Staff Perceptions of an Enterprise Resource Planning System Implementation: A Case Study of three Australian Universities

Marilyn Dale Fisher
BA Syd, Dip Ed Syd, PG Dip Couns Nepean, MA Macq.

A dissertation submitted in partial fulfilment of the award of Doctor of Education

Faculty of Arts, Humanities and Education
Central Queensland University

May 2006
Abstract

This study examines staff perceptions of the implementation of an Enterprise Resource Planning system (ERPs) in three Australian universities. It considers the growing body of literature on the issues impacting on effective and efficacious Enterprise Resource Planning (ERP) implementations in organisations including the most recent literature on ERPs in the higher education sector. This literature identifies a number of issues that it is argued, translates from the corporate sector to the higher education sector including a number that require additional focus in this sector. It is proposed in this dissertation that effective and efficacious implementations in Australian universities require particular consideration of organisational influences related to their context and the perceptions of the users of the systems.

Case study methodology was used to examine the staff perceptions of the management of ERP implementations in universities. This involved undertaking case studies in three Australian universities in the process of implementing ERP systems. The first phase of the study obtained data through a series of focus groups at one university to explore staff perceptions of the efficacy of the ERP implementation at their university. This data and the relevant literature served as a framework for the development of the research process in the second phase of the study. This phase involved conducting a series of interviews with staff that enabled the researcher to undertake a more detailed exploration of the staff perceptions of influences affecting ERP system implementations at three Australian universities.

The research study identifies the influences impacting on the outcomes of these implementations of ERPs in the three Australian universities and forms the basis for the development of guidelines for the effective and efficacious management of ERP implementations in Australian universities. This set of guidelines for the management of implementations of ERPs in Australian universities is an outcome that can have applicability for the higher education sector generally.
# Table of Contents

Abstract......................................................................................................................... ii
Table of Contents................................................................................................................. iii
Index of Tables.................................................................................................................. v
Index of Figures................................................................................................................ vi
List of Abbreviations......................................................................................................... vii
Acknowledgements.......................................................................................................... viii
Declaration.......................................................................................................................... ix
Chapter 1 Introduction ........................................................................................................ 1
  1.1 INTRODUCTION ........................................................................................................... 1
  1.2 BACKGROUND ............................................................................................................ 2
  1.3 SCOPE AND AIM OF THE STUDY.............................................................................. 6
  1.4 RESEARCH QUESTIONS ........................................................................................... 6
  1.5 RESEARCH OBJECTIVES ......................................................................................... 7
  1.6 SIGNIFICANCE .......................................................................................................... 8
  1.7 JUSTIFICATION OF THE RESEARCH AND CONTRIBUTION TO KNOWLEDGE ........... 9
  1.8 LIMITATIONS ........................................................................................................... 10
  1.9 DEFINITIONS AND TERMINOLOGY......................................................................... 12
  1.10 ORGANISATION OF DISSERTATION ..................................................................... 14
Chapter 2 Literature Review ............................................................................................. 16
  2.1 INTRODUCTION ........................................................................................................ 16
  2.2 THE CONTEXT OF THE INTRODUCTION OF ERP AND ERPS............................... 16
  2.3 CONTEXT OF THE EMERGENCE OF ERP IN THE HIGHER EDUCATION SECTOR ....... 18
  2.4 ERP IMPLEMENTATION PROCESSES....................................................................... 24
  2.5 RESEARCH ON ERP IMPLEMENTATIONS............................................................... 29
  2.6 ISSUES FROM THE LITERATURE INFORMING THE RESEARCH QUESTIONS .......... 49
  2.7 CONCLUSIONS ......................................................................................................... 57
Chapter 3 Research Methodology ...................................................................................... 62
  3.1 INTRODUCTION ........................................................................................................ 62
  3.2 ONTOLOGY AND EPISTEMOLOGY ......................................................................... 62
  3.3 RESEARCH PARADIGM .......................................................................................... 65
  3.4 CHOICE OF RESEARCH METHOD .......................................................................... 66
  3.5 CASE STUDY METHODOLOGY............................................................................... 67
  3.6 STUDY DESIGN ....................................................................................................... 71
  3.7 SAMPLE AND DATA COLLECTION METHODS....................................................... 73
  3.8 RESEARCH ETHICS................................................................................................. 97
  3.9 SUMMARY .............................................................................................................. 99
Chapter 4 Findings and Discussion .................................................................................... 101
  4.1 INTRODUCTION ....................................................................................................... 101
4.2 PHASE 1 FINDINGS ................................................................................................. 101
4.3 PHASE 2 FINDINGS ................................................................................................. 112
4.4 DISCUSSION OF RESULTS AT UNIVERSITY X .................................................. 143
4.5 DISCUSSION OF FINDINGS .................................................................................... 146
4.6 CONCLUSIONS ........................................................................................................ 165

Chapter 5 Conclusions and Recommendations ............................................................ 170
5.1 INTRODUCTION ...................................................................................................... 170
5.2 RESEARCH QUESTION FINDINGS ........................................................................... 170
5.3 KEY COMPONENTS OF AN EFFECTIVE AND EFFICACIOUS ERP SYSTEM IMPLEMENTATION IN UNIVERSITIES ...................................................................................................................... 181
5.4 GUIDELINES AND KEY COMPONENTS FOR ERP SYSTEM IMPLEMENTATIONS IN UNIVERSITIES ........................................................................................................................................ 185
5.5 IMPLEMENTATION STRATEGY FOR THE GUIDELINES .......................................... 187
5.6 CONTRIBUTION TO KNOWLEDGE AND PRACTICE ............................................ 190
5.7 SUGGESTIONS FOR FURTHER RESEARCH .............................................................. 191
5.8 CONCLUDING REMARKS ......................................................................................... 193

References .................................................................................................................... 196

Appendix A Focus Group Information ............................................................................ 210
Appendix B Information Sheet for Interviews ................................................................ 212
Appendix C Consent Form for Interviews ...................................................................... 214
Appendix D Ethical Clearance Application ..................................................................... 215
Appendix E Interview Questions .................................................................................... 220
Index of Tables

Table 2.1 A CSF framework with strategic and tactical factors...........................................32
Table 2.2 Adapted from Nielsen’s CSF for ERP implementations from literature....................36
Table 2.3 Adapted from Esteves and Pastor’s (2005) factors for ERP implementations..............38
Table 3.1 Key characteristics of a case study.......................................................................70
Table 3.2 Comparative characteristics of the three research sites........................................75
Table 3.3 Interviews at three universities by institution and role..........................................83
Table 4.1 Organisational leadership - focus group data.........................................................103
Table 4.2 Organisational planning - focus group data (University X).....................................105
Table 4.3 Staffing impacts - focus group data (University X).................................................107
Table 4.4 Change management - focus group data (University X)........................................109
Table 4.5 Other issues - focus group data (University X)......................................................110
Table 4.6 Organisational leadership - interview data (University X)......................................114
Table 4.7 Organisational leadership - interview data (University Y)......................................115
Table 4.8 Organisational leadership - interview data (University Z)......................................116
Table 4.9 Organisational context and planning - interview data (University X)......................119
Table 4.10 Organisational context and planning - interview data (University Y)......................121
Table 4.11 Organisational context and planning - interview data (University Z)......................122
Table 4.12 Staffing impacts - interview data (University X)..................................................124
Table 4.13 Staffing issues - interview data (University Y).....................................................126
Table 4.14 Staffing issues - interview data (University Z).....................................................127
Table 4.15 Project management - interview data (University X)............................................129
Table 4.16 Project management - interview data (University Y)............................................130
Table 4.17 Project management - interview data (University Z)............................................131
Table 4.18 Change management - interview data (University X)..........................................132
Table 4.19 Change management - interview data (University Y)..........................................134
Table 4.20 Change management - interview data (University Z)..........................................135
Table 4.21 Other issues - interview data (University X)........................................................137
Table 4.22 Other issues - interview data (University Y)........................................................138
Table 4.23 Other issues - interview data (University Z)........................................................140
Table 4.24 An evaluation of implementation mean scores (University X, Y & Z).....................142
Table 4.25 Summary of ERP implementation findings........................................................167
Table 5.1 Guidelines for ERP Implementations in Universities............................................180
Table 5.2 Guidelines and key components for ERP implementations in universities..............186
Table 5.3 ERP implementation by stage..............................................................................188
Index of Figures

Figure 3.1 Diagrammatic view of the research process.................................................. 71
Figure 3.2 A research “logic” adapted from Lankshear and Knobel (2003, p.1) ........ 89
Figure 3.3 Concept map for University X ................................................................. 97
Figure 5.1 ERP implementation process key components................................. 185
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>Administration</td>
</tr>
<tr>
<td>AUD</td>
<td>Australian Dollar</td>
</tr>
<tr>
<td>AVCC</td>
<td>Australian Vice-Chancellors’ Committee</td>
</tr>
<tr>
<td>BPR</td>
<td>Business Process Re-engineering</td>
</tr>
<tr>
<td>CA</td>
<td>California (USA)</td>
</tr>
<tr>
<td>CASMAC</td>
<td>Core Australian Specification for Management and Administrative Computing</td>
</tr>
<tr>
<td>CAE</td>
<td>College of Advanced Education</td>
</tr>
<tr>
<td>CHA</td>
<td>CHA Computer Solutions Pty Ltd</td>
</tr>
<tr>
<td>CIO</td>
<td>Chief Information Officer</td>
</tr>
<tr>
<td>CQU</td>
<td>Central Queensland University</td>
</tr>
<tr>
<td>CSF</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>DVC</td>
<td>Deputy Vice Chancellor</td>
</tr>
<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
</tr>
<tr>
<td>ERPs</td>
<td>Enterprise Resource Planning systems</td>
</tr>
<tr>
<td>ERPII</td>
<td>Enterprise Resource Planning II</td>
</tr>
<tr>
<td>G08</td>
<td>Group of Eight universities</td>
</tr>
<tr>
<td>GST</td>
<td>Goods and Services Tax</td>
</tr>
<tr>
<td>HEIMS</td>
<td>Higher Education Information Management System</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resource</td>
</tr>
<tr>
<td>IEEE</td>
<td>Institute of Electrical and Electronics Engineers</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>MRP</td>
<td>Material Requirements Planning</td>
</tr>
<tr>
<td>MRPII</td>
<td>Manufacturing Resource Planning</td>
</tr>
<tr>
<td>No.</td>
<td>Number</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>RFP</td>
<td>Request For Proposal</td>
</tr>
<tr>
<td>RMIT</td>
<td>Royal Melbourne Institute of Technology</td>
</tr>
<tr>
<td>SAP</td>
<td>Systeme, Anwendungen und Produkte (Systems, Applications and Products)</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Adoption Model</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UGC</td>
<td>University Grants Committee in the UK</td>
</tr>
<tr>
<td>UK MAC</td>
<td>U K Management and Administrative Computing (MAC) initiative</td>
</tr>
<tr>
<td>UNSW</td>
<td>University of New South Wales</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>VC</td>
<td>Vice Chancellor</td>
</tr>
<tr>
<td>Y2K</td>
<td>Year 2000</td>
</tr>
</tbody>
</table>
Acknowledgements

I wish to acknowledge the guidance and expertise provided by my research supervisors Emeritus Professor John Dekkers and Dr Bernadette Walker-Gibbs. Without the support and wisdom of both supervisors the research journey would not have reached this destination. I am very appreciative of the dedication and selfless contributions that both supervisors have made to me as a person and to research in general.

Without Emeritus Professor Dekkers’ experience and skills gained in the higher education sector, combined with his extraordinary persistence and diligence as a research supervisor, I would not have reached this goal. Dr Walker-Gibbs has provided a complementary lens through which to understand the nature of research, combined with the provision of the right amount of motivation and encouragement to keep me on task. Most importantly, both John and Bernadette believed in the value of the research that I had undertaken, that I had the capacity to complete this dissertation, and kept me going to the end.

Colleagues who have provided me with research guidance in various forms throughout this long journey include Dr Mark Sinclair, Professor Michael Garbutcheon-Singh, Professor Marie Brennan, Professor David Gadenne and Dr Vivienne Watts. I also need to thank Dr Dave Oliver, Dr Jeanne McConachie, Chelsea Harper and the many generous staff at various universities who consented to be interviewed. It was the staff who inspired me to undertake this research and from whom I learned a great deal. I have an overwhelming respect for staff who lived through the implementations of the ERP Trojan horses. The Trojan horse was a symbol of a coordinated effort in which the warriors all worked together to achieve a seemingly overwhelming task and an ERP implementation seems to me to be analogous to a Trojan horse. Experiencing the war stories of the ‘warrior’ staff while they were venturing into the uncharted territory of building the ERP Trojan horse was a privilege. The staff demonstrated an amazing generosity of spirit with a capacity to give to their institutional communities beyond what was expected of them.

Friends and family have also provided me with immeasurable support and assistance to get the “big essay” done. I am appreciative of Barbara Stubbs for her beautiful formatting, Colin Archard and Sue Smith for generously proofreading and Christina Hunt for her diligence in transcribing the interviews. To Kiah Smith and Rhyl Deardon I am grateful for your response to my pleas for assistance. To my sons David, Nick and Matthew Van Dyke, Valerie and Max Lovell, Michael Walker, my sisters Michelle and Margo, Peter Hallinan and other colleagues who maintained an interest in my “hobby” throughout I am also very appreciative. To my father, John Roots, and my mother, Winsome Joy Archard, who kept me with the end in mind, I am thankful. Finally I am indebted to my husband and muse, Robert Fisher, for his ongoing support while walking beside me throughout this research journey.
Declaration

I declare that the work presented in this dissertation is to the best of my knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted either in whole or part for a degree at this or any other university.

The submission of this dissertation is in partial fulfilment of the requirements of the Doctor of Education at Central Queensland University.

Marilyn Dale Fisher
Rockhampton, Queensland Australia
May 2006