

**Organisational Culture and Customer
Relationship Management (CRM) System
Implementation Outcomes:
An Empirical Investigation**

By

Reiny Iriana

BEC (Hons), MM (IBII), MEc (NUS)

**This thesis is presented for the degree of
Doctor of Philosophy (PhD)**

Macquarie Graduate School of Management

Macquarie University

Sydney, Australia

January 2007

TABLE OF CONTENTS

LIST OF FIGURES	IV
LIST OF TABLES	V
ABSTRACT.....	VIII
STATEMENT OF CANDIDATE	X
ACKNOWLEDGMENTS.....	XI
RELATED PAPERS AND AWARD DURING THIS RESEARCH	XII
1 INTRODUCTION	1
1.1 Overview of Chapter 1	1
1.2 Research Background.....	1
1.3 Research Objectives and Contributions	4
1.4 Structure of the Thesis	5
2 LITERATURE REVIEW	7
2.1 Overview of Chapter 2	7
2.2 CRM Definition and Perspective.....	8
2.2.1 Strategic, Operational and Analytical CRM	12
2.3 CRM Key Success Factors	16
2.3.1 Planning for CRM System Implementation.....	20
2.3.2 CRM System Implementation Issues	28
2.3.3 CRM Key Success Factors from Previous Empirical Studies.....	35
2.3.4 CRM Key Success Factors and Performance.....	41
2.4 Organisational Culture.....	42
2.4.1 Elements of Organisational Culture	44
2.4.2 The Dominant Culture and Sub-Culture	48
2.4.3 Key Features in Assessing Organisational Culture	49
2.4.4 The Management of Organisational Culture	53
2.4.5 Research Framework in Organisational Culture	54
2.4.6 Dimensions of Organisational Culture.....	57
2.4.7 The Difference between Organisational Culture and Climate	64
2.5 Organisational Culture and Effectiveness.....	65
2.5.1 Organisational Culture and Organisational Performance.....	66
2.5.2 Organisational Culture and Technology or System Implementation Outcomes	69
2.5.3 Organisational Culture and Marketing Performance.....	70

	2.6 CRM System Implementation — the Role of Organisational Culture.....	72
3	RESEARCH MODEL	76
	3.1 Overview of Chapter 3	76
	3.2 Research Paradigm.....	77
	3.2.1 Positivism vs Non-Positivism	79
	3.2.2 Qualitative vs. Quantitative Method	81
	3.2.3 The Ontological and Epistemological Positions of This Study.....	82
	3.3 Definition of Variables and Measures of Constructs.....	84
	3.3.1 Organisational Culture Variables.....	85
	3.3.2 CRM Outcomes Metrics	91
	3.3.3 Moderating Variables.....	93
	3.3.4 The Type of CRM Initiative.....	100
	3.4 Research Issues, Questions and Hypotheses.....	107
	3.4.1 Explanation of Research Issues and Hypotheses	110
	3.4.2 Exploratory Studies: Explanation of Research Issues	119
4	RESEARCH METHODOLOGY	123
	4.1 Overview of Chapter 4	123
	4.2 Data Collection Method.....	124
	4.2.1 Justification of Using Survey in This Study.....	124
	4.3 Questionnaire Design.....	125
	4.4 Data Collection Process	127
	4.4.1 Ethics Approval & Pilot Study.....	127
	4.4.2 First Round	128
	4.4.3 Second Round	131
	4.4.4 Final Round.....	131
5	DATA PREPARATION AND MEASUREMENT MODEL.....	134
	5.1 Overview of Chapter 5	134
	5.2 Data Preparation.....	135
	5.2.1 Coding the Data	135
	5.2.2 Missing Data Analysis	136
	5.3 Measurement Model Evaluation	137
	5.3.1 Scree-plot Testing and Reliability of Scales	138
	5.3.2 One-Factor Congeneric Measurement Model	139
	5.4 The Bollen-Stine Bootstrap	162
	5.5 Item Reliability Test	163
	5.6 Factor Score Regression Weight Calculation.....	164

5.7 Validity Test	166
6 DATA ANALYSIS AND RESULTS.....	168
6.1 Overview of Chapter 6	168
6.2 Characteristics of the Study Respondents	168
6.2.1 Characteristics of Organisations Participated in This Study	169
6.2.2 CRM Satisfaction of Organisations Participated in This Study	171
6.3 Research Issues and Hypotheses Testing.....	172
6.3.1 Hypothesis Testing for Research Issues no. 1 and 2	172
6.3.2 Statistical Analysis for Research Issues no. 3 and 4	198
6.4 Research Results Summary	215
7 CONCLUSIONS AND IMPLICATIONS	219
7.1 Overview of Chapter 7	219
7.2 Conclusions from This Study.....	220
7.2.1 Organisational Culture and CRM Outcomes Relationship	220
7.2.2 The Strength of Organisational Culture and CRM Outcomes Relationship.....	227
7.2.3 The Type of CRM Initiative being pursued and CRM Outcomes Relationship.....	231
7.2.4 Summary of Conclusions	231
7.3 Contributions and Implications.....	234
7.3.1 Contributions to Knowledge	235
7.3.2 Implications for Practice and Policy	236
7.4 Limitations and Further Research.....	239
7.4.1 Limitations of This Research	239
7.4.2 Recommendations for Further Research	241
7.4.3 Concluding Remarks.....	242
REFERENCES	243
APPENDICES.....	263

LIST OF FIGURES

Figure 1.1 Outline of chapter 1.....	1
Figure 2.1 Outline of chapter 2.....	7
Figure 2.2 Strategic, Operational and Analytical CRM.....	10
Figure 2.3 CRM implementation framework.....	19
Figure 2.4 CRM success framework developed for this study.....	20
Figure 2.5 Schein's Three Level Model of organisational culture.....	45
Figure 2.6 The Competing Values Model: The OCAI.....	61
Figure 2.7 Organisational culture and effectiveness framework.....	66
Figure 2.8 Research model adopted in this study	74
Figure 3.1 Outline of chapter 3.....	76
Figure 3.2 Proposed Research model.....	84
Figure 3.3 The Competing Values Model: The OCAI.....	85
Figure 3.4 The Balanced Scorecard approach	92
Figure 4.1 Outline of chapter 4.....	123
Figure 5.1 Outline of chapter 5.....	134
Figure 5.2 One-factor congeneric model of Clan culture	140
Figure 5.3 One-factor congeneric model of Adhocracy culture.....	141
Figure 5.4 One-factor congeneric model of Hierarchy culture.....	142
Figure 5.5 One-factor congeneric model of Market culture	144
Figure 5.6 One-factor congeneric model of CRM Financial outcome.....	145
Figure 5.7 One-factor congeneric model of CRM Customer outcome.....	147
Figure 5.8 One-factor congeneric model of CRM Customer outcome after modification	148
Figure 5.9 One-factor congeneric model of CRM Process outcome.....	149
Figure 5.10 One-factor congeneric model of CRM Process outcome after modification	150
Figure 5.11 One-factor congeneric model of CRM People outcome	152
Figure 5.12 One-factor congeneric model of Competitive Intensity.....	154
Figure 5.13 One-factor congeneric model of Competitive Intensity after modification	155
Figure 5.14 One-factor congeneric model of Market Turbulence	156
Figure 5.15 One-factor congeneric model of Strategic CRM.....	157
Figure 5.16 One-factor congeneric model of Strategic CRM after modification	158
Figure 5.17 One-factor congeneric model of Operational CRM	159
Figure 5.18 One-factor congeneric model of Analytical CRM	161
Figure 6.1 Outline of chapter 6.....	168
Figure 6.2 Unstandardised parameter estimates for hypothesis _{1,1}	173
Figure 6.3 Standardised parameter estimates for hypothesis _{1,1}	175
Figure 6.4 Unstandardised parameter estimates for hypothesis _{1,2}	177
Figure 6.5 Standardised parameter estimates for hypothesis _{1,2}	178
Figure 6.6 Unstandardised parameter estimates for hypothesis _{1,3}	180
Figure 6.7 Standardised parameter estimates for hypothesis _{1,3}	181
Figure 6.8 Unstandardised parameter estimates for research question _{3,1}	199
Figure 6.9 Standardised parameter estimates for research question _{3,1}	201
Figure 6.10 Unstandardised parameter estimates for research question _{3,2}	204
Figure 6.11 Standardised parameter estimates for research question _{3,2}	206
Figure 6.12 Unstandardised parameter estimates for research question _{3,3}	208
Figure 6.13 Standardised parameter estimates for research question _{3,3}	210
Figure 6.14 Unstandardised parameter estimates for research question _{4,1}	212
Figure 6.15 Standardised parameter estimates for research question _{4,1}	214
Figure 7.1 Outline of chapter 7.....	219
Figure 7.2 The Competing Values Model: The OCAI.....	220

LIST OF TABLES

Table 2.1 Selected CRM definitions in the literature	9
Table 2.2 Selected CRM benefits.....	12
Table 2.3 CRM implementation satisfaction/success rates	17
Table 2.4 Impact of key activities for CRM success in Asia Pacific.....	18
Table 2.5 Summary of CRM key success factors from previous empirical studies	37
Table 2.6 Dimensions of organisational culture (Reynolds).....	50
Table 2.7 Dimensions of organisational culture found in the literature (Detert et al.).....	51
Table 2.8 OCI cultural styles.....	58
Table 2.9 The 10 dimensions of the OCP.....	63
Table 2.10 Summary of organisational culture dimensions as predictors of CRM performance in the literature	73
Table 3.1 Burrell and Morgan's paradigms.....	78
Table 3.2 Positivism vs Non-Positivism.....	81
Table 3.3 Qualitative vs. quantitative research.....	82
Table 3.4 The four major organisational culture types of OCAI	87
Table 3.5 Reliability results of the OCAI from previous studies.....	88
Table 3.6 Organisational culture types and measures.....	90
Table 3.7 CRM outcomes metrics and type of measure	93
Table 3.8 Innovative characteristics measures.....	98
Table 3.9 Environmental characteristics measures	100
Table 3.10 Exploratory Factor Analysis: Factor loadings for 7-factor solution	103
Table 3.11 Exploratory Factor Analysis: Factor loadings for 3-factor solution	104
Table 3.12 Refined scale and factor loadings for SOA CRM.....	106
Table 3.13 Reliability coefficients for SOA CRM.....	107
Table 3.14 Research hypotheses for research issue 1 and 2	108
Table 3.15 Research questions for research issue 3 and 4.....	109
Table 4.1 Sample proportions by industry	129
Table 4.2 Survey response rate.....	133
Table 5.1 Legend to the labelling of 20 latent variables	135
Table 5.2 Reliability of the original scales.....	139
Table 5.3 Model fit summary for Clan culture	140
Table 5.4 Model fit summary for Adhocracy culture.....	141
Table 5.5 Model fit summary for Hierarchy culture	143
Table 5.6 Model fit summary for Market culture.....	144
Table 5.7 Correlations between CRM Financial outcome items	146
Table 5.8 Model fit summary for CRM Customer outcome	147
Table 5.9 Model fit summary for CRM Customer outcome after modification.....	148
Table 5.10 Model fit summary for CRM Process outcome	150
Table 5.11 Model fit summary for CRM Process outcome after modification	151
Table 5.12 Model fit summary for CRM People outcome.....	152
Table 5.13 Correlations between CRM Innovative characteristic variables.....	153
Table 5.14 Model fit summary for Competitive Intensity	154
Table 5.15 Model fit summary for Competitive Intensity after modification	155
Table 5.16 Model fit summary for Market Turbulence	156
Table 5.17 Model fit summary for Strategic CRM.....	158
Table 5.18 Model fit summary for Strategic CRM after modification	159
Table 5.19 Model fit summary for Operational CRM.....	160
Table 5.20 Model fit summary for Analytical CRM.....	161
Table 5.21 Descriptive statistics and Boolean-Stine bootstrap p values	162
Table 5.22 Item reliability (SMCs).....	164
Table 5.23 Factor score regression weights	165
Table 6.1 Frequency table of the respondents by industry	169
Table 6.2 Frequency table of the respondents' profile	170
Table 6.3 CRM satisfaction survey results	171
Table 6.4 Model fit summary for hypothesis _{1,1}	173
Table 6.5 Regression weights for hypothesis _{1,1}	176
Table 6.6 Model fit summary for hypothesis _{1,2}	177

Table 6.7 Regression weights for hypothesis _{1,2}	179
Table 6.8 Model fit summary for hypothesis _{1,3}	180
Table 6.9 Regression weights for hypothesis _{1,3}	181
Table 6.10 Model summary for Ease of use as a quasi moderator between organisational culture types and CRM outcomes.....	182
Table 6.11 Model summary for Ease of use as a pure moderator between organisational culture types and CRM outcomes.....	183
Table 6.12 Model summary for Ease of use as a quasi moderator between External and Internal culture orientations and CRM outcomes	183
Table 6.13 Model summary for Ease of use as a pure moderator between External and Internal culture orientations and CRM outcomes	184
Table 6.14 Model summary for Ease of use as a quasi moderator between Flexible and Control culture orientations and CRM outcomes	185
Table 6.15 Model summary for Ease of use as a pure moderator between Flexible and Control culture orientations and CRM outcomes	185
Table 6.16 Model summary for Technical Compatibility as a quasi moderator between organisational culture types and CRM outcomes	186
Table 6.17 Model summary for Technical Compatibility as a pure moderator between organisational culture types and CRM outcomes	187
Table 6.18 Model summary for Technical Compatibility as a quasi moderator between External and Internal culture orientations and CRM outcomes	187
Table 6.19 Model summary for Technical Compatibility as a pure moderator between External and Internal culture orientations and CRM outcomes	188
Table 6.20 Model summary for Technical Compatibility as a quasi moderator between Flexible and Control culture orientations and CRM outcomes	188
Table 6.21 Model summary for Technical Compatibility as a pure moderator between Flexible and Control culture orientations and CRM outcomes	189
Table 6.22 Model summary for Competitive Intensity as a quasi moderator between organisational culture types and CRM outcomes.....	190
Table 6.23 Model summary for Competitive Intensity as a pure moderator between organisational culture types and CRM outcomes.....	190
Table 6.24 Model summary for Competitive Intensity as a quasi moderator between External and Internal culture orientations and CRM outcomes	191
Table 6.25 Model summary for Competitive Intensity as a pure moderator between External and Internal culture orientations and CRM outcomes	192
Table 6.26 Model summary for Competitive Intensity as a quasi moderator between Control and Flexible culture orientations and CRM outcomes.....	192
Table 6.27 Model summary for Competitive Intensity as a pure moderator between Control and Flexible culture orientations and CRM outcomes.....	193
Table 6.28 Model summary for Market Turbulence as a quasi moderator between organisational culture types and CRM outcomes.....	193
Table 6.29 Model summary for Market Turbulence as a pure moderator between organisational culture types and CRM outcomes.....	194
Table 6.30 Regression results for Market Turbulence as a pure moderator between organisational culture types and CRM outcomes.....	195
Table 6.31 Model summary for Market Turbulence as a quasi moderator between External and Internal culture orientations and CRM outcomes	195
Table 6.32 Model summary for Market Turbulence as a pure moderator between External and Internal culture orientations and CRM outcomes	196
Table 6.33 Regression results for Market Turbulence as a pure moderator between External and Internal culture orientations and CRM outcomes	196
Table 6.34 Model summary for Market Turbulence as a quasi moderator between Flexible and Control culture orientations and CRM outcomes.....	197
Table 6.35 Model summary for Market Turbulence as a pure moderator between Flexible and Control culture orientations and CRM outcomes.....	198
Table 6.36 Regression weights for research question _{3,1}	203
Table 6.37 Regression weights for research question _{3,2}	207
Table 6.38 Regression weights for research question _{3,3}	211
Table 6.39 Model fit summary for research question _{4,1}	213
Table 6.40 Regression weights for research question _{4,1}	215

Table 6.41 Summary of hypotheses testing results215
Table 6.42 Summary of research findings217
Table 7.1 Summary of conclusions232

ABSTRACT

Using data collected from a sample of organisations implementing Customer Relationship Management (CRM) system, this study examines whether and how organisational culture is associated with the outcomes of CRM system implementations. This study also considers whether those outcomes are moderated by several additional variables: the perceived ease of using the CRM system, the compatibility of the CRM system with existing systems, competitive intensity, and market turbulence. This study also tests if the type of CRM initiative - Strategic, Operational or Analytical CRM - has any bearing upon CRM system implementation outcomes.

Multiple item scales are adapted or created from a wide range of sources in the literature to measure managers' perceptions of organisational culture (as defined by the Competing Values Model), implementation outcomes (measured by the CRM balanced scorecard), and the moderator variables. Structural Equation Modelling (SEM) is used to analyse the reliability and validity of the data and path analysis and multiple regressions are used to determine the relationships between variables.

The results suggest several organisational culture characteristics that are significantly related to good CRM system implementation outcomes. Among the four types of culture identified by the Competing Values Model, Adhocracy culture has the highest association with good CRM system implementation outcomes. Characteristics of the Adhocracy culture are innovation, adaptability, external support, and growth. A balanced culture comprising elements of both Adhocracy culture and Clan culture (that is a flexible culture orientation) is more strongly associated with good CRM system implementation outcomes than its opposite, control culture orientation. Similarly, a balanced culture comprising elements of Adhocracy culture and Market culture (that is an external culture orientation) is more strongly associated with good CRM system implementation outcomes than the opposite, internal culture orientation.

This study discovers that only one of the assessed variables, market turbulence, moderates the strength of the relationship between organisational culture and CRM outcomes. Perceived ease of use, technical compatibility and competitive intensity do

not moderate this relationship. Finally, this study also identifies that the type of CRM initiative being pursued is not associated with variance in CRM system implementation outcomes.

This study concludes that organisational culture is an important factor for achieving good CRM system implementation outcomes, and that having an organisational culture conducive to the implementation of CRM system is more important for organisations that operate in highly turbulent markets than organisations that operate in low market turbulence.

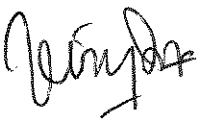
STATEMENT OF CANDIDATE

This thesis is submitted in fulfilment of the requirements of the degree of PhD, in the Graduate School of Management, Macquarie University. This represents the original work and contribution of the author, except as acknowledged by general and specific references.

Ethics committee approval has been obtained for this thesis on 25 February 2005, with reference no: HE25FEB2005-D03826C.

I hereby certify that this has not been submitted for a higher degree to any other university or institution.

Signed:



Reiny Iriana

15 January 2007

ACKNOWLEDGMENTS

I would like to express my gratitude to those who have contributed to my journey for the past three years and supported me during my study at Macquarie Graduate School of Management (MGSM). Without their support, the completion of this dissertation will not be possible.

My first gratitude is to Macquarie University, Australia, for the financial support during the past three years through International Macquarie University Research Scholarship (IMURS). This scholarship allows me to come to Sydney and focus my energies on my study.

Special appreciation goes to my supervisor, Professor Francis Buttle, for his guidance, help, valuable inputs and understanding during my dissertation preparation.

My appreciations also go to Professor Ernest Jordan, Dr Lawrence Ang, Dr Everarda Cunningham and Kelly Callaghan, for their support and assistance during my study.

Thanks to friends at MGSM and Legion of Mary, and to all my good friends in Sydney, Singapore and Jakarta to whom I can not name one by one, for their great friendship.

I extend my special thanks to my beloved family, especially to my mum, for always supporting me in whatever I decided to do.

Last but certainly not least, thanks and praise to God who cares for me every single day.

RELATED PAPERS AND AWARD DURING THIS RESEARCH

1. Refereed Journal Paper

- Iriana, R. & Buttle, F. (2006). Strategic, operational and analytical customer relationship management: Attributes and measures. *Journal of Relationship Marketing*, Vol. 5(4)
- Iriana, R. & Buttle, F. (2006). Customer relationship management system implementations: The role of organisational culture. *International Journal of Knowledge, Culture and Change Management*, Vol. 6(2), pp. 137-148.
- Buttle, F., Ang, L. and Iriana, R. (2006). Sales force automation: review, critique, research agenda. *International Journal of Management Reviews*, Vol. 8(4), pp. 213-231

2. Refereed Conference Papers

- Buttle, F., Ang, L. and Iriana, R. (2006). *Sales force automation: A review of research*. ANZMAC Conference, Brisbane, Queensland, Australia.
- Iriana, R. & Buttle, F. (2006). *Customer relationship management system implementations: The role of organisational culture*. Paper presented at the 6th International Conference on Knowledge, Culture and Change in Organisations, Prato, Tuscany, Italy.
- Iriana, R. & Buttle, F. (2004). *The impact of people and organisational culture on customer relationship management outcomes*. Proceeding of the Academy of Marketing Conference, Cheltenham, UK.

3. Working Papers

- Iriana, R. & Buttle, F. (2007). The impact of organizational culture on customer relationship management outcomes. *Journal of Marketing*. (under second review)

4. Non-Refereed Conference/Doctoral Consortium Papers

- Iriana, R. (2006). *The impact of organisational culture on the outcomes of Customer Relationship Management (CRM) system implementations*. Paper accepted for presentation at the Academy of Marketing Science (AMS) Doctoral Consortium, San Antonio, Texas, USA.
- Iriana, R. (2004). *The impact of organisational culture on the outcomes of Customer Relationship Management (CRM) implementation*. Paper presented at the Australian and New Zealand Marketing Academy (ANZMAC) Doctoral Colloquium, Wellington, NZ.
- Iriana, R. & Buttle, F. (2004). *The impact of people and organisational culture on C.R.M. outcomes*. Proceeding of the 5th Continuous Innovation Network (CINet) Conference, Sydney, NSW, Australia.

5. Award

- Iriana, R. (2005). *The Impact of Organisational Culture on the Outcomes of Customer Relationship Management (CRM) system implementations*. Research proposal submitted to SMA (Society for Marketing Advances) Doctoral Dissertation and awarded as 'Outstanding Dissertation Proposal 2005'.