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**Defence Technological Edge Program Management:
A Search for More Reliable Outcomes**

by

Raymond Gordon McNally

This thesis is submitted to fulfil the requirements of the unit Public Administration Dissertation D, and complete the requirements for the degree of Doctor of Public Administration

University of Canberra

12 June 2002

Dedication

During the 13 years I attended the University of Canberra part time, I remained blessed with the support of my wife Lynda, and children Luke and Angela. They assisted me with the challenges in life, and I remain forever in their debt.

Acknowledgments

This thesis has drawn from a selection of important contributions to public sector program management theory and practice made over a period of some 50 years by leading academics and managers in the field, especially those concerning defence programs. Their work appears extensively throughout this thesis as indicated by references to their published works. Without their dedication, brilliance, and the extensive records of their work, this thesis would not have been possible.

My University of Canberra lecturers, tutors and student colleagues have over a decade provided me with academic enrichment that has made much of my professional development possible. My heartfelt thanks go to them all.

The University of Canberra's Dr Alan Jarman deserves special mention. Alan has made an enormous impact on my academic and professional development for most of the last decade. Alan was a most influential lecturer, tutor and seminar leader during my Bachelor of Arts (Administration) and Master of Business Administration studies, and he was my primary supervisor during my research and thesis preparation. His brilliant mind, engaging personality, generosity and selfless dedication to expanding the boundaries of management theory and practice, has benefited and encouraged me enormously. He continually stretched my academic reach, and for that I am most thankful. I also thank my secondary supervisor Professor John Halligan for his efforts in making the professional doctorate program possible and for his valuable assistance during the coursework phase of my program.

Last but not least, I have had the privilege of working with scores of highly professional people within the Australian National Audit Office and the Australian Defence Organisation. My work with them ensures my academic studies remain exposed to the enormously complex mix of day-to-day challenges that exist in public sector program management. Many of the lessons I have learned with them underpin this thesis.

Raymond McNally

June 2002

Abstract

During the early 1960s, the US Department of Defense, under Secretary Robert McNamara implemented for the first time in national government a Planning-Programming and Budgeting System (PPBS) in order to improve effectiveness and efficiency in defence program management. McNamara sought improved effectiveness through a formal five-year program designed to reduce costs. He also sought efficient methods of managing joint service strategy coordination, requirements' analysis and planning, and improved alignment between the choice of requirements and the size and nature of the acquisition program. The Australian Defence Organisation (ADO) and the UK Ministry of Defence later sought to implement their own forms of PPBS. Recently, both have introduced program management innovations that seek to achieve more reliably effective and efficient outcomes.

The thesis has reviewed program management theory with a particular focus on its implementation challenges relating to strategic management, program review, personnel management and program coordination. It has sought to answer the research problem: Which specific management designs could offer better outcomes for Australian defence technological edge programs? The thesis' central proposition is that the greatest opportunities for improving defence program outcomes occur when classic PPBS concepts are implemented within a Program Management System that incorporates Zero-Base budgeting (ZBB), Management by Objectives (MBO), and Matrix structural systems. All of these systems, either alone or in combination seek to enhance program quality, scheduling, financial management and evaluation.

The research used in-depth case study research based on qualitative data found within a selection of recent Australian National Audit Office reports, and other public records. The central proposition is subjected to dynamic reliability-related contingency analysis and evaluation. The thesis concludes with the proposition that if managers were to implement a contingency based integrated mixture of the above-mentioned systems they could expect improved technological edge program outcomes.

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