 2008).

In doing so, any structural changes that are made, have a higher potential for longevity in addition to flexibility as opposed to short term efficiencies (Neilson, et al., 2008). Studies have shown that this in itself potentially leads to flatter structures with greater spans of control (Neilson, et al., 2008). With these clear roles and responsibilities in place, the structure is easier to define, which then has a more effective impact on defining the systems to support the implementation (Neilson, et al., 2008). This again ties back to the importance of people and their engagement with the overall strategy and their importance to implementation (Haudan, 2007).

The existing notion (Boojihawon, 2005:15) that flatter organisations are more conducive to implementation remains reinforced in newer views, with a survey of prominent members of the Harvard Business Review’s advisory council reiterating the importance of this fact and to overcome the traditional issues of tall hierarchies, such as bureaucracy and slow response to change(Harvard Business Review, 2010). Tall hierarchies are not conducive of what they believe to be the most important aspect of execution, namely the ability to clearly communicate and making it meaningful to those on the front lines; this is ranked much higher in order of importance, than resistance of change being an obstacle to implementation (Harvard Business Review, 2010).

In a recent PwC survey, their findings relating to organisational structure and project performance, showed a positive correlation between the two (Nieto-Rodriguez and Evrard, 2004). i.e. the higher the alignment between organisational structure and business needs,
the higher the overall project performance of the organisation. The most effective structure was a projectised or strong matrix structure, with a traditional functional structure being weakest.

This view, that communication is key, is shared by Raps, who states that all efforts must be made to establish an open, two way programmes in the beginning on an implementation and not after (Raps, 2005). It is also noted that communications to this regards must not be assumed to be a single concept, but a construct of related concepts that must be reviewed systematically to enable a successful strategy implementation (Saunders, et al., 2008).

However, with a contemporary survey revealing that on average only 44% of employees understand the most important goals of a strategic implementation; such a statistic again reinforces the importance of having the right people(HR View) and strong communications to avoid such a pitfall (Coon and Wolf, 2005:24). Freedman goes as far in stating that the current world class firms ensure that their internal and external stakeholders have full understanding of the strategy, how it was arrived at, and what their roles are in the implementation (2003).

In their study to determine what drives strategic organisational excellence, Saunders, Mann and Smith found that only after communication and alignment to ensure understanding of the strategic initiative and that actions follow strategic direction, the structure is implemented (2008).

In light of this, a study conducted by Olson, Slater and Hult, found clear evidence that overall company performance is strongly influenced by how well a firm’s strategy is matched to its organisational structure (2005). This is regardless of the notion that strategy either follows structure, or alternatively that structure follows strategy (Boojihawon, 2005).

Due to the fact that a successful implementation requires coordination and appropriate efforts of individuals throughout the organisation, an appropriate structure is necessary to define key success activities(roles and responsibilities as discussed above) and a system that promotes those same activities (Olson, Slater & Hult, 2005).

In other words, company performance depends on proper organising activities, in addition to suitable leadership, and an organisational culture that supports communication and knowledge sharing (Cater and Pucko, 2010). Research has shown that by adapting the organisational structure, to match the selected strategy, has had positive effect on return on investment (Cater and Pucko, 2010).

It is known that companies are simplifying structures, making them less complex to enhance performance, to improve the flow of communications, autonomy of decision making and eliminating bureaucracy to be more responsive to opportunities/threats of the environment (Cater and Pucko, 2010).

However, Freedman believes that structure is of relative little importance in implementing strategy (2003). He states that “of vital importance, are the best in class business processes that facilitate work getting done between the white spaces on the organisational chart and a
culture of superior performance” (2003:30). This is in line with the people, process and leadership section of this theme’s literature review, with its importance of these activities clearly illustrated. Nevertheless, structure drives behaviour, and behaviour drives results (Golden Pryor, Anderson, Toombs & Humphreys 2007), therefore, an appropriate structure remains important for internal alignment once the latter aspects are in place; again emphasizing the fact that people operate within the structure to establish performance, solidifying the importance of human resources within the overall strategy implementation (Golden Pryor, et al., 2007).

3.4 Organisational Learning

In reinforcing the characteristics of highly mature companies, Wu and Kwoting state that the capacity for continuous change and improvement is particularly important in current turbulent and complex environments where competitive situations are changing rapidly and unpredictably (2010). An organisation’s ability to change or redesign them continuously is necessary for survival (Nadler, Shaw & Walton, 1994). This also holds true for project management processes, as projects deliver strategy (Yazici, 2009).

As OPM, PM2 and other models have their roots in total quality management (Brookes and Clark, 2009), McAdam and McIntyre declare that to realize the knowledge benefits of these, they should be combined and integrated with organizational learning principles (1997). This also places focus on making the methodologies work, rather than just considering theory underlying assumptions; also forming an important link to strategy implementation. Further research has also concluded that organisational learning offers avenues to bring about continuous improvement in processes (Wong, et al., 2009).

In their seminal work on organisational learning and associated styles, Argyris and Schon (1978) defined single loop learning as a process of adaption through error detection and correction so that organisations are able to achieve their goals. This essentially entails detection and correction of errors to ensure the accomplishment of anticipated outcomes (Wong, Cheung & Fan, 2009). Double-loop learning occurs when error is detected and corrected in ways that encompass the adjustment of an organisation’s original policies or objectives. An organisation that practices double loop learning, encourages its staff to question existing systems or norms already in place and entertain the possibility of changing these norms to improve standards (Tapp, Edwards, Braspanning, Eriksson, Kuch, & Elwyn, 2008), to address root causes of underperformance (Wong, et al., 2009), ultimately resulting not merely in new decisions, but in new rules and methods for deciding (Back and Seaker, 2004). Triple loop learning or duerto learning, facilitates learning to learn for continuous improvement. This is classified as specific learning about a particular change that can be applied elsewhere and generalised learning that can apply to other learning situations in a standardised manner (Tapp, et al., 2008).

A prime example of such learning applicable to the research, is illustrated by Hind and Koenigsberger, in stating that failure to reach project outcomes, does not necessarily
represent a failure in totality, as the lessons learnt can be fed back into the process improvement cycle (2007).

Jen-Shou and Chin-Yi state that single-loop learning improves quality progressively, while double-loop learning composes large magnitude improvement (2005). There are however discrepancies amongst researcher’s views, with Wong and his colleagues reporting that organisations improvement activities are mainly derived from single loop learning, particularly in a projectised environments (2009). Its effectiveness has however been questioned in its contribution to competitive advantage. Wong et al. do go on to state that findings of their researches concluded that triple loop learning is not directly related to project performance improvement, but that it “serves as a platform to facilitate the achievement of single and double loop learning”(2009:504), with double loop learning making the most impact with project performance improvements.

Notwithstanding, it is scrupulously believed that learning enhances organisational knowledge for facilitating improvement and adaptation within organisations (Smith, 2001). In citing Fiol and Lyles, Gherardi’s views on this are that organisational learning is the process of improvement of actions through better knowledge and understanding (2001). Therefore one can postulate that in order to be successful at implementing and improving project management processes, an organisation must focus to primarily become learning, in order to advance to higher levels of maturity where they can implement improvements based on an understanding of its business objectives and performance needs (Carnegie Mellon, 2010).

This sentiment is echoed by McAdam and McIntyre in stating that if these methodologies incorporate organizational learning principles, they give a more realistic representation of business/process improvement and then there will be increased success in terms of application and business benefit (1997), which in turn would lead to delivering projects on time, quality and budget, leading to increased margins and customer retention. Without these enablers, companies most likely will continue as is and not make significant improvements, if any at all. Not learning, will lead to the dysfunctional behaviour continuing to cause project and performance failures (Pitagorsky, 2011), and therefore the context is required to change to infuse double loop learning. However, to instil this vision into an organisation that does not share such a standing, would require astute change management.

In challenging the concept of continuous learning due to real world constraints, Jen-Shou and Chin-Yi state that most improvement activities have their limits to growth, given the limited organizational learning capabilities (2005). This enforces the importance of learning, as Ahmed, Loh and Zahiri hypothesize that learning and continuous improvement is intricately linked (1999). From a competitive strategy perspective, it is contended that the ability to learn faster than your competitors may be the only sustainable competitive advantage (De Geus, 1988). This is reaffirmed by Hagen, in stating that the sustainability of quality improvement programs within organizations is derived from learning and knowledge that can take place therein (2010). Consequently, as continuous improvement is a proxy for remaining competitive, and as a measure of effectiveness of for a company’s internal
policies and guidelines, an organization would need to be aware of the level to which that are successful in project delivery – in turn, the successes of projects is dependent upon the organization being affable towards projects (Rad and Levin, 2006).

In research conducted by McAdam and McIntyre into generic business process improvement methodologies, it was further more found, that those linked with learning principles, will have increased success in terms of application and business benefit (1997). Similarly, they also cite a survey conducted by Robey, revealing that empirical proof that this approach leads to greater success (McAdam and McIntyre, 1997). This is cemented by the fact that organisational learning is a key requirement for the facilitation and optimisation of improvement and innovation in any business processes Process improvement and learning, has been widely research and proven (Bushe, 2009; Kock and McQueen, 1998; Tapp, et al., 2008; Keane, Barbare & Munive-Hernandez, 2007).

Hence, having the capability to learn from previous programmes and projects, establishing and embedding programme and project management processes, and ensuring that programmes and projects acquire the skills and competencies to undertake the necessary activities are of paramount importance to move to higher levels of maturity (Office of Government Commerce, 2006). This does not detach from the fact that there is a plethora of process improvement models such as Six Sigma and lean processes that can be implemented, that focus on quantifiable financial returns or minimization of wastage. However, as the focus of project management process improvement maturity lies in learning, this is considered to be of higher validity.

In having established the importance of organisational learning within the implementation and attainment of higher levels of project management maturity, a more detailed view of learning is needed obtain understanding of the finer intricacies.

Learning can be defined as the outcome of an inquiry that produces knowledge and leads to change, hence organizational learning materializes when people question how they work and produce knowledge together that leads to a positive change in their patterns of interaction (Bushe, 2009). To do so, people need to be aware of the need for ongoing change and to challenge existing processes, leading to double loop learning (Tapp, et al., 2008).

It can therefore be stated that this is also underpinned by the need to transfer knowledge as a base for organisational learning. It has been put forward, that knowledge must flow freely from one part of the organisation to another; however this remains a complex and problematic issue (Kock and McQueen, 1998). One of the largest barriers to this flow is departmentalisation, characterised by the perceived complexity that prevents staff from outside a department form understanding how and why activities are performed (Kock and McQueen, 1998). Various success cases in clever adaption of structures and the use of cross functional teams have however assisted in overcoming this, such with the phenomenally successful Nissan turnaround illustrating the importance of structure (Yoshin and Egawa, 2006).
Is has been noted that knowledge management systems, which integrate management databases, process maps, lessons learnt and improvement initiatives, support organisational learning and promote continuous improvement through consideration of strategic plans (Keane, et al., 2007). A detailed study of these falls outside the current research, but its importance in facilitating organisational learning remains a consideration.

As this type of free flow of information is central to organisational learning, it therefore is an important characteristic for developing and organisations culture. In light of this, Tapp, et al. state, that to improve and organisation’s maturity, the leader needs to propagate principles that improve the flow of information (2008). A further aspect that was found by Kock and McQueen, relating to such a culture, is that a climate of risk taking and experimentation plays an important factor in organisational learning organisational learning (1998). Both of these assertions, for greater success, are accomplished by building a team that has a high capability and propensity to challenge the accepted rules and parameters that decisions or actions face, which personifies double loop learning (Back and Seaker, 2004).

Organisational learning happens both on an individual and organisational level (Kell, 2003). In citing the works of Pedler, Keane et al. state that important concepts, relate to aspects of the organisation which operate in order to facilitate and encourage individual learning(2007). They further assert that individuals learn together in a collective system with a knock-on effect, which should involve all members of the organisation; and that such an organisation experiences a process of continuous change and adaptation and focuses on learning about the change process itself and also on enabling learning of individuals (Keane, et al., 2007:136)

Table 2 below illustrates the relationship to the process of learning for both individuals and organisation, including typical barriers thereto. These give valuable insights into probing the research problem.

Table 2: Individual vs Organisational Learning and Barriers

<table>
<thead>
<tr>
<th>How do individuals learn</th>
<th>Individual barriers</th>
<th>How to organisations learn</th>
<th>Organisational learning barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>By doing: undertaking new actions</td>
<td>Fear of failure</td>
<td>By undertaking and evaluating processes</td>
<td>Set strategies</td>
</tr>
<tr>
<td>Through education: formal or informal and internal or external</td>
<td>Overconfidence and arrogance</td>
<td>From new leadership, or government rules, which require education in new processes</td>
<td>Negative organizational culture/inflexibility</td>
</tr>
<tr>
<td>From experience: reflection on mistakes and successes, and challenging the norms</td>
<td>Resistance to and fear of change</td>
<td>From operating experience: evaluation of mistakes or successes</td>
<td>No challenge toward exploring</td>
</tr>
</tbody>
</table>
4. Through observation and contemplation: thinking about matters and processes

<table>
<thead>
<tr>
<th>Factors</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prejudices and stereotyping</td>
<td>Through Research and Development</td>
</tr>
<tr>
<td>Through communication with others: peers,</td>
<td>No positive affirmation</td>
</tr>
<tr>
<td>colleagues, instructors, mentors, etc.</td>
<td>Through communication with stakeholders, and by reviewing competitors'</td>
</tr>
<tr>
<td></td>
<td>actions</td>
</tr>
<tr>
<td>From society's expectations</td>
<td>Unawareness of the big picture</td>
</tr>
<tr>
<td></td>
<td>From economic, social, environmental and other requirements</td>
</tr>
<tr>
<td>From contacts with new environments</td>
<td>No social interaction</td>
</tr>
<tr>
<td></td>
<td>From exploring and entering new markets</td>
</tr>
<tr>
<td>From Trends</td>
<td>Too much distraction from focus</td>
</tr>
<tr>
<td></td>
<td>Lack of motivation</td>
</tr>
<tr>
<td></td>
<td>Environmental factors</td>
</tr>
</tbody>
</table>

Adapted from (Marques, 2007)

Regardless of the various models available, both Keane et al. (2007) and Hagen (2010) summate that each organization needs to discover its own way to build and effective learning organization and that it is contingent of different learning style outcomes. Organisational learning therefore provides the company the ability to conquer breakthrough problems, resulting in greater competitive advantage (Hagen, 2010), which is deemed to be the case with implementing organisational wide project management maturity initiatives, leading to the problem on quality improvement less likely to occur (Jen-Shou and Chin-Yi, 2005).

3.5 Change Management

In further examining factors that impact project management improvement in terms of instilling maturity, is that many aspects within the organisation need to change. In quoting Kotter and Schlesinger, “It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things” (2008:130). This assertion illustrates the need to pay serious heed to managing change within attempts to improve project management processes, or to instil an organisation wide project management practice. This is of such a magnitude that Harvard Business Review asserts that managing change is a leader’s greatest challenge (Stewart,
The importance of change management in relation to project management maturity is illustrated in Figure 7 below.

Figure 7: Change Management vs Maturity Level

As these figures are related to successful companies, but given the high percentage of failed change management efforts in industry as a whole, it is essential for organizations to direct more attention to the specifics of change execution (Stragalas, 2010).

Whatever approach is used for change, regardless of each process or group of processes, an organization must analyse the current state, agree on the target state, identify the gaps, and create recommendations for improvement (Craig-Jones, 2007). In the context of implementing organizational project management maturity, these would consist of applying the processes in the OPM3 model.

When a significant attempt is made at improving organizational performance, it must be realized that change will take place. Van de Ven and Poole state that organizational change is an empirical observation in an organizational entity of variations in shape, quality or state over time (1995). Shalk, Cambell and Freese, elaborate on their view by augmenting it to be after the deliberate introduction of new way of thinking, acting and operating (Pardo del Val and Martínez Fuentes, 2003). This is usually driven to help an organisation cope with a new/more challenging market environment (Kotter, 1995), or in anticipation to cope with potential future problems (Burnes, 2004).

As such a type of fundamental change is often resisted, it makes leading change absolutely essential and incredibly difficult (Kotter, 1995). Leading change signifies the creation of readiness through proactive attempts by a change agent to influence the beliefs, attitudes, intentions and behavior of change participants (Jansen, 2000). To achieve this state, appropriate change management must be followed, which is defined by Kotter as the utilization of basic structures and tools to control any change effort, minimizing the impacts on workers and avoid distractions (Kotter, 2011).

There are various drivers for change, organizations transform as a response to external and internal pressures (Burnes, 2004). Internal factors drive the organizations performance from
within its boundaries, while being within its control (Kotter, 1996). External factors driving change are those that lie outside the control of the organization (Kotter, 1996). As implementing and increasing organizational project management maturity focuses to a greater extent on planned change, the literature review for this theme follows suit. It must be noted that external factors cannot be disregarded, as they often give impetus to planned change (Kezar, 2001).

Planned change models assume that organizations are purposeful and adaptive (Kezar, 2001) and that change occurs because leaders, change agents, and others see the necessity of change. Carnell states that the process for change is rational and linear, as in evolutionary models, but individual managers are much more instrumental to the process (Kezar, 2001). Both these conclusions link back closely to important findings under the strategy implementation theme, those are beneficial and drive flexibility of organizations to respond proactively to change in an efficient manner. This can be further facilitated by an environment that is conducive of continuous learning (Argyris and Schon, 1978).

Unfortunately many organizations respond drastically in attempting to improve in the face of a crisis, but once the crises is over, these reactive motivations tend to fade (Rad and Levin, 2006). Consequently, the motivation for change should arise from a desire to change the project management environment from a reactive mode to a proactive model (Rad and Levin, 2006), which can be driven by change management.

From a perspective of how change relates to the implementation or improvement of project management maturity, Nieto-Rodriguez and Evrard’s world wide analysis revealed that there is a clear link between change management and the best performing organisations (2004). Through their empirical research, they found an “undeniable correlation between project performance, maturity level and change management. The majority of the best performing and most mature organizations always or often apply change management” (2004:23).

As a maturity level is a well defined evolutionary plateau toward achieving a mature process, with each maturity level providing a layer for in the foundation for continuous improvement (Paulk et al., 1993). Therefore, maturity models and the implementation thereof can be considered to be an evolutionary change rather than a more disruptive revolutionary change, falling in line with the planned model for change. However, it also crosses into the strategic change category, due to the core changes for improved performance within organisations. Therefore, it should not be assumed that such a change would be easy, based on the fact that the models themselves take an evolutionary methodology – which can lead to resistance.

Resistance is a significant barrier to change, to such an extent that experts in the field of agree that:

Change initiatives often backfire because managers apply one-size-fits-all approaches. For example, they attempt to combat resistance to change by involving employees in the initiative’s design even when employees don’t have the information needed to provide useful input (Kotter and Schlesinger, 2008:132).
It has been noted that barriers to change include poor leadership, lack of management support for change, absence of trust between management and employees, internal conflict for resources, recognition, or rewards, dysfunctional culture, lack of commitment to change, inability or unwillingness to deal with resistance, and lack of consequences for inadequate or poor performance (Ann, Godek & Gilley, 2009).

Furthermore, if leaders do not implement a change without a solid grasp of the organisational context, they would most likely be in inconsistent with the goals trying to be achieved (Kezar, 2001).

Most change programs or interventions are met with resistance (Agócs, 1997). Harrison affirms that resistance to change has long been recognized as a barrier to organizational change attempts and that it encompasses a range of behaviors from passive resistance to active resistance or even aggressive resistance (Jansen, 2000). It is a much researched topic with Pardo del Val and Martínez Fuentes citing various authors such as Lawrence, Maurer, Strebel Waddell and Sohal in separate research spanning two decades, stressing that the reasons for the failure of many change initiatives can be found in resistance to change (2003) These could be intentional or not to either slow down or terminate an intended change (Lines, 2004).

Atkinson states that even the best planning and apparent logic behind change, a change agent must expect some resistance, particularly in the absence of positive benefits, even more so (2005). In his work, he however also notes that sometimes, if the change seems irrelevant, resistance provides a good opportunity to open debate, and therefore can on occasions foster the learning process (Atkinson, 2005). This is confirmed by Pardo del Val and Martinez Fuentes, that resistance can be a useful source of information, being useful in learning how to develop a better change process (2003). This however presupposes that the organizations are capable of learning, reaffirming the importance of organizational learning. In its absence, no debates will be entered into, with resistance being the order of the day. This has been proven many times over in the research literature, which reports of delayed and abandoned change initiatives which are caused by resistance to change (Agócs, 1997).

Resistance to change can come originate from individuals within the organization or from the organization itself as an entity (Kezar, 2001). Agócs declares that individuals resist change due to the habit of inertia, fear of the unknown, fear of losing power, or being deficient of skills needed after the change (1997). Correspondingly, organizations are believed to resist change because of inertia, sunk costs, scarce resources, threats to the power base of the old dominant coalition, values and beliefs, conformity to norms, and inability to perceive alternatives (Agócs, 1997). In light of these assertion, Kotter contends that individual resistance is quite rare, suggesting that obstacles to change more often lie within the organization (Jansen, 2000). Such is the case in the structure or performance appraisal systems which are not aligned with the desired new behavior (Jansen, 2000). This links to the importance of being continuously flexible to change as discussed in the strategy implementation theme.
In the cases of implementing performance improvement by instilling organisational project management maturity, resistance is said to be encountered from many areas. Typical resistance that can be found in implementing project management maturity is that even though the processes have been clearly defined, with associated policies and guidelines, they are simply not followed (Paulk et al., 1993).

In light of these types of resistance, Atkinson found that the effective change agents will rely on a barrage of influencing strategies and techniques, not to ‘win the war’ or argument, but to help others, learners and participants, to reframe things to see beyond their relatively negative viewpoint (2005). Change agents therefore enlighten the members to understand the positive opportunities for those at the receiving end of change.

Hence, Kotter and Schlesinger deem that change can be planned and managed to ease resistance and foster acceptance for the change (2008). They purvey that resistance to change can be surmounted by means of specific interventions such as education and communication, participation, negotiation, manipulation, and even coercion (Agócs, 1997).

It can therefore be postulated that in order to successfully implement an organizational project management maturity initiative, a solid change management approach must be followed in order to institutionalize the associated processes and behaviors. To lead change, Kotter and Schlesinger suggested that strategies should be tailored to the types of resistance that could be encounter (2008). For instance, with employees who fear change, skills training should be provided. Consider situational factors, for example, to avert an imminent crisis, change quickly – even if that intensifies resistance (Kotter and Schlesinger, 2008).

### Table 3: Methods for dealing with resistance to change

<table>
<thead>
<tr>
<th>Approach</th>
<th>Commonly used in situations</th>
<th>Advantages</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education + Communication</td>
<td>Where there is a lack of information or inaccurate information and Analysis</td>
<td>Once persuaded, people will often help with the implementation of the change.</td>
<td>Can be very time consuming if lots of people are involved.</td>
</tr>
<tr>
<td>Participation + Involvement</td>
<td>Where the initiators do not have all the information they need to design the change, and where others have considerable power to resist.</td>
<td>People who participate will be committed to implementing change, and any relevant information they have will be integrated into the change plan</td>
<td>Can be very time consuming if participators design an inappropriate change</td>
</tr>
<tr>
<td>Facilitation + Support</td>
<td>Where people are resisting because of adjustment problems</td>
<td>No other approach works as well with adjustment problems</td>
<td>Can be time consuming, expensive, and still fail</td>
</tr>
<tr>
<td>Negotiation + Agreement</td>
<td>Where someone or some group will clearly lose out in a change, and where that group has considerable power to resist.</td>
<td>Sometimes it is a relatively easy way to avoid major resistance</td>
<td>Can be too expensive in many cases if it alerts others to negotiate for compliance.</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Manipulation + co-optation</td>
<td>Where other tactics will not work or are too expensive.</td>
<td>It can be a relatively quick and inexpensive solution to resistance problems.</td>
<td>Can lead to future problems if people feel manipulated.</td>
</tr>
<tr>
<td>Explicit + implicit coercion</td>
<td>Where speed is essential, and the change initiators possess considerable power.</td>
<td>It is speedy and can overcome any kind of resistance.</td>
<td>Can be risky if it leaves people mad at the initiators.</td>
</tr>
</tbody>
</table>

Adapted from (Kotter and Schlesinger, 2008)

In examining the concept of planned approaches to change management, the literature review revealed that much has been written about the subject, with various techniques (McSparren and Motley, 2010), including:

- **The cognitive approach**, which uses goal setting and coaching to create a positive mental picture that appeals to people’s logic.
- **The psychodynamic method**, which uses insight to seek understanding of a person’s experience of change.
- **The behavioral strategies**, such as the use of rewards and punishment to modify behavior the humanistic psychology approach, which uses the ideas of development, growth, and potential to help people see the benefits of change.

Various models to change management have sprung from preceding approaches. Most noteworthy and revolutionary is Lewin’s 3 Step model, which serves as the foundation of all other change models or frameworks, aimed at changing behaviors of groups which involves actions initiated in phases over time (Erwin, 2009).

Lewin developed a three phase model of change, based on the premise that an understanding of critical steps in the change process increases the likelihood of the successful management of change (Erwin, 2009). Lewin proposed that before change and new behavior can be adopted successfully, the previous behavior has to be discarded (Burnes, 2004). These steps in the process are illustrated below:

- **Unfreezing**:

  This stage involves setting aside the existing mindset and preparing to change (Carter, 2008). Action is taken to unfreeze the existing attitudes and behavior, which is essential for supporting employees and minimizing change resistance (Nyasha, 2011). Lewin believed that the stability of human behavior was based on a quasi-
stationary equilibrium supported by a complex field driving and restraining forces (Burnes, 2004). He argued that the equilibrium needs to be destabilized (unfrozen) before old behavior can be discarded (unlearnt) and new behavior successfully adopted (Glensor, 2010).

- **Changing:**

During the second stage, change occurs, creating a period of transition and confusion as adaptation occurs (Carter, 2008), while restructuring individuals’ perspectives (Erwin, 2009). Here, that any attempt to predict or identify a specific outcome from planned change is very difficult because of the complexity of the forces concerned (Burnes, 2004).

Schein states, “unfreezing is not an end to itself, it creates a motivation to learn but does not necessarily control or predict the direction” (Nyasha, 2011). Here, the actual implementation of the change happens, such as changing tasks, routines, demands and relationships, people and groups, structure and technology (Glensor, 2010).

- **Refreezing:**

The final stage involves solidification of the new mindset and a return to pre-change comfort levels (Carter, 2008) by reinforcing and integrating the change (Erwin, 2009). Refreezing seeks to stabilize the group at a new quasi-stationary equilibrium in order to ensure that the new behaviors are relatively safe from regression (Burnes, 2004). Essentially what has to happen here is the positive reinforcement must be proliferated to institutionalize the new attitudes and behaviors. This new behavior must be, to some degree, congruent with the rest of the behavior, personality and environment of the group or it will simply lead to a new round of disconfirmation (Schein, 2010). Burnes elaborates on this by stating this phase seeks to stabilize the group at a new quasi-stationary equilibrium in order to ensure that the new behavior is relatively safe from regression (2004).

At a stage, Lewin’s model was adopted as a general framework for understanding the process of organizational change, however has been deemed too broad in its overall approach and has become somewhat unfashionable due to its age (Glensor, 2010).

Various researcher and authors have expanded on Lewin’s work, with the most noteworthy and prominent in business literature, being Kotter’s eight step model, which addresses the cause and effect process of change, as a framework to link change theory and practices (Erwin, 2009). It also a more extensive multi-step framework that incorporates leadership, employee involvement and commitment, monitoring and rewards (Ann et al., 2009).
Kotter’s has been assimilated into an eight-step process for leading organizational change for offering clear guidance into change management efforts (Stragalas, 2010) see figure 5:

1. Establishing a sense of urgency,
2. Forming a guiding coalition,
3. Creating a vision,
4. Communicating that vision,
5. Empowering individuals to act and removing obstacles,
6. Creating short-term wins,
7. Consolidating improvements and creating more change, and
8. Institutionalizing new approaches.

Kotter has also reemphasized that change is only sustainable when new behaviors become part of the organization’s culture or part of its members’ basic values, beliefs, or ways of thinking (Erwin, 2009). It has also been confirmed combined research in the field that it is the one distinguishing factor between successful and unsuccessful change initiatives (Agócs, 1997; Burnes, 2004; Carter, 2008, Kotter, 1996, Jansen, 2000) – “Before they can expect success, leaders must be sure the organization’s culture encourages people to take risks and embrace change” (McSparren and Motley, 2010:14).

A lesson learnt from successful cases of change, is that the processes goes through a series of phases that usually require a considerable amount of time, and that skipping steps might create the illusion of speed, but never produces the intended result (Kotter, 1995). A lesser view on this component is that some believe that change takes as long as those who are driving it want it to take (Atkinson, 2005), with Graetz and Smith stating it is impossible to define (2010) – but the consensus is that either way, it cannot be instant. Kotter also places importance on the fact that any critical mistakes in any of the phases can have devastating impact on progress (1995). These assertions reinforce the importance of following a proven model for change, which has to be followed with motivation and energy (Patrick and Langham, 1966).

Similarly, in implementing project management maturity models, skipping steps will not lead to higher states being achieved immediately due to the fact that processes cannot reach their full potential, until the proper foundation is laid (Paulk et al., 1993). A gradual change is required.

Appreciation to the fact that various models for managing change exist, but for the purpose of this research, it is believed that the two models reviewed provide a good basis to obtain insight into the process, particularly as single approach may overlook essential elements and contain unarticulated assumptions (Kezar, 2001).

There are however students of change that argue that these suggested rational and planned approaches are the least effective approach to managing change. In Graetz and Smith’s work in examining the different philosophies of change, they challenge these linear models in stating that they focus on controllability under a strong leader, with the underlying assumption that change involves a series of predictable, reducible steps that can be planned
and managed (2010). As change is a deeply ambiguous process, these models are deemed not effective, due to the fact that they ignore the “complexities and contradictory nature of organizations and the diverse range of people working in them” (Graetz and Smith, 2010:150). For these reasons a criticism is that, when change goes well it is because leaders and managers were insightful and prescient, but when change goes badly it is because something happened that could never have been foreseen (Graetz and Smith, 2010). It is believed that this can be overcome by properly aligning the organization internally (Louw and Venter, 2006).

Furthermore, they criticize models, particularly Kotter’s 8 Step model for not taking these aspects into account, particularly the human factor. The model has also been critiqued by others in stating that there are gaps in the model and specific conditions for success, such as 75% of managers must believe that the status quo is more dangerous than the unknown (Stragalas, 2010). However, that same research proves that Kotter’s model provides great insights into action steps and the relevant application in the change process (Stragalas, 2010).

Graetz and Smith purvey constructs of a more competing and complementary nature, ranging from systems and biology to postmodern philosophies, stating further research questions as opposed to clear recommendations (2010). Admittedly, although somewhat reluctantly, they state that the rational models remain the most popular philosophy for leaders due to the precedent given to strategic decision making and planning towards organizational goals (Graetz and Smith, 2010).

It is therefore in general believed that the rational models are still relevant due to their participative nature, as supported in Lines’ study on the influence thereof, which concluded that the use of participation seems to be related to successful implementation of strategic change (2004).

### 3.6 Summary

This chapter provided an overview of what is believed to be the key underlying factors to successfully implement and improve project management maturity. The literature review led to the identification of components that should be aligned to improve the likelihood of improved performance in implementing such an initiative.

Project management maturity models are fundamental to assessing the current state of project management processes and in providing guidance to what mature processes look like; but cannot be viewed in isolation due to their non-prescriptive nature for implementation. This led to strategy implementation being highlighted as an important aspect, which should move focus to human resources, with strong leadership throughout the organisation, clear and continuous communications and a supportive structure for implementing an organisational project management focus strategy.
The interdependence between organisational learning and process improvement as a basis to have the capacity and capability to reach higher maturity states being characterised by continuous improvement.

Due to the changes in the way an organisation would operate in embracing organisational wide project management, change management processes and tools to facilitate these in a structured manner, particularly with in a fully inclusive approach to move to the desired state; while minimising resistance.

The following chapter, Chapter 4, has the objective of explaining the research survey design and methodology used for the study. This includes aspects such as data collection and analysis methods for this study.
CHAPTER 4 Research Design

4.1 Introduction

Chapter 1 provided a detailed background to the research study, its purpose and respective significance. Chapter 2 presented a theoretical analysis of the research problem using numerous theoretical and business models. In Chapter 3, an in depth literature review provided the academic context to the study. This chapter provides a detailed discussion of the research design, which consists of aspects such as the research strategy, research methodology, sampling techniques, data collection and interpretation as well as reporting.

Research design is the process of focusing of perspectives for the purposes of a study (Babbie, 2010) and provides the framework for collection and analysis of data (Bryman and Bell, 2007). It is in essence, the strategy for the study and the plan by which the study is to be carried out, it is used to structure the research, to show how all major parts work together to try and address the central research question (Coldwell and Herbst, 2004).

This study is of cross sectional nature which aims at the collection of data on multiple cases at a single point in time as opposed to a longitudinal study that focuses on changes over a certain period (Bryman and Bell, 2007).

The design for this research study follows below.

4.2 Population and Sampling

The population refers to the complete ‘group of people, items or units under investigation’ (Coldwell and Herbst, 2004:73). It can be defined as any group that is the subject of research interest (Goddard and Melville, 2007), which is typically a collection of individuals known to have similar characteristics that the research wishes to understand. These characteristics bind members into the same group, such as e.g. project managers (Bryman and Bell, 2007).

All surveys are concerned with identifying the research population which will provide all the necessary information for answering the research question (Gill, Johnson & Clark, 2010).

For the study at hand the population of interest are service orientated businesses that implement information technology solutions, business and financial services related projects, which are project management intensive. At the core lies the fact that these businesses must have endeavoured (or wish to) to increase project management maturity. Such a population can be found from maturity surveys that have been conducted, business directories, the Project Management Institutes SA Chapter and personal knowledge. As the issues with increasing project management maturity are more prevalent in larger companies, this population includes companies with more than 100 employees. Within these, people that form the population are senior project and operational managers, or relevant persons that are involved with improving processes for greater maturity. Specific demographics are not of interest, with the only criteria being the type of projects run and the industry operated in. Due to locality constraints, the population will be restricted to the
Gauteng metropolitan areas. As this is a rather large population, there is some difficulty to determining the overall sample frame (Gill et al., 2010).

The population therefore consists of the project and senior personnel in the four large banks, the big four audit houses and the majority of large ICT implementers.

However, it is often not possible or practical to study an entire population, which brings about the necessity to make general findings based on only a subset of the population; such subsets are known as samples (Goddard and Melville, 2007). The characteristics of the sample can then be extrapolated to the entire population (Babbie, 2010). The sample must be representative of the population it was drawn from and be of an appropriate size to merit inferences. Essentially, the results of the study on the sample can be used to derive conclusions that apply to the majority or the population (Gill et al., 2010).

Sampling is defined by Coldwell and Herbst as the process or technique of selecting a representative part of a population for the purpose of determining characteristics of the whole population (2004). Within here, the validity of a sample depends critically on both the population sampled and the procedures used for generating the sample (Sharp and Howard, 1996). However, due to the cost of gathering data research is sometimes pushed to use convenience samples that potentially do not meet these criteria (Sharp and Howard, 1996).

There are various procedures to sampling that can be applied (Bryman and Bell, 2007). Probability sampling can be classified as a sample that has been selected using random selection, so that each unit in the population has a known chance of being selected (i.e. the equal chance of selection); for which it is generally assumed that the outcome of such an approach is more representative of the population (Bryman and Bell, 2007). The most prominent procedure to do so is simple random sampling, which ensures this equal representation (Ary, Jacobs, Razaveih & Sorensen, 2009). Cluster sampling, which samples homogeneous subgroups equally as opposed to individual units; and systematic sampling, that randomly selects units at a predetermined interval, e.g. every 5th person, are further commonly used techniques (Ary et al., 2009).

Probability approaches remain the primary method for selecting large and representative samples in social research, but it can also be inappropriate in many other research situations (Babbie, 2010).

Non-probability sampling is a technique that does not employ a random selection method, which implies that some units in a population are more likely to be selected than others (Bryman and Bell, 2007). This type of sampling is used when probability sampling is not feasible, having the main advantages of convenience and economy (Ary et al., 2009). Examples include reliance on available subjects, judgemental, quota and snowball sampling (Babbie, 2010).

Within non probability sampling lays a subset known as purposive or judgement sampling. This is a sampling type in which units to be observed are selected on the basis of the researchers judgment about which ones will be the most useful or representative (Babbie,
Selecting a sample on this basis of knowledge of the population, its elements and the purpose of the study, is appropriate for wanting to study a small subset of a large population (Babbie, 2010). Bryman and Bell believe that this is particularly true if the subsets are easily identifiable, but the same for the overall population is nearly impossible (2007). This is of particular importance to this study as the sampling frame is not exactly determinable (Babbie, 2010).

For the objective of this study the purposive sampling technique was employed to obtain the best cases that would enable the research questions to be answered and result in the research objectives being met (Bryman and Bell, 2007).

Babbie identified research that will focus on a particular subgroup in which all sample members are similar, as homogeneous sampling, which will enable the researcher to study the group in depth (2010). It is assumed that errors in judgement in the selection will be counterbalanced by each other (Ary et al., 2009). In looking at subgroups that have similar characteristics, the consulting and finance houses, which are known to the researcher to be project intensive, were approached. This therefore consists of two of the large audit houses and two banking institutions.

It is understood that this method may lead to a biased sample that could over or under represent the population, which can impact validity (Goddard and Melville, 2007). However, the research design will have controls in place to ensure that the results are more representative of the population. It is believed that this sample will not behave differently to the population as methodologies used in maturity are fairly standardised and that the questions that will be asked can be adequately answered by the sample.

In terms of the sampling approach, as the sample frame was not readily identifiable in addition to some constraints mentioned, a sample size of 50 persons from the population was deemed appropriate for this study.

4.3 Data collection methods/Research instrument

Researchers have to measure data somehow; any device that is used for this measurement is called an instrument (Goddard and Melville, 2007). Primary data forms the core of the data to be gathered during this research to assist in clarifying the findings by means of a questionnaire (Sharp and Howard, 1996).

All secondary data was collected by means of the literature review conducted in Chapter 3.

This research will mainly be based on quantitative approaches to gather facts in addition to understanding the nuances of the problem and to understand what people think about it. It is believed that a formal survey will is suitable due to its easy use and flexibility (Coldwell and Herbst, 2004). The method of data collection or research instrument that is utilised in this study is the survey questionnaire.
4.3.1 Questionnaires

Questionnaires are a structured form of gathering data, where all respondents are asked the same questions, which ensures consistency in the answers (Hofstee, 2010). They are a method to elicit information directly from the people who are presumed to have the required information (Hofstee, 2010).

There are some disadvantages, such as the inability to interact with respondents in not being able to probe further on interesting topics that could arise (Hofstee, 2010). However, as far as ensuring confidentiality and recording data that is easier to analyse and turn into quantitative results (Coldwell and Herbst, 2004), they are highly applicable to this research.

The questionnaire was distributed both on paper and mainly electronically via a web based survey tool for ease of completion and minimising some of the traditional logistical issues with paper based questionnaires (Sharp and Howard, 1996). This electronic delivery mechanism was easy to use in terms of creating questions, provided an attractive interface, monitoring of live results and most importantly, the ability to generate Microsoft Excel data file that requires no further capturing or coding of data; providing a excellent base for analysis. Any manual entries were appended to this sheet. In both instances, the questionnaire was self administered by the respondents.

The questionnaire has several subsections to collect relevant data pertaining to the various objectives. The first part collects some basic project type and industry information, which is followed by a maturity assessment. Thereafter, questions provided current organisational circumstances pertaining organisational learning and change management. The survey is concluded in the final question by testing the importance of various factors in implementing maturity initiatives. Each section has various questions pertaining to more detailed areas per mentioned category.

A cover letter and instructions for completion were sent together with the questionnaires. These questionnaires and related information can both be reviewed in Annexure A.

4.3.2 Measurement Scales

As the analysis of responses usually requires some form of manipulation, it is vital that measures of variables are built into the questionnaire, by asking questions in an appropriate way by providing an appropriate proforma format for the responses, while bearing in mind reliability and validity (Gill et al., 2010). Babbie defines measurement scales as a type of composite measure comprised of several items that have a logical structure among them (2010: 574).

The questionnaire is structured in the form of a ranking Likert scale to collect attitude data (Bryman and Bell, 2007) and measure business phenomena (Coldwell and Herbst, 2004). Here respondents are asked how strongly they agree or disagree with a statement or series of statements. A four point scale was used throughout the questionnaire comprising of: Strongly Disagree, Disagree, Agree and Strongly Agree.
For question 7 of the questionnaire, a semantic scale was used to determine the importance of factors relating to strategy implementation to obtain their feelings toward different factors (Coldwell and Herbst, 2004).

Both of these scales were employed due to possessing a greater rigor and structure than other question formats do (Babbie, 2010).

### 4.3.3 Pilot study

Gill and his colleagues declare that it is always important to begin any fieldwork with a pilot study, which provides a trial run to test the research design with a subset of the main sample (2010). They state it is necessary to understand how respondents will interpret and react to questions. Bryman and Bell state that this may be particularly crucial in relation to self completion questionnaires, since an interviewer will not be present to clear up any confusion, reducing the possibility of an unreflective reply (2007). Corbetta goes beyond this view in contesting that they remain invaluable to provide guidance on how questions should be asked (2003).

A small group of professionals from the sample was approached to pilot this research’s questionnaire. The said value was obtained through the correction of various minor issues in interpretation, ambiguity and applicability.

### 4.4 Data Analysis

Data analysis describes the methods of handling and presenting data and outlines the statistical procedures used in this research (Ary et al., 2009). As the data collected in this study is of quantitative nature, the analysis follows suit with various statistical techniques being employed to gain insight into the data and the associated information that it contains to generate meaning (Coldwell and Herbst, 2004).

Minimal coding was needed to group the raw data into a usable format for analysis (Coldwell and Herbst, 2004). This is mainly due to the ability of the online survey tool used to generate usable, sensible and accurate data.

The statistical analysis techniques applied to extract information from the data are mainly in the field of descriptive statistics, which specify measures of tendency and variance, such as frequency, percentages, mean, mode and standard deviation (Coldwell and Herbst, 2004).

These techniques are augmented by cross tabulations to analyze data (Coldwell and Herbst, 2004). Comparisons are extensively made use of to gain understanding of the meaning of the data across various factors and to generate insights as a result of contrasting the findings uncovered by these comparisons (Babbie, 2010).

This is further supported by level of correlation analysis (Spearman Rank Correlation). This is an approach analyze relationships or associations between variables, that seek to assess the strength and direction between them (Babbie, 2010).
The level of maturity has been determined as the dependent variable and the phenomena whose variances wished to be described (Gill et al., 2010), by means of these statistics.

Findings of the analysis are graphically represented by means of a variety of charts, such as bar, column and pie charts.

### 4.5 Validity

Validity is an indication of how sound the research is, meaning that the measurements are correct, i.e. the instrument measures what it was intended to measure, and that it measured it correctly (Goddard and Melville, 2007). In essence, validity is concerned with the integrity of the conclusions generated from a specific piece of research (Bryman and Bell, 2007). More specifically, validity applies to both the design and the methods of the research. Validity in data collection determines that the findings truly represent the phenomenon being investigated. In essence, validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure (Ary et al., 2009).

It is therefore of great importance to control the possible factors that can challenge the research’s validity (Coldwell and Herbst, 2004).

The concept relates to both internal and external validity. Internal validity relates to flaws within the study itself relating to design problems or problems with the research instrument leading to data collection issues, hence the confidence that can be placed in the cause and effect relationship (Babbie, 2010); which is the notion of one thing leading to another (Ary et al., 2009; Bryman and Bell, 2007). Essentially this refers to the extent to which the findings accurately describe reality.

#### 4.5.1 Internal Validity

For the current study, internal validity holds the following aspects.

Given the more structured nature of questionnaires that will be used, the concern is there, that data might not be comparable or valid is minimised, increasing validity. Therefore the questions asked will be the same to all people in the sample. The nature of the issue and the delivery mechanism of the questionnaire minimize extraneous variables that could lead to alternative interpretations (Ary et al., 2009). However, as the instrument is self administered, such a problem could always still present itself.

The selection of subjects is a threat to internal validity due to the small relatively non randomised method used.

Validity will also be increased through convergence of collected data from questionnaires with other sources of data, such as triangulation with the literature (Coldwell and Herbst, 2004). Construct validity, which refers to validity of the ideas and concepts used in the research, will play a greater role (Ary et al., 2009).
Completeness of the responses is ensured by making all questions mandatory to answer in the web based questionnaire.

4.5.2 External Validity

External validity relates to the extent that one can generalise the findings to a larger group. i.e. to what degree would the results be true other persons (Ary et al., 2009). Should the research lack external validity, the findings cannot be applied to contexts other than the one in which the research is carried out. Typical factors affecting external validity relate to population characteristics, situational aspects, interaction of subject selection and research, data collection methodology and the effect of time (Babbie, 2010).

As the sampling model largely determines the extent of generalizability, it must be appropriate to meet this objective. In this study, purposive and to an extent convenience sampling is used, limiting the randomness and therefore representativeness. It is deemed that proximal similarity will be high due to the underlying criteria of having/wanting to conduct maturity exercises within the sample, and therefore increase generalizability to a certain extent.

Due to the monetary and financial limitation, the sample will be relatively small compared to a fully funded study, which could threaten the validity. Dropout rates will be attempted to be minimized by offering an incentive, such as providing research outputs, to ensure the sample chosen remains intact.

Further threats could relate to timing, particularly in relation as to when a company did a maturity exercise. If it was recent, possible the information could be ‘fresh’ in the minds of the interviewees. Nonetheless, due to the nature of the phenomena and issues being tested, generalizability should be appropriate as long as the subject was actually involved to the necessary extent. This can be attributed to the fact that continuous improvement is indeed continuous. Setting within the context of the research is believed not to threaten external validity as knowledge and experience is being tested, which are independent of location.

4.6 Reliability

Reliability is concerned with the actual measurements taken and the consistency thereof, i.e. if the same experiment is conducted under the same conditions, the same measurements will be obtained (Goddard and Melville, 2007). It is the extent to which an experiment or any measuring procedure yields similar results across multiple attempts. It is therefore important that the measuring procedures are of such a nature, that another researcher could apply them and obtain similar results, or grant the ability to draw satisfactory conclusions (Corbetta, 2003). In essence, it is the extent of which a measuring process/tool can produce consistent results.

Reliability may be improved by increasing sample size, but due to the limitation of time/money, the research must keep the sample size relatively small, which affect generalizability.
in this study. Although the non-probabilistic measures used which generally reduce the likelihood thereof (Ary et al., 2009), due to the standardised methodologies used in companies conducting maturity increases, it is regarded to be acceptable.

As questionnaires are known be one of the best approaches for quantity they are at the same time difficult to judge the quality of results (Coldwell and Herbst, 2004). Other challenges to reliability are overcome by posing closed ended questions, prompting a perceived similarity across the board of the sample. Certainly, responded opinion will differ, but again the closed question types will provide reliability.

To check reliability of the instruments chosen, pre-tests in the form of a pilot was conducted to ensure consistency before being applied to the sample. Minor variations were found, and adjustments were made accordingly preceding the actual implementation.

Questions that were asked are deemed to be consistent in meaning to the sample and be delivered as objectively as possible. It is understood that in business research, natural variations are bound to cause some disparities of results, but every attempt will be made to make the results as reliable as possible (Gill et al., 2010). Barring any changes in attitudes of respondents, these should increase reliability.

4.7 Limitations

Ary et al. define limitations as being any factors that may negatively impact the results of the study or the generalizability of the results (2009).

Limitations to the research at hand pertain to:

- The research was limited to 50 people across three organizations in specific departments in the Gauteng are only. This limitation is due to the fact that the sampling frame was difficult to ascertain exactly and also due to the feasibility constraints to administer a greater sample.
- The relatively small sample that was employed could undermine the representativeness of the sample towards the entire population (Corbetta, 2003).
- As only a questionnaire was used to elicit responses, any emotional or differing opinions would not have been gathered (Coldwell and Herbst, 2004).
- Gaining access to the correct individual, due to their time constraints, was challenging, causing some referrals to possibly less knowledgeable persons in the areas under analysis.
- One of the targeted organizations did not respond at all, which limited the results coming from only two industries. Having obtained responses from the missing industry would have aided in the generalisability of the results.
4.8 Ethical Considerations

Cooper and Schindler (2001) state that the goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities (Coldwell and Herbst, 2004).

Ethical standards were adhered to throughout the research process, with significant consideration given to objectivity, transparency, fairness, effect on others and confidentiality and accuracy in reporting of results (Kimmel, 2007).

Anonymity was considered as a highly important factor, whereby the respondent’s identities were protected by not gathering any personal information of any nature. A generic link to the web based survey was provided as opposed to uniquely identifiable one.

The questionnaire was reviewed by the dissertations supervisor for appropriateness. For distribution internal to the company, the head of the project management office’s permission was obtained after offering a review of the questionnaire.

Finally, all data were exclusively utilized for research purposes only (Kimmel, 2007).

4.9 Summary

Chapter 4 specified the research survey design and methodology. It explained the techniques and procedures that were employed to explore the research objectives. The chapter discussed and rationalized the research design, the data collection procedures, data analysis techniques and population and sample used in the research study.

In Chapter 5 that follows, the results of the research questionnaire were presented. Here, responses to the questions are discussed and analyzed. A discussion of the findings and overall interpretation is presented in Chapter 5.
CHAPTER 5: Results and Discussion

5.1 Introduction

As highlighted in Chapter 1 of this research report, the study set out to gain enhanced understanding of the various elements involved on an intra-organizational level to implement and improve project management processes.

In this chapter, an analysis of the data obtained from the questionnaires is conducted and presentation of the interpretation of the results collected will be given per objective. A discussion of the findings, integrated with the literature, is also provided.

For practical reference the research objectives from chapter 1 are given here again.

The research objectives are:

- To establish the current level of project management maturity in the organisations
- To ascertain the perceived core factors within an organization required to increase organisational project management maturity.
- To identify the perceived key elements required for successful implementation of an organisational project management maturity strategy.

5.2 Demographics

Categories to ascertain demographics profile include industry, project types and occupational level. Due to the nature of the research as its associated objectives, demographic data such as gender and age were deemed not to have a material effect on this research; data pertaining thereto was not gathered.

5.2.1 Response Rate

The response rate for the survey was relatively high at 68%, totalling 34 responses out of a sample of 50 persons. A 100% of the respondents fully completed the questionnaire. As the acceptability of a sample size is dependent upon the sample under investigation (Gill and Johnson, 2010), it is deemed that the 68% response rate is acceptable.
5.2.2 Industry

Figure 8: Distribution of respondents by Industry

The dominant industry of the respondents surveyed fall neatly into the professional and financial services with 68% falling into this category. The remaining 32% operate in the ICT industry. A further industry that would have been of great interest is engineering related, but due to the lack of response to the survey in that area, the study will consider only the two groups reported; due to their project intensive activities.

5.2.3 Occupational Level

Figure 9: Distribution of respondents by Occupational Level

41% of the 34 respondents are professionally qualified followed by 29% technically skilled persons. There is also a significant number of senior management at 18%, and a fair top level representation of 9%. Only 3% are at the lowest or semi skilled decision making level. This spread deemed to be of sufficient representation of the areas affected by project and process improvement activities.
5.2.4 Project Types

Figure 10: Distribution of respondents by Project Types Executed

The majority of project types being executed are ICT related at 31%, there is a near balance with a combination of related projects being executed at 37%. 17% of respondent’s project types relate to consulting related activities, with the remainder of 9% and 6% for finance and change related projects respectively. The fact that there are a high number of combined projects being executed is in line with expectations as a myriad of projects are typically being run within various industries.

Although the majority of respondents are from a business and financial services industry, it seems that the majority of projects tend towards the IT side. A possible reason for this is simply that financial services have in depth IT needs which are catered for by means of projects.
5.3 Project Management Maturity (Objective1)

The various components requested within question 4 in the questionnaire were primarily used to determine the level of project management maturity within the respondent’s organisations. The analysis and overall determination of the level of project management maturity follow below.

5.3.1 The organization’s projects may be run informally with no standard process or tracking system.

Figure 11 below illustrates the distribution to the statement above. The majority of respondents either disagree (58%) or strongly disagree (26%). This is positive towards a higher level of maturity as this question tests the permissible nature of Ad hoc processes, which are the lowest form of maturity. Therefore, the majority of the respondents are above the above the base level. Only 15% agree (Strongly agree and agree) that they have ad hoc project management practices.

Figure 11: Distribution of respondents on Ad hoc project management processes
5.3.2 The organization ensures that each project is run with its own processes and procedures to a minimum specified standard, with some consistency or co-ordination between projects

Figure 12 below indicates that 65% (comprising of strongly agree and agree) of respondents believe that their organisation has a minimum level of specified standards for project management processes. However the remaining 35% of respondents believe they do not have standards in place, pushing them towards the lower end of maturity again.

Figure 12: Distribution of respondents by initial standardisation of Project management processes

5.3.3 The organization has its own centrally controlled project processes, and individual projects can flex within these processes to suit the particular project

Figure 13: Distribution of respondents by having Managed and Measured Project management processes
The majority of respondents, comprising a total of 77% (Agree and Strongly agree) believe that their organisation has centrally controlled project management processes. This illustrates that processes are maturing well with organisation wide centralised management and processes. None of the respondents strongly disagreed, with 24% disagreeing showing a lack of centrally controlled processes.

5.3.4 The organization obtains and retains specific measurements on its project management performance and run a quality management organization to better predict future performance

Figure 14: Distribution of respondents by Organisationally Integrated and Controlled project management processes

The figure above shows that the majority of respondents agree that performance is measured and used for inputs into quality processes of their projects, placing them in higher levels of maturity. However a combined total of 30% still disagree that these processes are being followed and therefore lag in maturity on this level.
5.3.5 The organization runs continuous process improvement with proactive problem and technology management for projects in order to improve its ability to depict performance over time and optimize processes

Figure 15: Distribution of respondents by Optimised and Continuously improved project management processes

A relatively larger component of the respondents (35%) disagreed and strongly disagreed that their organisation practices continuous improvement in their project management processes. This shows that they have not reached the highest level of maturity, but by no means are on the lowest. With only 9% strongly agreeing, emphasizes that this level is difficult to attain. 56% or approximately 20 respondents state that they are proactive with this regard and constantly attempt to optimise processes over the long term.

5.3.6 Projects teams are assembled from across functional areas

Figure 16: Distribution of respondents using cross functional project teams
With 26% of respondents strongly agreeing and 50% agreeing that project teams are assembled by drawing upon cross functional resources and only 24% disagreeing show that this basic practice is widely held throughout and is indicative of maturing organisations.

5.3.7 Formal project management training for the team is conducted

Figure 17: Distribution of respondents where project management is conducted for the entire team

<table>
<thead>
<tr>
<th>Formal project management training for the team is conducted</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>12%</td>
</tr>
<tr>
<td>Agree</td>
<td>41%</td>
</tr>
<tr>
<td>Disagree</td>
<td>38%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>9%</td>
</tr>
</tbody>
</table>

Reponses shown in figure 17, indicate that there is a near equal distribution towards the fact that all team members receive project management training, with 53% agreeing (combined strongly agree and agree) and 47% stating the opposite (combined disagree and strongly disagree).

5.3.8 High level of senior management support for project management throughout the organization

Figure 18: Distribution of respondents by Senior management support for project management

<table>
<thead>
<tr>
<th>High level of senior management support for project management throughout the organization</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>18%</td>
</tr>
<tr>
<td>Agree</td>
<td>53%</td>
</tr>
<tr>
<td>Disagree</td>
<td>26%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>3%</td>
</tr>
</tbody>
</table>

Figure 18 illustrates that in terms of senior management support for project management, responses indicate that the preponderance lies towards agreement with a combined 71%,
with 26% disagreeing and only 3% strongly disagreeing. This shows that support is indeed there.

### 5.3.9 Summary view and trend of factors of maturity

Figure 19: Summary distribution of factors contributing to level of maturity

The combined view of all the factors above, augmented by linear trend lines, illustrate that there is a general increase in agreement across the levels of maturity for the sample; and decrease in disagreements of appropriate processes being in place.

### 5.3.10 Overall Determination of Maturity Levels

In having looked at the individual components, an understanding of each within the entire sample is obtained, with a general upward linear trend in maturity practices. However as various components can be present within each level of maturity it is required to consolidate the different components to achieve a concrete view of the level of project management maturity. To achieve this, weightings have to be added to each answer per level to obtain a summary level through computing a weighted average and categorising it into a bucketed level of maturity. For example, disagreeing in the extent of ad hoc processes, has a larger weight to the maturity score than agreeing, similarly agreeing to constant improvement weighs more than disagreeing. Based on this principle the results show the following for the perceived levels of project management maturity.

The amalgamation of these results to form a common category to associated levels of maturity, reveal the following overall distribution (illustrated in the following figure 20) of project management maturity of the surveyed organisations.
Figure 20: Resultant distribution of Project Management Maturity Level

Figure 20 illustrates that in applying appropriate weights and computing the weighted averages of the individual component scores; and categorising the responses into buckets, 56% of the respondents perceive the maturity of their organisation as high, 35% as medium and 9% as low. These levels of maturity will be used as the dependant variable for most of the remainder of the analysis.

5.3.11 Characteristics per Maturity Level

In having established the overall maturity of the respondents, some demographic characteristics are now viewed by this new categorisation for completeness, illustrating the following.

Figure 21: Industry distribution by Maturity Level

By viewing industry type by maturity level in figure 21 above, the majority of high and medium maturity organisations operate in the professional services industry, with the commonality of almost 70% of low maturity companies in the ICT industry.
Looking at project types being executed per levels of maturity, it can be seen that the companies with the highest maturity execute almost equal amounts of the project types, with the majority lying towards the ICT sphere. An interesting observation is that both medium and low level companies execute a majority of combination projects. This could be indicative of the fact that companies specialising in certain types of projects have better maturity as opposed to the generalist types who execute a variety of projects. Figure 22 below illustrates this statistic.

Figure 22: Maturity level by project type
5.4 Perceived core factors within an organization required to increase organisational project management maturity (Objective2)

In having obtained the overall levels of project management maturity prevalent in the surveyed sample the perceived core factors can be analysed on the basis of their contribution to maturity levels.

This section of the analysis of organisational practices is conducted with special reference being made to the following components:

- Activities and Systems
- Climate for organisational Learning
- Learning Styles
- Organisation Learning process
- Continuous Learning
- Structure
- Implementation
- General Change Management Practices
- Specific Change Management Processes

5.4.1 Activities and Systems

5.4.1.1 Projects are reviewed and lessons Documented

Figure 23: Distribution of respondents of Projects and Lessons learnt being documented by Maturity
The figure above illustrates that there is quite a spread in terms of using formal reviews and documenting lessons learnt from projects. The only class to strongly agree are the high maturity respondents at 21%. Both the high and medium maturity levels have the bulk of their responses in the agree level with 47% and 67% respectively. For responses of a perceived low maturity, the minority agree at 33% with the combined 67% falling into the disagreement categories. A slight anomaly is that both the high and medium classes show that there are minority cases at 26% and 33% showing that they also do not review and document lessons learnt from projects.

5.4.1.2 Formal knowledge management systems are utilised that contain information that can be regularly used

Figure 24: Distribution of respondents utilising formal knowledge management systems by Maturity

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>15.79%</td>
<td>52.63%</td>
<td>31.68%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Medium</td>
<td>8.33%</td>
<td>58.33%</td>
<td>25.00%</td>
<td>8.33%</td>
</tr>
<tr>
<td>LOW</td>
<td>0.00%</td>
<td>33.33%</td>
<td>66.67%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

A formal knowledge management system or portal are utilized that contains information that can regularly be used by Maturity Level

The majority of high and medium respondents show that there is prevalent use of knowledge management systems in their organisation at 68% and 66% respectively (combined agree and disagree).

A rather large portion of the high level company however also disagree with making use of such systems at 32%, with a smaller number of medium companies (25%) falling in this category.

Low maturity responses make up the bulk of disagreeing at 67% and also show an 8% vote for strongly disagreeing with the use of knowledge managements systems. None of the perceived higher responses strongly disagree. 33% of low maturity organisations do however agree to using a knowledge management system.
5.4.2 Climate for organisational learning

**Figure 25: Climate for Organisational Learning**

In ascertaining the levels of an overall climate of organisational learning in the respondent’s organisations, figure 25 illustrates the mean scores relating to what is deemed to be in place, superimposed with the standard deviation to show the extent of different opinions.

The strongest opinions of all respondents indicate agreement that the organisation supports continuous learning (5.6), open communication (5.4) and encouragement to take risks (5.5).

The standard deviation across all the answers is in general quite low, showing that opinions between the levels of maturity do not significantly differ. It is only slightly skewed in running near to a 0.7 deviation for low maturity companies disagreeing that there is a climate of respect and trust (5.3). Similarity perceived low maturity companies also rate lowest having a culture of continuous improvement (5.9).

The correlation matrix below shows a positive correlation between the high and medium maturity organisations at an index of 0.75, showing that they have responded in an equal manner to the same questions. At a low index of 0.3, there is only little correlation between the ways high and low respondents answered, illustrating the difference are significant between them. Table 4 illustrates this by way of a Spearman Correlation.
Table 4: Spearman Correlation for Maturity levels within organisational learning climates

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>0.757071922</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.301170247</td>
<td>0.720023803</td>
<td>1</td>
</tr>
</tbody>
</table>

To further understand the prevalence of these factors determining a climate for organisational learning, the responses are converted to a nominal scale (Agree and Disagree), there seems to be little distinction between high and low level organisations. Leading one to think that a climate of learning is not alone a determinate of maturity.

Figure 26: Modes of Learning Climate by Maturity
5.4.3 Learning Styles

Learning styles refer to measuring organisational learning in terms of Agarys and Shons model for single, double and triple loop learning.

5.4.3.1 Problems that are encountered, are typically solved quickly by seeing what is causing the problem and changing the cause to rectify the issue.

In answering the statement above, the perceived extent of single loop learning was elicited from the respondents and shown by level of project management maturity.

Figure 27: Distribution of perceived Single Loop Learning by Maturity

From figure 27, the following can be seen. 21% and 31% of High maturity organisations strongly agree and agree with practicing single loop learning.

Low maturity responses indicate a combined 100% disagreement to single loop learning.
5.4.3.2 Staff are encouraged to challenge existing standards, rules and policies that are in place for the potential to improve standards

In answering the statement above, the perceived extent of double loop learning was elicited from the respondents and shown by level of project management maturity.

Figure 28: Distribution of perceived Double Loop Learning by Maturity

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>10.53%</td>
<td>47.37%</td>
<td>42.11%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Medium</td>
<td>25.00%</td>
<td>58.33%</td>
<td>16.67%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Low</td>
<td>0.00%</td>
<td>66.67%</td>
<td>0.00%</td>
<td>33.33%</td>
</tr>
</tbody>
</table>

High maturity responses agree to a combined 50%, with medium levels agreeing up to 83% respectively. Medium maturity organisations show the lowest level of disagreement at just over 16%. Curiously, the highest disagreement comes from the perceived high maturity companies at 42%. This reveals that the highest levels of maturity have the lowest extent of double loop learning. Medium maturity responses show the highest agreement with the lowest disagreement of all classes.

66% of Low maturity organisations agree that they are encouraged to challenge the existing norms and thereby inferred to practice double loop learning. However, they are also the only class that strongly disagrees by 33%.
5.4.3.3 Lessons learnt in one area, are often applied solve a problem in a different area.

In answering the statement above, the perceived extent of triple loop learning was elicited from the respondents and shown by level of project management maturity.

![Figure 29: Distribution of perceived Triple Loop Learning by Maturity](image)

A full complement of 100% of low maturity responses show that they do not employ lessons from one area to solving problems in another, illustrating that triple loop learning is perceived to be nonexistent.

Both high and medium maturity organisations agree by over 60% of responses indicating that the majority of those do indeed show items indicating the presence of triple loop learning.

These results also strongly correlate to the responses under the implementation section for question 5.27 stating that high and medium mature companies are busy with implementing more improvement initiatives simultaneously as opposed to those of perceived low maturity organisations.
### 5.4.4 Continuous Learning

Figure 30: Continuous Learning Components by Maturity Level

Figure 30 above illustrates the distribution of the responses per maturity level of the perceived factors of continuous learning within the organisations. There is relatively strong agreement towards all the indicated factors impacting this category across the different levels of maturity, showing that continuous learning is rife across the sample. The only notable difference is that the extent of agreement versus disagreement with low level companies is that the ratio is slightly lower at 2:1 compared to the 3:1 of medium and high maturity companies.

A further distinguishing result is that there is 100% agreement of two of the three factors from the view point of lower level maturity responses.

To further illustrate the relationship that exist, the correlation matrix in table 5 below shows that there is a strong positive correlation between high and low maturity responses, indicating that these practices are prevalent, regardless of maturity level.

**Table 5: Spearman Correlation for Continuous learning by Maturity**

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Medium</th>
<th>LOW</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.81705717</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW</td>
<td>0.960768923</td>
<td>-0.944911183</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>0.57655666</td>
<td>-3.1085E-15</td>
<td>0.327326835</td>
<td>1</td>
</tr>
</tbody>
</table>
5.4.5 Learning Structure

Figure 31: Cross Functional Cooperation by Maturity Level

Figure 32 reveals that there is a relative consensus across the levels of maturity that cross functional cooperation exists within the organisations, with a 70% average across the board. Only low maturity level responses strongly disagree to an extent at 33%, with no high level showing strong disagreement, with 16% moderately disagreeing.

Figure 32: Effective Cross functional knowledge sharing by Maturity Level

However, in contrast to cross functional cooperation, cross functional knowledge sharing shows overall elevated ranks of disagreement athwart the levels of maturity, as indicated in figure 33 above. Detail does reveal that in spite of this trend only high and medium mature organisations show overall agreement at 36% and 50% respectively. A combined 100% of low maturity responses show disagreement.
5.4.6 Implementation Components

Figure 33: Distribution of responses by implementation components

From the overall distribution of responses to the perceived extent of various implementation components being prevalent, as illustrated in figure 34, the following can be determined.

62% of respondents agree that they have a flat structure, with a near 50% split between using a functional approach to implementing projects. For the remaining factors there seems to be a trend that the higher the levels of agreement, the higher the levels of disagreement, showing a sharp contrast between the implementation components that are in place. The exception to this is however the high level of agreement towards the extent that various improvement activities happen at the same time with a combined 62% of respondents agreeing as opposed to 38% in disagreement.
In examining the implementation components by levels of maturity, it is revealed that high maturity organisations

There is an indication that high maturity organisation disagree in having a flat organisational structure, with the highest agreement in this categories being shown by those of medium maturity.

Both high and medium levels of maturity are nearly in equal agreement that matrix structures are used as opposed to functional structures in project execution, with a similar trend in significance of time spent on planning (5.26) and overall pervasiveness of simultaneous improvement activities happening(5.27).

Interestingly, low maturity responses indicate that the majority use a functional structure as opposed to a matrix structure when executing projects.

The Spearman correlation shown in table 6 below shows a clear negative correlation between factors considered important by high and low maturity levels of maturity. This indicates that low maturity organisations behave almost in an opposite manner as their more mature counterparts in terms of implementation components.

Table 6: Spearman rank correlation for Implementation components

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Medium</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>0.341369163</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LOW</td>
<td>-0.81537068</td>
<td>-0.12064517</td>
<td>1</td>
</tr>
</tbody>
</table>
5.4.7 General Change Management Practices

Due to the relatively even split or frequencies across the agree and disagree categories, it was deemed sensible to combine them the four scale ordinal rating into a combined nominal scale consisting of ‘Agree’ and ‘Disagree’.

In examining the above distribution, it can be seen that the majority of respondents agree that most practice general change management procedures. It holds promise that the highest level of agreement at 88% shows that there is an open debate about aspects relating to change for process improvement (6.2). This is closely followed by the generally accepted approach to change (6.1) at 76% agreement, supported by a positive outcome of most change activities (6.9) at 74%. However, the majority at 62% disagree that performance management systems are changed (6.4) to incentivise changes. An interesting high point of disagreement with 76% is that the newly created processes are not always followed (6.5).

An area of concern is that there is a near even distribution when looking at participation during planning and implementing changes (6.8), at 59% agreeing and 41 disagreeing. This correlates precisely to the split agreement regarding being informed about the reasons for changes (6.6) which holds the same distribution.
From the figure above, it can be seen that highly mature companies agree that they practice 83% of the general change management procedures, followed closely by 75% for medium mature organisations. It can also be deducted that companies of low perceived maturity only practice 42% of general procedures.
5.4.8 Change Management Process

The frequency distribution above, based on the entire samples show differing views of the levels of change management processes being practiced within their organisations. Overall, most agree to the items as opposed to disagreeing, with the majority stating that change is implemented by a group as opposed to an individual at 74%. Further factors that feature prominently is strong agreement (68%) to adjusting any systems and structures that could inhibit changes and a strong vision being communicated by leadership for the change (65%). There also seems to be agreement at 62% on creating a burning platform and driving change with a sense of urgency. On the lower end of the scale, there is a near balance between rewarding people involved with a 50% split, followed by overall presentation of success and celebrating quick wins.
Figure 38: Distribution of Respondents by Change Management Process and Maturity Level

Figure 39 above, looks in more detail by segregating information from figure 38 by levels of maturity. This reveals that the high and medium maturity companies agree by a significant percentage to more of the processes being in place as opposed to low maturity responses disagree to a maximum of 100% on items such as establishing a sense of urgency and rewarding people for their efforts in the change implementation. Components were there is relative consensus remain in agreement that adjustments are made to systems and structures that inhibit change. The higher echelons of maturity also show agreement on change being led by a group of people as opposed to an individual at lower maturity.

There are however disparities between medium and high level companies with medium levels showing much higher agreement to driving change with a sense of urgency at 83% as opposed to 58%. Highly mature companies agree by more than 20% to medium, and 50% to low that a strong vision is created by leadership and communicated thoroughly. Highly mature companies also agree strongly to celebrating quick wins at 74%, surprisingly they give a low rating to rewarding the people involved with the quick wins (47%). This disparity is reflected by the low correlation figures the in the Spearman correlation below in table 7.

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Medium</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.20089486</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LOW</td>
<td>0.473513724</td>
<td>0.471404521</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7: Correlation between change management process and level of maturity
As can be seen from the chart above, both high and medium maturity companies apply approximately 90% of change management process practices, as opposed to only about 25% in low maturity organisations. A Cochran’s Q test revealed that there are no significant differences between the responses. This implies that companies with higher levels of maturity have stronger change management processes, and therefore it can be deemed that such is important to successfully implement a project management maturity strategy.
5.5 Strategy Implementation (Objective 3)

5.5.1 Perceived importance of factors influencing successful strategy implementation in project management maturity

Listed below are the mean scores of the perceived importance of factors influencing the successful strategy implementation for project management maturity.

Table 8: Mean scores of the perceived importance of factors influencing successful strategy implementation

<table>
<thead>
<tr>
<th>Factor</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.9 Clarify in an early stage the ownership, decision making roles and powers in the process improvement</td>
<td>3.84</td>
<td>3.67</td>
<td>3.33</td>
<td>3.74</td>
</tr>
<tr>
<td>7.1 Commitment/Buy in of senior management</td>
<td>3.63</td>
<td>3.67</td>
<td>3.67</td>
<td>3.65</td>
</tr>
<tr>
<td>7.8 Engage, communicate and explain the changes involved with all stakeholders</td>
<td>3.53</td>
<td>3.67</td>
<td>3.67</td>
<td>3.59</td>
</tr>
<tr>
<td>7.6 Create an open/strong communication and collaboration culture (boundaryless organisation)</td>
<td>3.63</td>
<td>3.50</td>
<td>3.33</td>
<td>3.56</td>
</tr>
<tr>
<td>7.16 Culture of high performance</td>
<td>3.68</td>
<td>3.50</td>
<td>3.00</td>
<td>3.56</td>
</tr>
<tr>
<td>7.2 Early involvement of people being affected by the changes</td>
<td>3.68</td>
<td>3.08</td>
<td>4.00</td>
<td>3.50</td>
</tr>
<tr>
<td>7.11 Appropriate project staffing</td>
<td>3.79</td>
<td>3.25</td>
<td>2.67</td>
<td>3.50</td>
</tr>
<tr>
<td>7.12 Empowering people to act on the vision defined</td>
<td>3.53</td>
<td>3.33</td>
<td>3.00</td>
<td>3.41</td>
</tr>
<tr>
<td>7.10 Establish a shared and motivating vision</td>
<td>3.42</td>
<td>3.33</td>
<td>3.33</td>
<td>3.38</td>
</tr>
<tr>
<td>7.4 Commitment/Buy in of middle management</td>
<td>3.16</td>
<td>3.42</td>
<td>3.67</td>
<td>3.29</td>
</tr>
<tr>
<td>7.5 Appropriate training and coaching for people involved</td>
<td>3.32</td>
<td>3.33</td>
<td>3.00</td>
<td>3.29</td>
</tr>
<tr>
<td>7.3 Align and mobilise leaders</td>
<td>3.26</td>
<td>3.42</td>
<td>2.67</td>
<td>3.26</td>
</tr>
<tr>
<td>7.7 Realisation and celebration of Short Term Wins</td>
<td>3.21</td>
<td>3.17</td>
<td>2.00</td>
<td>3.09</td>
</tr>
<tr>
<td>7.14 Change of reward systems to support change initiative</td>
<td>2.89</td>
<td>3.17</td>
<td>3.67</td>
<td>3.06</td>
</tr>
<tr>
<td>7.15 Process improvements conducted by cross functional teams</td>
<td>3.05</td>
<td>3.25</td>
<td>2.33</td>
<td>3.06</td>
</tr>
<tr>
<td>7.13 Establishing a sense of urgency/burning platform</td>
<td>3.05</td>
<td>3.08</td>
<td>2.33</td>
<td>3.00</td>
</tr>
</tbody>
</table>

The scale used in question 7 was 1=Not important, 2= Less important, 3= Important, 4=Most important. The overall mean scores for most items was higher than equal or greater than 3, illustrating that all factors are perceived to be relevant and important to successfully implementing a strategy of project management maturity.

The overall rating of importance of the factors is illustrated in the Figure 41 on the following page.
From the table above it can be clearly seen that the top five factors are perceived to be:

- 7.9 Clarify in an early stage the ownership, decision making roles and powers in the process improvement
- 7.1 Commitment/Buy in of senior management
- 7.8 Engage, communicate and explain the changes involved with all stakeholders
- 7.6 Create an open/strong communication and collaboration culture (boundaryless organisation)
- 7.16 Culture of high performance

As the dependant variable is the current level of maturity, the following figure 42 illustrates the comparative rankings of factors of importance for strategy implementation by maturity level to display the different perceptions thereof.
From the mean scores above categorised by maturity and ranked in order, differences in perceptions of the importance of the factors becomes evident.

For low maturity, the range of means places various factors as less important to highly important, with a much greater dispersion.

Medium and high levels of maturity show a much closer spread to the overall mean, showing that more factors are important and nearing very important.

The order of perceived importance varies moderately from medium and high maturity, and the greatest dissimilarity lies between low and high maturity levels. The Spearman’s rank correlation in table 9 below shows this relationship in more detail.
Table 9: Correlation between mean scores of perceived factors of importance in strategy implementation and level of maturity

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>0.51423</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.315163</td>
<td>0.374871</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>0.927515</td>
<td>0.745926</td>
<td>0.556435</td>
<td>1</td>
</tr>
</tbody>
</table>

The Spearman’s rank correlations are also not highly significant between the cases, indicating that the order of the different factors was perceived differently within each level of maturity. There was a moderate correlation between High and Medium levels of maturity on the factors considered to important for successful implementation. The low correlation between low, medium and high levels of maturity show that there is a clear difference in importance of the various factors.

5.5.2 Occupational level

In attempting to determine the extent of agreement on the various factors, the standard deviations of the various occupational levels by the perceived factors of importance for strategy implementation are examined. This reveals that there are very few similar views on the factors with top management actually contrasting the most with the highest deviations. Figure 43 illustrates these inconsistencies. There are also no notable changes when viewing the same data by maturity level.
5.6 Discussion of Results

The majority of respondents are from the professional services industry, with the remainder in the ICT sphere.

The analysis revealed that there are varying perceptions of maturity per organisation, with some showing characteristics of both high and medium levels, and in exceptions, similarly for low. However, in applying a weighted average process, a more concrete answer was obtained, showing the splits per responses into different categories of maturity, revealing the majority to be of high maturity, middle ground medium mature and minority being low. The application of maturity frameworks showed that the levels of maturity are in line with the processes based within these frameworks. Mature companies seem to focus mostly on specific projects, where as lower levels have mainly combination projects being executed.
Results found are above the norm in comparison to survey conducted by PM Research solutions (2009) with the majority of the companies being of low maturity.

Furthermore, findings align to the actuality that in immature organisations, processes are generally improvised by project managers and executives during the course of the project, being reactionary on solving immediate crises. In contrast, as per typical maturity models, the more mature organisations indeed seem to possess the ability to manage projects and associated process that are accurately communicated and continuously improved (Paulk et al., 1993). It seems feasible that the progression toward full organizational maturity involves attention to all elements of managing projects beyond the technical content (Rad and Levin, 2006).

In light of the analysis conducted, it was realised that Kwakk and Ibbs stated that organisations can actually choose to stay at a certain level of maturity (2002), as this component was not tested, potential validity issues could arise in having eliminated choice. This does however still give an accurate view of current maturity.

Nonetheless, as improvement models are based on process institutionalisation with numerous process areas having to be implemented and improved, these are these are central to advancement (Carnegie Mellon, 2010), findings show this to be accurate, in addition to establishing a link to strong change management that will be discussed later in this section. This sentiment is reinforced by Pennypacker and Grant, in stating that maturity models add considerable value to contemporary organisations and define a structured route to improvement (2003).

In having determined the levels of maturity across the responses, the foundations for determining the perceived core factors internally to the organisation (objective2) were established.

The actual current levels of maturity were attempted to be explained by the prevalence or lack of certain intra-organisational factors, ranging from the extent of organisational learning to change management in terms of implementing maturity exercises and process improvement.

Activities and systems seem to play a large role in maturity, with basic concepts such as documenting lessons learnt and utilising knowledge management systems, falling primarily into the domains of the medium and high level organisations. These are basic components that should be in place, with 66% of low maturity companies not documenting lessons learnt from projects nor using a knowledge management system. It could be assumed, that by not generating documentation, there is no perceived need for a system to store it. As these are known to support organisational learning and promote continuous improvement (Keane, et al., 2007), the responses show support for this, in being pervasive in more mature organisations.

This is also indicative of a flaw in the overall exchange of information in low maturity organisations, which is potentially caused by the failure of leaders in not propagating
principles that improve the flow of information (Tapp, et al. 2008) and the importance thereof (Raps, 2005).

One of the most noteworthy findings of the survey, in determining the perceived underlying factors to require improving project management maturity, is the implication that a climate for organisational learning has very little effect on the level of maturity, with nearly all respondents stating that the climate is relatively good in all instances. As there is research abound evangelising the fundamental importance of organisational learning in both project management maturity and continuous improvement (McAdam and McIntyre, 1997; Rad and Levin, 2006; Bushe, 2009; Kock and McQueen, 1998; Carnegie Mellon, 2010; Tapp, et al., 2008; Argyris and Schon, 1978; Keane, Barbare & Munive-Hernandez, 2007, Wong, et al., 2009), a clear discrepancy has arisen in light of the findings. Taking this literature into account, the expectation is that the more prevalent a culture for organisational learning is, the higher the propensity for achieving maturity.

Pitagorsky states that not learning will lead to dysfunctional behaviour continuing to cause project and performance failures (2011). However, findings seem to show that even learning cannot remedy all performance aspects. It can therefore only be assumed, that in the context of this research, a climate for organisational learning simply does not have a major impact on maturity, or that there are misconceptions about the topic, which make generalisibility in this specific aspect questionable, warranting further research into these factors.

Alternatively, Jen-Shou and Chin-Yi views on real world constraints are surfacing, in stating that most improvement activities have their limits to growth even though factors of learning are present (2005). Possibly De Gues’ opinions on the speed of learning comes into play (1988), with high maturity organization’s simply being able to learn faster than their counterparts, albeit the climates being nearly almost equivalent.

Furthermore, since there is near even distribution within the responses across the subcomponents, it could be considered that the material differences between high and low maturity relate only to a few specific factors where opinions in nominal form, did indeed differ with clear disagreement towards low maturity, such as a climate of respect, openness and trust; a culture of continuous improvement in the entire organisation and a shared vision to capitalise on opportunities. This also reaffirms the importance of an overall culture that is conducive to performance improvement (Louw and Venter, 2006). Although Pern, Roderick and Mulrooney believe that all measured components must be present for a climate of learning to exists (Tarrini, 2004), it can be postulated that those lacking above in low maturity organisations, could hold the most negative weighting for maturity improvement.

Highly mature organisations practice single, double and triple loop learning, whereas lower levels have only disagreement towards triple loop learning, but relatively high agreement towards double loop learning, implying that the contexts in which problems are found are changed to enable improvement. The majority of medium and high maturity organisations
agree to practice single loop learning. Low maturity responses indicate a combined 100% disagreement to single loop learning.

Results indicate the most widely held beliefs of double loop learning lies with medium maturity organisations at a combined 83% followed by low maturity organisations at 66% and the balance belonging to high maturity. Jen-Shou and Chin-Yi state that single-loop learning improves quality progressively, while double-loop learning composes large magnitude improvement (2005). Therefore, looking at the results one could assume that higher maturity implies higher levels of double loop learning. However, as findings reveal the opposite, it seems that they are more in line with views of Wong and his colleagues in stating that an organisation’s improvement activities are mainly derived from single loop learning, particularly in projectised environment (2009), for which high maturity responses scored well.

Similarly, it could be assumed that low maturity organisation would possibly score low in double loop learning, but the contrary has been revealed. It is proposed that this can be explained by the results achieved for triple-loop learning, with only high and medium organisations showing an elevated association. Here, Wong et al., state that triple loop learning essentially serves as a platform to facilitate the achievement of single and double loop learning (2009), reinforcing single loop learning as an appropriate approach in process improvement. Albeit, it can still be argued that in most other aspects of business, the opposite seems to be true (Argyris and Schon, 1978).

Considering that triple loop learning is said to be the highest form of learning for continuous improvement (Argyris and Schon, 1978), in which lessons in one area are applied to solving problems in another (Tapp, et al., 2008). The results align with maturity frameworks processes at higher levels (Paulk et al., 1993). The outcomes of this could further lead the findings in the different sections which show that only high and medium maturity organisations, which have triple loop learning, undertake many simultaneous improvement efforts, seemingly leveraging off of this capability.

Continuous learning in terms of overall encouragement and a business’ views on continuous learning of staff is small extent more prevalent in the higher order maturity companies as opposed to lower levels. It is therefore believed that these are necessary components to improving maturity but not critical, which does clash somewhat with Tarrini’s views (2004).

Components of learning structures show that low maturity organisations disagree most strongly with having cross functional cooperation being in place, and to a moderate level effective knowledge sharing across departments is prevalent with high maturity organisations, with no such practices taking place in low levels. This strongly correlates to the lack of knowledge management systems for sharing information in low maturity organisations. The results draw a strong parallel to the work of Kock and McQueen, who are on the opinion that a largest barrier to open communication and the flow of information is departmentalisation (1998); and previous successes of cross functional approaches (Yoshin and Egawa, 2006). This finding also has ties to the verity that people must work together to
learn and create knowledge, which in turn leads to a positive change in patterns of interaction (Bushe, 2009).

As creating a boundaryless organisation was found to be rated as highly important in the strategic implementation part of the survey, reinforces the vital importance of open communications as fundamental factor to highly mature companies, tying into literature accordingly as postulated amongst scholars such as Coon and Wolf (2005) and Raps (2005).

From an implementation perspective for conducting improvement initiatives in the project management ambit, it emerged that the height of the hierarchy has a small impact on maturity levels, but more so an appropriate organisational structure that moves away from the traditional functional structure to a more matrix orientated form. This reemphasizes the importance found in high and medium maturity responses of cross functional collaboration by Lorange (1998) and Tarrini (2004). Results from more mature organisations also link to PwC’s worldwide research findings stating that the most effective structure was a projectised or strong matrix structure, with a traditional functional structure being weakest (Nieto-Rodriguez and Evrard, 2004).

By means of this, high level maturity seems to be associated to a variety of improvement activities taking place simultaneously, which links to the findings of a predominant culture of continuous improvement established, to be one of the few a distinguishing factors, of organisational learning climates with highly mature organisations; that support successful implementation of process maturity (Paulk et al., 1993).

A lack of time spent planning with low level companies indicates that a different approach for maturity could be required. This association is further demonstrated by the strong negative correlation between responses from high and low maturity point out that there is a clear difference in approaches followed; leading to the assumption that implementation methods from mature organisations are more applicable than those of the lower equivalent.

General change management practices and specific management processes have a heavy impact on the levels of maturity across the organisation. In having converted the responses to a nominal scale that analysis revealed the presence of a clear trend that companies of higher maturity practice both a higher level of general change management practices and particularly much higher levels of a formal change management processes.

In analysing practices that are in general considered fundamental to creating and fostering flexible environment that is responsive to change, from both externally and in this case specifically from an internal perspective, results show that high an medium maturity organisations maintain 83% and 75% respectively. Low maturity responses only conduct 42% of the practices.

Although responses indicated that there is open debate within all levels maturity, only the medium and high states show such communications happening in other change related aspects, with lower level’s interaction and general communications coming in below
standard. This is in line with literature in reinforcing the importance of communication (Coon and Wolf, 2005; Raps, 2005).

Particularly, the majority of low maturity responses indicated that very low instances of involvement during the planning and implementation of changes. This is in concordance with Lines’ views in studies on a participative approach to change which found that success is more easily attainable by doing so (2004). Hence, it is deemed that this is further core factor in implementing changes relating to project management maturity. However, as other methods to overcome resistance could be applied such as negotiation or coercion (Kotter and Schlesinger, 2008), but as these were not specifically measured and hence cannot be compared, indicate a limitation in measurement of this aspect.

In testing general change management practices, one item that was disagreed to by all levels of maturity, was the fact that newly created policies and procedures are not always followed (75% disagreement). In line with Paulk et al., this is a typical form of resistance that can be found in implementing project management maturity, which is prevalent even though the processes have been clearly defined, with associated policies and guidelines (1993). This result could indicate that that this simply is an irrelevant factor in maturity, or by seeking a possible association, could be indicative of a component of higher organisational learning; where individuals are encouraged to challenge policies to find means of improvement (Tapp, Edwards, Braspanning, Eriksson, Kuch, & Elwyn, 2008).

Findings therefore show that general change related communication is deficient within low maturity firms compared the more maturity counterparts, with the similar being true for levels involvement.

The fact that low level entities revealed that most changes that happen within the organisation, relating to project process improvements do not have a positive effect, as opposed to the higher stratum of maturity (74% agreement), can be considered as a fundamental contributing factor that is indicative of the overall lack of change management and the importance thereof for higher maturity.

With particular reference to Kotter’s 8 Step Model for change being use to measure specific change processes (Kotter and Schlesinger, 2008), showed that both high and medium maturity companies apply a significant 90% of change management process steps, as opposed to only about 25% in low maturity organisations.

From a perspective of how change management relates to the implementation or improvement of project management maturity, Nieto-Rodriguez and Evrard’s world wide analysis publicized that there is a clear link between change management and the best performing organisations, stating that an indisputable correlation between project performance, maturity level and change management exist (2004). This substantiates the results of this survey, which are precisely in line with their findings.

In relation to this, popular theory would suggest that in the absence of such planned change management, maturity or project processes improvement could succumb to high levels of
resistance (Agócs, 1997), and further typical barriers of change (Ann, Godek & Gilley, 2009). It can be argued that this is the case of why low maturity organisations find themselves at that level with only a 25% usage factor.

Although formal change management is challenged by Graetz and Smith (2010), results in this study appear to indicate that in practice, specifically in relation to changing processes to achieve higher levels of project management maturity, it is not only indeed feasible, but gives insights into action steps, perceived core factors and the relevant application in the change process (Stragalas, 2010) and is a base for successful implementation. This seems to be principally relevant considering perceived inconsequentiality of effect of organisational learning found above.

A linkage has been discovered that ties these finding into having a strong to the high performance culture of high levels organisations discovered in the strategy analysis in the final objective below, for which Kotter reemphasizes that change is only sustainable when new behaviours become part of the organization’s culture or part of its members’ basic values, beliefs, or ways of thinking (Erwin, 2009).

Therefore, based on the results and the literature it can be strongly implied that there is a direct relationship between the change management and maturity, with its subcomponents being imperative to large scale project process improvement.

Significant disparities were found between the different maturity levels when examining strategy implementation for successful implementation a project management maturity exercise. Opinions differed vastly between the higher and lower levels. In assuming that the medium and higher maturity organisations practice more appropriate strategy implementation in regards, the identified items can be deemed as more important than the distribution of lower responses.

The views that current problems with process improvement initiatives is a lack of an effective strategy to successfully implement those standards or models for maturity (Hardgrave and Armstrong 2005; Brietzke and Rabelo 2006; Abrahamsson and Livari 2002; Babar and Niazi 2008), are supported by the vastly differing responses across the levels of maturity.

Therefore, working on the premise that mature companies are the most astute, or rather having the best recipe of factors for implementation of project management maturity initiatives or project process improvements. There is also agreement amongst the higher levels of maturity that more implementation factors are important as opposed to few by the low maturity organisations. Based on this assumption the key factors identified to be clarifying in an early stage the ownership, decision making roles and powers in the process improvement; having the right people in terms of appropriate project staffing; supported by an overall culture of high and a focus on strong communication and collaboration. Factors such as changing the reward system to support behavior were found to be least important together with a sense of urgency for the change. This could be explained by the fact that if
the culture is appropriate, there is intrinsic motivation to succeed in implementing these types of strategies.

Research has shown that fundamentals of good execution start with clarifying decision rights and making sure that information flows where it needs to go (Neilson, et al., 2008). As both high and medium maturity responses rate this as the top most factors in successful strategy implementation as it can be deemed as empirically proven to remain an accurate assertion.

A distinguishing factor that was not correlated between the different levels of maturity, and which is rated as second most important by highly mature companies, is having the appropriate people. This result is very much in line with the latest trends revealed by Lorange in stating that human resources are becoming the key resource on which to focus the implementation of strategy (1998). This view is also shared by Raps in affirming that previous implementations failed due to the absence of the human factors in strategic planning (2005). This same item was rated fifth last (out of 16 factors) by both low and medium organisations, implying that Haudan’s views are accurately represented in arguing that strategy execution takes people and not paper(2007).

An engaging result is the illustration of a relatively low perceived importance to cross functional cooperation in implementing process improvements. Although that many case studies prove otherwise (Yoshino and Egawa, 2006; Lorange, 1998), the fact that even mature companies rate this as low, could be superseded by the value of clear assignment of roles and implementation responsibilities (Raps, 2005), which was rated as the most important factor by the high and medium maturity responses.

In their analysis of various implementation frameworks, Saunders, Mann and Smith found reoccurring elements of strategy deployment; among these is people, communication and alignment (Saunders, et al., 2008). This is in line with assertions made by Bay and Skitmore (2006), and Albu and Panzar (2010) to the importance of aligning strategy implementation for maturity process improvement.

It must be borne in mind that all organisations operate in dynamic and complex environments where there are multiple initiatives being implemented (Saunders, et al., 2008:1096). This signifies that there are many contingent factors that can influence the outcome of strategy implementation in maturity initiatives, therefore being mindful of the issues found, can improve the likelihood of success being attained.

There is both a process view and a structural view on strategy implementation, with both being valuable; and having to be aligned to the strategic goal, ultimately increasing the likelihood of success. In the current dynamic environment, having a human resource focus as a core competence, ensuring that one has the best people in the most appropriate assignments, with strong leadership throughout the entire organisation, clear and continuous communications and a supportive structure will assist organisations to implement strategies that are in response either an internal need or to the environmental stimuli. Based on the findings of this research to determine the most important factors for
such an implementation, results obtained are in line with these assertions and allow for the formation of the perceived most important factors therein.

5.7 Summary

In Chapter 5, research data was analysed and elaborated upon through an integrated discussion with the literature studied. In the following and final chapter (Chapter 6), the research is concluded and recommendations drawn.
CHAPTER 6: Conclusions and Recommendations

6.1 Introduction

This research report for the study conducted to explore the underlying intra-organisational factors for successfully implementing and improving project management maturity.

The report is separated into six chapters, each covering a separate constituent of the research study. Chapter 1 provided a detailed discussion on context and of background to the research. Chapter 2 provides a theoretical considerations and problem analysis of the study. Chapter 3 provided the academic context by way of a summary of the range of literature reviewed, whilst chapter 4 provided factors pertaining to the design of the study. Chapter 5 covered the results and the findings of the study based on the survey conducted.

In this, the final chapter of the report (Chapter 6), the research conclusion is drawn and recommendations discussed, based on the findings of the study in correlation with the literature review. The research problem is restated, to determine if it is successfully addressed by the research.

6.2 Research Problem Statement Revisited

The research problem statement for this dissertation, through which the three objectives for the research were established, is as follows:

“Organisational Project Management Performance cannot be implemented or increased without aligning inter-organisational factors enabling continuous process improvement”

From the research that was conducted, through the synthesis of the literature review and the survey that was performed, the following conclusions can be made from the objectives that were set out and the results of the analysis.

6.3 Conclusions

Drawing on literature from across various business and management sciences, combined with the survey analysis conducted, this research has sought to determine what is required to be in place to improve project delivery performance by means of understanding the intra-organisational complexities to achieve higher states of project management maturity. Factors determined to be of value were based on the premise that project failure is more likely due to predominant organisational aspects manifesting through project delivery issues as opposed to direct project deficiencies (Nieto-Rodriguez and Evrard, 2004); requiring a broader trawl across internal alignment.
With the alarming statistics on project failures provided annually by the Standish Group, stating that on average more than half of projects fail, impetus was given to unravel how processes can be improved to increase the likelihood of success, in the context of the greater organisation; as opposed to singling out specific processes. As projects deliver strategy, it is believed that to achieve higher levels of maturity, is a core competence that is required to obtain a sustainable competitive advantage (Yazici, 2009).

Endeavors to increase project management maturity are becoming prominent method to improve project processes and the resulting performance. However, as this is a complex task, great care is required in doing so. Successfully moving to higher states of maturity can provide significant benefits to an organisation as is evident from the theory discussed in chapter two and the literature review in chapter three. This progression through the states, becomes more challenging the higher the levels become, prompting an ever widening view. This necessitates a focus on consolidated project management principles across the organisation they achieve success (Dinsmore, 1999).

The results of this qualitative resonant study and the literature reviewed have revealed, that to increase project management maturity, a variety of inter-organisational issues require consideration, beyond the maturity models and their associated guidelines. Project management maturity is not achieved by simply following the recommended approaches suggested by frameworks, but rather about orchestrating a variety of organisational factors to build the capability for continuous improvement. Aligning factors such as information flow, systems, culture, change management and strategy implementation give these the frameworks a higher proclivity for success.

Organisations that perform their project management processes and activities on the higher levels of maturity do indeed follow key practices of associated maturity frameworks, focusing on the full spectrum of competencies, including the entire enterprise and its people as opposed to concentrating only the actual processes in question. A clear distinction was found between the varying levels of maturity in these facets.

A wide array of perceived core factors within an organisation required to increase project management maturity were revealed in this research. Different factors hold varying levels of impact on process improvement and maturity, but they must not be viewed in isolation.

The higher strataums of maturity are characterized by having applied, at the very least, information gathering and sharing mechanisms. In line with the literature studied and the survey findings, these mature organisations, as opposed to their counterparts, foster a climate of respect, openness and trust; a culture of continuous improvement in the entire organisation and a shared vision to capitalise on opportunities. Amongst many, these traits and practices are deemed to have the greatest impact in making the enterprise receptive to large scale process improvement in the project management sphere. The results indicate that most of the factors significantly contribute to the level of maturity, but the greatest effect seems to from those listed above.
Continuous learning on an individual basis was found to only have trifling benefits to maturity. In stark contrast however, is the need to create a boundaryless organization to promote information flow and shared problem solving. Organisational structure was established to play an important role to improve processes and to increase project management maturity, through the formation of strong projectised structures.

Intriguingly, a climate for organizational learning seems not to play a momentous role in maturity as the majority, revealing the opposite of what most of the literature anticipated. The impact of learning styles is in line with the suggested theory pertaining to project process improvements.

Consistent with the theory, the concepts of Kotter and Schlesinger (2008) and various subsequent research, change management’s effects on process changes/improvement that are found in the literature have presented themselves concretely in this study. Emphasis is placed on companies practicing purposeful and conscientious change management, having significantly greater levels of maturity and therefore vastly enhanced proficiency in improving and enshrining processes, showing a much stronger effect thereon than organisational learning seemingly has.

In implementing strategies relating to project management process improvement, higher maturity organisations have a clearly contemporary view, placing people at the forefront in implementation, with solid communications throughout the entire organisation, underlined by clear responsibility allocation and empowerment, supported by a culture of high performance and in particular, declarations of having the right people. The results of the current study correspond with the importance of these particular focus areas, especially with the proliferation of best practices ranging from early involvement and participation of staff to celebrating short term wins, sets mature companies apart from those with lesser project management practices, focusing on only a minority of aspects. Concurrency is therefore provided the current problems in low maturity companies, that there is a lack of an effective strategy to successfully implement those maturity standards or models (Hardgrave and Armstrong 2005; Brietzke and Rabelo 2006; Abrahamsson and Iivari 2002; Babar and Niazi 2008). In following the approaches of mature companies, successes will therefore be more likely attainable.

This study set out to examine how the prevalent failures in projects can be addressed and improved, by investigating at foundation level within organisations, key factors and implementation approaches to achieve higher states of organisational project management maturity. This was achieved through an in depth literature study and a comprehensive questionnaire distributed to project and operational managers in the professional and financial services industry.

The findings presented in this study reveal that no single company showed the propensity for higher project management maturity with one strong area and others weak. In considering the above, it is indicative that strengths are needed across a multitude of components. It can therefore be hypothesized that, only by acting in concert, through
alignment of the internal factors highlighted in this research, can project management process can successfully and continuously improved.

The problem statement presented in chapter one of this study was, “Organisational Project Management Performance cannot be implemented and increased without aligning inter-organisational factors enabling continuous process improvement”.

Therefore, it can be concluded, the research outcomes have proven this statement principally true, signifying that organizations with perceived superior project management maturity have indeed aligned intra-organisational factors, operating in unison, which enable them to improve project management processes and performance. The opposite has also arisen to be proven simultaneously, revealing that weak performing organisations are not appropriately aligned from an internal perspective.

To solve the issues of not being able to implement and improve project management processes effectively, can therefore be linked to understanding maturity, using the premise that to enshrine such efforts requires a greater understanding of strategy implementation; specific areas of learning, on a double loop principle, must be enshrined and appropriate change management must be executed to institutionalise changes throughout the organisation while minimising resistance. Taking these models into account, it has been determined what factors should be in place to foster and maintain improvement in project management processes.

In looking at the items addressed throughout the research study, it can be stated that successful delivery of projects and the ability to improve associated processes runs to the very core of an organisation and not merely at the hands of the project manager or at a high level. A holistic view of the separate themes is required to successfully implement an organisational project maturity effort and to an increase their maturity for enhanced project delivery from an intra-organisational level.

### 6.4 Recommendations

Through a synthesis of the in-depth analysis and literature review on inter-organisational issues facing the implementation of project management maturity, the subsequent recommendations were identified primarily using organisations of perceived high maturity as a keystone:

- It is recommended that organisations wanting to improve project management processes follow a formal project management maturity framework such as Project Management Institute’s Organisational Project Management Maturity Model (2005), as a guideline to ensure the correct processes are covered, as opposed to proceeding on a more informal basis, while expanding the focus to the entire enterprise and the people therein. It is important to note that in doing so, a choice to the desired level of maturity must be made, and incrementally build up thereto, without circumventing fundamental activities.
• When attempting to increase project management maturity, organisations should focus on all areas highlighted as important in this research, and not only focus on the specific process itself.

• Organisations should make sure that the basics are in place in terms of activities and system, such as documenting lessons learnt and implementing a knowledge management system as they are known to promote continuous improvement, while simultaneously creating the foundations that improve information flow.

• Although results on the importance and effectiveness of a climate for organisational learning and project management maturity were found to be inconclusive while bordering on triviality, no concrete recommendations can be given; barring that in a general organisational context and the promotion of a sustainable competitive advantage, it should not be neglected due to the prolific nature of literature on the importance thereof (McAdam and McIntyre, 1997; Rad and Levin, 2006; Bushe, 2009; Kock and McQueen, 1998; Carnegie Mellon, 2010; Tapp, et al., 2008; Argyris and Schon, 1978). It is therefore recommended as a key area for further research.

• Before implementing project improvement processes, it is highly recommended that the underlying culture of an organisation must be aligned to one of continuous improvement throughout the entire organisation, and not merely on the project process side, and foster climate of respect, openness and trust.

• It is recommended that the organisational structure should be reviewed for maturity increases, in order to craft a more projectised form, such as a matrix structure, which emphasises cross functional collaboration. This does not imply that the entire organisation must change, but specifically in the implementation engine, to ensure shared understanding, improved problem solving and knowledge creation. Interdepartmental barriers must be broken down, with cross functional cooperation and communication being fostered.

• In attempting or continuing to obtain higher levels of maturity, strong change management practices must be used, both in terms of general change readiness within the organisation, but particularly on formal change management approaches to overcome resistance. Of exacting significance, is to use the models in there complete form, applying all the steps. A recommended model is Kotter’s 8 Step Model (Kotter and Schlesinger, 2008) to improve the chances of success in moving from the current to the desired state.

• From a strategy implementation perspective for project management maturity, the contemporary human resource based view should take precedence in implementing such undertakings, steering away from the traditional top down methods to an approach that focuses on communication and accountability with openly clarifying roles and responsibility, while promoting an inclusive approach. This must be further
bolstered by ensuring that the appropriate people, with the required skills and motivation are in place to drive the efforts.

- It is recommended that organisations should consolidate project management principles across the organisation, not merely a single unit to proliferate the chances to achieve success. Underlying this process should be compelling vision that needs to be driven both from the top to the bottom and vice versa that becomes engrained in the fabric of the entire organisation.

6.5 Key Research Objectives

The key research objectives identified in this study were:

- To establish the current level of project management maturity in the organisations.
- To ascertain the perceived core factors within an organization required to increase organisational project management maturity.
- To identify the perceived key elements required for successful implementation of an organisational project management maturity strategy.

The research objectives were successfully addressed and recommendations drawn to assist enterprises in implementing project management process improvement initiatives for increased maturity.

6.6 Opportunities for Future Research

In the pursuit to meeting the objectives of this research, various other areas of interest have surfaced that present opportunities for future research within this environment.

- This research focussed only on certain elements perceived to be core intra-organisational factors in implementing successful project management maturity. Further research can be conducted into identifying and ranking other elements, from both within and external to the organisation that play critical part in organisational project management maturity successes.

- The theory in literature pertaining to a climate of organisational learning stated that it plays an overwhelmingly important role, as a core factor, to the success of project management maturity endeavours. As there is a discrepancy between the said literature and the findings of this dissertation, impetus is given that future research should be conducted to determine the exact components, the weights of their
importance and the extent of the relationship between organisational learning and project management maturity.

- A future study into the actual perceptions of staff could yield interesting results and further dimensions to the research problem, as opposed to using organisational characteristics as proxy for the various levels and using them as a base for comparison.

- As the results of this research are constrained to only a limited number of industries, investigating the impacts of the perceived core factors across numerous divergent industries to find the comparative effects of the components across the board would be beneficial to obtain greater insight into the overall accuracy and generalisability.

- To reveal the further intricacies between the various elements found pertaining to implementations of project management maturity and to unify the overall process, future studies at combining various issues into the development of a concise implementation framework are recommended to supplement the guiding theory based on processes deemed to be in place.

- Each component identified as being relevant to in terms of impacting organisational project management maturity positively or negatively, possibly requires further study to unravel the complexity and requirements in relation to their respective impacts.

### 6.7 Conclusion

The objective of this chapter was to restate the research question determined at the initiation of this research, drawing conclusions thereto based on findings made from the literature review and survey conducted; ultimately making recommendations therefore. It is believed that the research conducted for this dissertation will provide significant value to practitioners in the field of project management and process improvement as it highlights the core components required to be aligned, in addition to clarifying strategy implementation practices to improve the chances of overall success.
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APPENDICES

ANNEXURE A: QUESTIONNAIRE

The survey was distributed both on paper and electronically.

Paper Based Questionnaire

Cover Letter

A STUDY OF PROJECT MANAGEMENT MATURITY

I would like to invite and would appreciate your participation in a study of project management maturity and the organizational factors supporting successful implementation and improvement thereof.

This survey is being conducted as part of a dissertation that will be submitted for the fulfilment for the Degree of Master of Business Administration from the UNISA Graduate School of Business Leadership.

It is envisaged that the research study will help to increase the understanding of the nature of implementing project management maturity initiatives and increasing the levels of maturity in an organizational context, the critical factors needed to do so, and the impacts thereof in order to manage these more successfully.

The questionnaire should take approximately 10 minutes of your time. You are required to provide the answers to the questions according to your own personal views and experience. There is therefore no right or wrong answer.

Please complete the survey by no later than 13 March 2012.

I would like to thank you in advance for completing this questionnaire. The information you provide through the questionnaire will be confidential and shall only be used for the purpose of this academic research. If you have any questions, please email me at rainer.preussler@firstrand.co.za.

Once again, thank you for your time and participation in this study.

Yours Sincerely,
Rainer Preussler
Survey Questionnaire

Instructions for completion:

1. All information will be treated as strictly confidential:
   a. Personal details will not be collected.
   b. Information will be used only in aggregated form.
   c. If you would like to contact the Researcher, please see the contact details at the end of the questionnaire.

2. As this survey pertains to project management process improvement, consider any mention of process improvement therefore as being project management related.

3. Please complete all the sections of the questionnaire and the relevant questions – incomplete or blank questions will render the response for a particular section irrelevant, and this could impact the results of the study.

4. Please select only ONE applicable answer to each question line item.

5. Please remember that there are no right or wrong answers; simply answer the question based on your current knowledge and/or experience.

6. It requires marking your responses by CROSSING (X) your choice and returning the questionnaire to the Researcher.

7. Your assistance in completing the survey questionnaire will allow the Researcher to gather the necessary data for the research study.
QUESTIONNAIRE

1. Which one of the following best describes the industry your organization operate in?

<table>
<thead>
<tr>
<th>Industry Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Communication Technology (ICT)</td>
<td>1</td>
</tr>
<tr>
<td>Professional (business) and Financial Services</td>
<td>2</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Please indicate your occupational level

<table>
<thead>
<tr>
<th>Occupational Level</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
<td>1</td>
</tr>
<tr>
<td>Senior Management</td>
<td>2</td>
</tr>
<tr>
<td>Professionally qualified and experienced specialists and middle management</td>
<td>3</td>
</tr>
<tr>
<td>Skilled technical and/or academically qualified worker, junior management, supervisor, foreman or superintendent</td>
<td>4</td>
</tr>
<tr>
<td>Semi-skilled decision-making worker</td>
<td>5</td>
</tr>
</tbody>
</table>

3. What Type of Projects does your organization mainly execute?

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT related</td>
<td>1</td>
</tr>
<tr>
<td>Business/Consulting related</td>
<td>2</td>
</tr>
<tr>
<td>Finance related</td>
<td>3</td>
</tr>
<tr>
<td>Change related</td>
<td>4</td>
</tr>
<tr>
<td>Combination</td>
<td>5</td>
</tr>
</tbody>
</table>

4. Please rate the current high level project processes within your organization.

<table>
<thead>
<tr>
<th>Process Description</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The organization’s projects may be run informally with no standard process or tracking system.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The organization ensures that each project is run with its own processes and procedures to a minimum specified standard, with some consistency or co-ordination between projects.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The organization has its own centrally controlled project processes, and individual projects can flex within these processes to suit the particular project.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The organization obtains and retains specific measurements on its project management performance and run a quality management organization to better predict future performance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The organization runs continuous process improvement with proactive problem and technology management for projects in order to improve its ability to depict performance over time and optimize processes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Projects teams are assembled from across functional areas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Formal project management training for the team is conducted.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>High level of senior management support for project management throughout the organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The organisation has a culture of strong teamwork.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
5. Please rate the following practices within your organization.

<table>
<thead>
<tr>
<th>5.1</th>
<th>Projects are reviewed and lessons documented.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>A formal knowledge management system or portal are utilized that contains information that can regularly be used.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>There is a climate of respect, openness and trust.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>The organization’s leadership encourages open communications and information flow.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>There is encouragement to experiment with new approaches/ideas and to take calculated risks.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>The organization encourages and supports continuous learning.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7</td>
<td>Processes and systems are in place to enhance, encourage and sustain learning among all its employees.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8</td>
<td>Managers facilitate and coach as opposed to controlling and monitoring.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.9</td>
<td>A general culture of continuous improvement in all activities throughout the organization is present.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.10</td>
<td>A shared vision which includes the organization’s capacity to identify, respond to and capitalize on opportunities exists.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.11</td>
<td>Problems that are encountered, are typically solved quickly by seeing what is causing the problem and changing the cause to rectify the issue.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.12</td>
<td>Staff are encouraged to challenge existing standards, rules and policies that are in place for the potential to improve standards.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.13</td>
<td>Lessons learnt in one area, are often applied to solve a problem in a different area.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.14</td>
<td>Your company regularly evaluates processes in general.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.15</td>
<td>A recent change in senior leadership has taken place.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.16</td>
<td>Regular communication happens between you, the company and its stakeholders.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.17</td>
<td>The organization encourages you to take responsibility and learn from your mistakes.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.18</td>
<td>The organization sees continuous learning and development as a contribution to continuous improvement.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.19</td>
<td>Components of your own performance improvement are the result of continuous learning.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.20</td>
<td>Cross functional /departmental cooperation is used for projects /problem solving/improvement initiatives</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.21</td>
<td>Knowledge is effectively shared or transferred across departments.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.22</td>
<td>People are generally reluctant towards any significant changes in processes.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.23</td>
<td>Your organization in general has a very flat structure with few reporting lines.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.24</td>
<td>In executing projects, a functional structure with expertise gathered from one department is used.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.25</td>
<td>In executing projects, a matrix structure with expertise from various departments is used.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.26</td>
<td>More time is generally spent on planning changes as opposed to implementing them.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.27</td>
<td>Various significant improvement activities happen at the same time.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.28</td>
<td>Most staff across various levels of management is involved in implementing improvement processes.</td>
<td>1 2 3 4</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>In creating changes to processes, a system is followed that looks at analyzing the current state, agreeing on the target state, identify the gaps, and creating recommendations for improvement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.2</td>
<td>There is open debate about aspects relating to process improvement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.3</td>
<td>Ideas for process improvement have been declined due to resource constraints (financial or human).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.4</td>
<td>After the creation of new processes, performance management systems are adapted to follow these giving incentives for following processes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.5</td>
<td>Newly created policies and procedures are always followed completely.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.6</td>
<td>You are fully informed for the reasons behind significant changes implemented in project processes improvements.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.7</td>
<td>Changes have on occasion negatively influenced the morale in the organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.8</td>
<td>You are involved during the planning and implementation of the changes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.9</td>
<td>Most of the changes have a positive effect in the organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.10</td>
<td>Management displays participative and transparent leadership.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.11</td>
<td>Feedback is given in an open and direct manner.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.12</td>
<td>Strong change management is practiced during projects.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.13</td>
<td>Major changes in processes are supported by a sense of urgency.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.14</td>
<td>Such major process improvements are usually led by a group of people as opposed to an individual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.15</td>
<td>Leadership creates a vision that helps improve such changes and communicates it heavily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.16</td>
<td>Adjustments are made to systems and structures that could inhibit the changes to the process improvement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.17</td>
<td>Process improvements that run over long periods of time, have quick wins or celebrations planned for over the duration.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.18</td>
<td>People involved with these quick wins are visibly recognized or rewarded.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.19</td>
<td>As these improvement processes occur, do they spur on improvements in other areas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.20</td>
<td>Business successes linked to these changes in project management process improvements are presented to all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
7. What do you believe are the main/important factors for a successful implementation or project management process improvement

<table>
<thead>
<tr>
<th></th>
<th>Very important</th>
<th>Important</th>
<th>Less important</th>
<th>Not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>Commitment/Buy in of senior management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.2</td>
<td>Early involvement of people being affected by the changes</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.3</td>
<td>Align and mobilize leaders</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.4</td>
<td>Commitment/Buy in of middle management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.5</td>
<td>Appropriate training and coaching for people involved</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.6</td>
<td>Create an open/strong communication and collaboration culture (boundaryless organization)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.7</td>
<td>Realization and celebration of Short Term Wins</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.8</td>
<td>Engage, communicate and explain the changes involved with all stakeholders</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.9</td>
<td>Clarify in an early stage the ownership, decision making roles and powers in the process improvement</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.10</td>
<td>Establish a shared and motivating vision</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.11</td>
<td>Appropriate project staffing</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.12</td>
<td>Empowering people to act on the vision defined</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.13</td>
<td>Establishing a sense of urgency/burning platform</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.14</td>
<td>Change of reward systems to support change initiative</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.15</td>
<td>Process improvements conducted by cross functional teams</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.16</td>
<td>Culture of high performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

You have reached the end of the questionnaire.

Thank you very much for taking the time to complete it, as it will form highly valuable input into this study!

Contact details:

Rainer Preussler

Email: Rainer.preussler@firstrand.co.za

Cell: 0825774591
Electronic Questionnaire

Cover Letter

A STUDY OF PROJECT MANAGEMENT MATURITY

Dear {First Name}

I would like to invite and would appreciate your participation in a study of project management maturity and the organizational factors supporting successful implementation and improvement thereof.

To participate please click the link below or copy it into your web browser.


This survey is being conducted as part of a dissertation that will be submitted for the fulfillment for the Degree of Master of Business Administration from the UNISA Graduate School of Business Leadership. It is envisaged that the research study will help to increase the understanding of the nature of implementing project management maturity initiatives and increasing the levels of maturity in an organizational context, the critical factors needed to do so, and the impacts thereof in order to manage these more successfully.

The questionnaire should take approximately 10 minutes of your time. You are required to provide the answers to the questions according to your own personal views and experience. There is therefore no right or wrong answer.

Please complete the survey by no later than 13 March 2012.

I would like to thank you in advance for completing this questionnaire. The information you provide through the questionnaire will be confidential and shall only be used for the purpose of this academic research. If you have any questions, please feel free to contact me.

Once again, thank you for your time and participation in this study.

Yours Sincerely,

Rainer Preussler
Selected Screenshots of the Online Questionnaire

Project Management Maturity and Associated Factors - Survey Questionnaire

Instructions for completion:
1. All information will be treated as strictly confidential.
2. Personal details will not be collected.
3. Information will be used only in aggregated form.
4. If you wish to contact the Researcher, please send an email to [email protected].
5. The survey provides an opportunity to assess management process improvement, consider any written process improvement thereafter as being project management related.
6. Please complete all of the questions in the relevant sections - incomplete or blank questions will render the survey responses for a particular section inexact and to the extent this could impact the results of the study.
7. Please select only ONE applicable answer to each question.
8. Please remember that there are no right or wrong answers, simply answer the question based on your current knowledge and experience.
9. Your assistance in completing the survey questions will allow the Researcher to gather the necessary data for the research study.
Please rate the current high-level project processes within your organization:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The organization's projects may be run informally with no standard process or tracking systems.

The organization ensures that each project is run with the same processes and procedures as a minimum specified standard, with some consistency in co-ordination between projects.

The organization has its core centrally controlled process policies and individual project processes to suit the particular project.

The organization obtains and retains specific requirements on its project management processes and performance and uses a quality management organization to better predict future performance.

The organization maintains a continuous process improvement with specific process and performance strategies in order to improve its ability to predict performance over time and optimize processes.

---

Please continue to select ONE option per question.

Please rate the following practices within your organization:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Projects are reviewed and issues documented.

A formal knowledge management system or center that contains information that can't be shared.

There is a climate of respect, openness and trust.

The organization's leadership encourages open communications and information flow.

There is encouragement to experiment with.
You have reached the end of the questionnaire.
Thank you very much for taking the time to complete it, as it will form highly valuable input into this study.

Please click "Finish Survey."