CHAPTER 5: CONCLUSION

5.1 INTRODUCTION

Many projects either fail completely or are rendered less effective because the change management imperative is often overlooked and/or underestimated and is therefore not managed as an integral part of the planning and execution of the project(s) concerned. Projects are unique once-off change interventions aimed at effecting organisational change, but the overriding focus is often on so-called mechanistic or "hard" project deliverables. An emphasis on goal completion on time, cost containment and quality often leads to the exclusion or neglect of "softer" issues of organisational change and their related dimensions. The literature review done at the start of this study confirmed the importance of proper change management and revealed that the absence of such management can have a negative impact on a project's outcome (Burnes, 1996; Boddy & Macbeth, 2000; Grover *et al.*, 1995; Knutson, 1993; Wastell *et al.*, 1994). The importance of the appropriate management of change dynamics in projects was also stressed by Hebert (2002), Lanning (2001) and McElroy (1996).

This poses an interesting challenge to the project management profession, in that it is now essential for project managers consciously and deliberately to manage change, just as they manage other project deliverables. The management of all change dynamics facets throughout the project management life cycle is essential to ensure the successful achievement of project objectives.

It is therefore most important first to identify what constitutes change management in the project management domain and then consciously to manage these elements across the entire project life cycle to enhance project outcomes.

This final chapter of the study outlines the conclusions of the study and makes recommendations regarding future research.

5.2 ACHIEVEMENT OF THE STUDY OBJECTIVES

The **primary objective** of this study was to develop an assessment tool that contains all the relevant elements of change management across the project life cycle which can be used as both a measurement and a diagnostics tool to improve change management and the likelihood of success in the project implementation environment.

The pursuit of the primary objective of the study was supported by the pursuit of several content-related **secondary objectives**, namely

- to establish what constitutes change dynamics in the project management domain;
- to develop a framework of change dynamics applicable in the project management domain; and
- to determine which process should be used in developing a change dynamics assessment tool.

A comprehensive literature study was conducted to ascertain what could typically constitute change dynamics across a project life cycle. This review covered some contemporary models of change and the importance of change management in projects. The literature available reveals an abundance of information on both change and project management theories and models. So, for example, Grover *et al*. (1995:110) concluded that, based on empirical research on reengineering in 105 organisations, change management within Business Process Reengineering was of central importance in Business Process Reengineering implementation success. They added that project implementation is complex and that, in order to succeed, it is essential that change dynamics be managed and that balanced attention be paid to all identified factors, such as management support, technological competence and project management. Kotter (2002) found that large-scale organisational change can only be successful if aspects such as building the guiding team, getting the vision right, communicating for buy-in, empowering action, sustaining the effort and making the change stick are handled well.

In terms of a framework and process, this study was conducted within the realm of a social science paradigm, applying both inductive and deductive reasoning. The research design contained both exploratory and descriptive components which informed the use of both qualitative and quantitative information gathering methods. Primary data was obtained via applications of the Delphi technique and the DeVellis scale development methodology.

In conclusion, the secondary objectives were met during the literature study and the investigation into the appropriate research methodology, as reported on in Chapters 2 and 3 respectively.

The process of meeting the **primary objective**, in other words, the development of an assessment tool to measure change dynamics in the context of project management and the overall outcome, is summarized below.

5.3 VERIFICATION OF THE CHANGE DYNAMICS ASSESSMENT TOOL

Further information on what constitutes change dynamics in the project management domain was gathered using the Delphi technique. This data informed the design of the questionnaire used during the initial phase of the research design. The draft framework for the measurement instrument was then pre-tested by means of an application of Lawshe's content validity methodology. The results largely confirmed the measurement items included in each of the four project life cycle phases at an α = 0.05 significance level. Various items were also excluded from the proposed assessment tool for the next phase of the research project, based on the Lawshe results when content validity ratios of less than 0.31 for a sample of 37 were obtained.

The next phase of testing exposed the change management measurement instrument to the views and opinions of two target population groups, namely South African and selected international project managers of various experience levels and from different economic sectors. The data collected was analysed to determine the scale statistics for the groupings and to measure the internal consistency and reliability of the instrument, using Cronbach's alpha coefficient. Highly intercorrelated items in each of the four project life cycle sections of the assessment tool, namely the conceptual/initiation, planning, implementation and post-implementation phases were indicated by Cronbach alpha coefficients of 0.937, 0.974, 0.931 and 0.875 respectively, which are all substantially higher than the acceptable minimum level of 0.70.

Various iterations of exploratory factor analysis indicated the primary factors for each of the four phases of a project life cycle. These can be briefly summarised as follows:

- ensuring alignment and organisational readiness after assessing and/or creating the need for change during the conceptual/initiation phase of a project;

- creating an enabling environment for change through communication and engagement during the project planning phase;
- executing the necessary activities to achieve the stated objectives and outcomes of the project during the implementation phase of a project; and
- embedding and institutionalising the changes effected through the project during the final post-implementation period.

The most important change management elements of each project phase were also identified and highlighted for retention in the final assessment tool, which consisted of 103 items.

A second round of item-scale and reliability analysis, together with Tucker's phi results for the four sections of 0.976, 0.981, 0.992, 0.980 respectively (all greater than the acceptable level of 0.95), confirmed the reliability, consistency and structure of assessment tool with the reduced number of measurement items.

Finally, significant differences between the responses from various demographic groupings, in particular, between gender, different economic sectors, various project management qualifications and levels of experience groupings were identified from the ANOVA and Tukey's Post hoc HSD test results. Possible reasons for these differing responses were proposed, although they are not material in terms of the final composition of the assessment tool.

In conclusion, it is the opinion of the researcher that all the objectives mentioned above were met in the course of this research project, in that **a comprehensive assessment tool for the measurement of change in the project management domain has been developed**, using appropriate research, scale development and statistical analysis methodologies.

5.4 LIMITATIONS OF THE PRESENT STUDY

5.4.1 Sample size

In assessing the adequacy of the number of observations used in this study, it must be borne in mind that individual factor analysis was conducted for each of the four sections, A to D, of the measurement instrument questionnaire for the South African and international target population groups, and for both groups combined. This approach addressed the problem of the relatively small sample size to a large extent by reducing the effective number of items being analysed at any one time in relation to the respective observations available.

Applying the guidelines described in Chapter 3 above, it is concluded that the sample size as applied to Section C (11 items) and Section D (9 items) of the assessment tool is more than adequate, even in terms of the most onerous criterion mentioned. For the analysis of the South African and international responses as separate groups, the sample size is at least seven times the number of items being analysed, while for the combined group the sample size is greater than ten times the number of items under review.

Sample size shortcomings could potentially arise for Section A (25 items) and Section B (72 items) of the study. For Section A, the sample size is a minimum of 3.4 times the number of items being analysed for the separate South African and international population groups but still meets the stated minimum guideline level of five times when the combined groups were analysed (6.9 times). The underlying structure that emerged from the factor analysis for Section A is therefore considered to be valid. The potential shortcomings associated with the analysis results for Section B are more severe. The overall sample size is only 2.4 times the number of items analysed for the combined group. Nevertheless, the factor analysis results for Section B are still considered to be valid, especially when assessed in conjunction with the highly correlated and reliable scale statistics reported on before.

5.4.2 Measurement scales for each item

The aim of this particular study was to identify and confirm the change management aspects that the project management team must focus on and address at a strategic level to ensure overall project outcome success. The study did not include the development of an actual measurement scale or metric for each change management item in the assessment tool. This leaves room for potential follow-up research in this regard.

In addition, it may be possible to refine the number of change dynamic elements contained, in particular in Sections A and B, of the assessment tool to simplify the application of the tool during project management interventions.

5.4.3 Change management strategies and corrective actions

Applying the assessment tool in the course of a project life cycle can assist a project management team to determine whether or not change dynamics are being adequately addressed. If not, appropriate strategies and corrective interventions will need to be

implemented to ensure that the desired project outcome is achieved and is sustainable. Recommendations on the implementation of appropriate change management strategies and the corrective actions are not included in the scope of this research.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The measurement instrument presented in this research report addresses the strategic items that a project management team should focus on in any project management initiative ("**the what**"). Operationalisation of the instrument was not the focus of the study ("**the how**"). The recommendations for future research that flow from this observation are intended to address the two shortcomings mentioned above:

- the development of a measurement scale or metric for each change management item included in the assessment tool should deliver a reliable indicator that each change management item has been adequately covered in each of the project phases; and
- an analysis of the appropriate follow-up action based on the results of the aforementioned assessment would address the strategies to be put in place or the corrective actions to be taken if the application of the assessment tool was to indicate that the management of the change dynamics lagged behind more traditional project management activities and threatened the overall desired result of a project.

5.6 CLOSING REMARKS ON THE CONTRIBUTION MADE BY THE PRESENT STUDY

This study has contributed at various levels to the disciplines of project management, change management and organisational behaviour.

Firstly, the need to manage change dynamics during the project management life cycle has been confirmed.

Secondly, an overarching assessment tool has been developed to inform and guide the thinking, planning, focus and actions of project managers in the field of change dynamics. It can also be used as diagnostic tool to assess shortcomings in project management implementation and to identify areas for potential improvement to achieve project success and business improvement.

Finally, the research findings have contributed and are relevant to the change management and project management bodies of knowledge in that an assessment tool is presented which can be used to focus on and measure the management of change dynamics in the project domain. This is will hopefully contribute to the integration of these two constructs by assisting organisations and project managers in ensuring that all aspects of the project are adequately addressed and that the “softer” change dynamic elements are managed in conjunction with the more tangible project deliverables.

Elevating project management outcomes to the next level of excellence requires that all potential synergies between the various aspects of the project are leveraged to the fullest extent possible. Using the assessment tool developed during this research study to manage change dynamics will contribute towards aligning and leveraging the entire organisation’s human capital in the interest of common goals and enhanced project deliverables.

The management of change dynamics is not an optional extra. It is a business and organisational imperative for sustainable project success.