

APPENDICES

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Appendix 1 Culture dimensions as predictors of effectiveness (from previous empirical studies)

	Organisation or Business Performance										IT implementation success				Marketing Effectiveness		
Authors	Denison (1984)	Calori and Samin (1991)	Gordon and Tomaso (1992)	Marcoulides and Heck (1993)	Denison and Mishra (1995)	Petty et al. (1995)	Christensen and Gordon (1999)	Sorensen (2002)	Xenikou and Simosi (2006)	Stock and Mc Dermott (2000)	Ruppel and Harrington (2000)	Harper and Utley (2001)	Doherty and Doig (2003)	Park et al. (2004)	Leisen (2002)	Moorman (1995)	
Dimensions																	
Participation/ involvement/ participative decision making/ working closely	x				x							x		x			
Well organised working environment/ workplace safety	x			x													
Listening/ communications		x					x										
Personal fulfillment/ people orientation		x					x										
Team spirit/ team work/team orientation/team oriented work		x				x	x					x		x			
Trust / credibility		x				x							x	x	x		
Openness/open communications		x										x					
Adaptation/ adaptability/ flexibility		x			x				x			x	x				
Anticipation/ rapid response/ planning		x		x			x							x			
Consistency/ fairness		x			x									x			

Authors	Organisation or Business Performance										IT implementation success					Marketing Effectiveness		
	Denison (1984)	Calori and Sarnin (1991)	Gordon and Di Tomaso (1992)	Marcoulides and Heck (1993)	Denison and Mishra (1995)	Petty et al. (1995)	Christensen and Gordon (1999)	Sorensen (2002)	Xenikou and Simosi (2006)	Stock and Mc Dermott (2000)	Ruppel and Harrington (2000)	Harper and Urley (2001)	Doherty and Doig (2003)	Park et al. (2004)	Leisen (2002)	Moorman (1995)		
Dimensions																		
Action orientation/ aggressiveness/ confrontation			x				x											
Results orientation /mission/ performance and common goals		x			x	x	x		x									
Innovation/ risk taking			x	x			x			x								
Productivity/ efficiency/ quality		x		x														
Culture strength								x										
Policies & procedures/ control										x						x		
Information management/ sharing information										x		x						
External orientation/ customer focus											x			x		x		
Integration/ empowerment/ entrepreneurship/ autonomy		x											x	x				
Commitment / responsibility		x													x			

Source: developed for this study

Appendix 2 Balanced Scorecards metrics - for CRM

	Metrics	Sources
Financial		
Business Performance	Return on Assets Return on Capital Employed Operating Profit Margin Net Margin Return on Equity per Share Return on Net Fixed Assets	Woodcock, Ekinci, & Stone (2004)
Market Performance	Market size (\$) Unit volume trend (percentage) Market share (volume) (percentage) Market share (value) (percentage) Market share by segment (percentage) Market trend (percentage) Sales by major brand (value) (\$) Major brand sales trends (value) (percentage) Relative price levels and trends Split of sales by channel (value) (percentage)	Davidson (1999)
Customer Profitability	Customer/segment profitability Cost to develop customer Cost to retain customer Cost to serve Cost to sell	Barwise & Farley (2004) Kennedy (2004) Agrawal (2003)
<i>Marketing operation</i>	Customer acquisition costs Average Customer Interaction cost	Agrawal (2003) Kellen (2002)
<i>Sales force operation</i>	Share of wallet Number or percent of sales lost Sales total Net Sales Sales (at individual level)	Plouffe et al. (2004) Kellen (2002) Kim, Suh, & Hwang (2003) Aspinall, Nancarrow, & Stone (2001)
Customers		
<i>Relationship Retention</i>	Customer satisfaction Number of customers Number of active customers Frequency of customer purchase Recency of buying Number of retained customers	Kim et al. (2003) Aspinall et al (2001) Kim et al. (2003)
<i>Loyalty</i>	Retention Rate Defection Rate Customer life duration	Reichheld (1994)
<i>Marketing operation</i>	Reach Response rate RFM (Recency+Frequency+ Monetary Value) Attrition, churn Average order size Category involvement	
<i>Sales force operation</i>	Number of customers acquisition	Kim et al. (2003)

	Metrics	Sources
	Customers acquisition from referrals Customer penetration (up-sells rate) Customer win-backs (percentage)	Brewton (2002)
Internal/Process		
Effectiveness		
<i>Marketing Operation</i>	Number of leads Number of qualified leads Number of marketing campaign Total cost for promotion	Brewton (2002) Kim et al. (2003)
<i>Service Centre Operations</i>	Calls abandonment rate Block calls Service levels (percentage) Number of customer complaints First contact resolution (percentage) Escalation rate (percentage) Customer highly satisfied (percentage)	Kellen (2002) Brewton (2002)
<i>Sales Force Operations</i>	Sales quota Conversion rate Number of calls to customers Close rate Cross-sell rate	Kellen (2002) Plouffe, Williams & Leigh (2004)
Timeliness		
<i>Field Service Operations</i>	Completion time (to resolve customer problem) Repair fulfilment time Response (to customer inquiry)	Kellen (2002) Kim et al. (2003)
<i>Supply chain and Logistics Operations</i>	Customer order cycle time On-time ship rate Performance to promise (to ship order) Average delivery time after order fulfilment	Kellen (2002) Kim et al. (2003)
<i>Service Centre Operations</i>	Calls average hold time Calls average abandonment time	Kellen (2002)
Efficiency		
<i>Supply chain and Logistics Operations</i>	Backorders Fill rate	Kellen (2002)
<i>Sales Force Operations</i>	Sales expense savings Cost per conversion	Gartner (2002) Brewton (2002)
<i>Marketing Operation</i>	Cost per leads	Brewton (2002)
People		
Development and Competency	Employee turnover (percentage) Employee satisfaction level (percentage) Training as percent of sales percent Trained in Customer Vision skills Employee highly satisfied (percentage) Employee highly likely to stay (percentage) Employee retention (percentage) Employee recommend company as place to work Employee productivity (percentage) Net Sales/employee	Davidson (1999) Gartner (2002) Brewton (2002) Kim et al. (2003)

Appendix 3 The type of CRM initiative: The initial pool of scale items

Construct	Measurement Items
Strategic CRM	<p>S7. An important objective of our CRM program is to enhance the lifetime value of our customers</p> <p>S14. An important objective of our CRM program is to improve our understanding of customer needs, expectations and preferences</p> <p>S19. An important objective of our CRM program is to lift customer satisfaction and retention levels</p> <p>S20. CRM provides the basis of our competitive advantage</p> <p>S21. Our CRM strategy aims to win and keep carefully chosen customers or customer segments</p> <p>S22. Our CRM strategy creates mutual benefits for both customers and company</p> <p>S26. Our company is using CRM to create a customer-focused business culture</p> <p>S28. Our company is using CRM to ensure that all our people understand which customers we want to serve</p> <p>S29. Our company is using CRM to help us be more customer focused than our competitors</p> <p>S30. Our company is using CRM to find better ways of offering customers more value</p>
Operational CRM	<p>O4. An important objective of our CRM program is to enable us to adapt our offer to suit different customers' requirements</p> <p>O6. An important objective of our CRM program is to enable us to select the most appropriate communication channels for interactions with customers</p> <p>O9. An important objective of our CRM program is to help our marketing people run more effective and efficient campaigns</p> <p>O10. An important objective of our CRM program is to help our sales people to have more effective and efficient interactions with customers</p> <p>O11. An important objective of our CRM program is to improve collaboration with our customers and channel partners</p> <p>O15. An important objective of our CRM program is to improve the productivity of our sales people</p> <p>O16. An important objective of our CRM program is to reduce the cost of our customer-facing operations</p> <p>O18. An important objective of our CRM program is to deliver consistent customer experience across all customer touch points and channels</p> <p>O23. Our company uses CRM to automate customer service processes to make them more efficient and effective</p> <p>O24. Our company uses CRM to automate marketing processes to make them more efficient and effective</p> <p>O25. Our company uses CRM to automate selling processes to make them more efficient and effective</p>
Analytical CRM	<p>A1. An important objective of our CRM program is to create a comprehensive customer-related database</p> <p>A2. An important objective of our CRM program is to deliver customer data to our people at the right time so that they can cross-sell and up-sell customers more effectively</p> <p>A3. An important objective of our CRM program is to deliver customer data to our front line staff so that they can sell, market and service our customers</p> <p>A5. An important objective of our CRM program is to enable us to conduct intelligent analyses of customer data to guide our marketing and sales efforts</p> <p>A8. An important objective of our CRM program is to ensure that analysis of customer-related data underpins all our customer interactions</p> <p>A12. An important objective of our CRM program is to improve our ability to conduct real time analysis of data when interacting with customers</p> <p>A13. An important objective of our CRM program is to improve our forecasting capabilities</p> <p>A17. An important part of our CRM program is the use of analytical tools to make sense of, and profit from, customer data</p> <p>A27. Our company is using CRM to enable us to obtain competitive advantage from customer data</p> <p>A31. Our company uses CRM to help us identify high value customers</p> <p>A32. Our company uses customer information to construct customer profiles which are used to improve the consistency of the customer's experience</p>

Macquarie Graduate School of Management (MGSM)
CRM Survey 2005-2006

Section 1

In this section, questions are asked about **your organisation**. Please tick the most appropriate response.

a. Your organisation is:

- ☐ Public Sector (government sector or controlled by government sector)
☐ Private Sector (all other sectors)

b. In what kind of industry does your organisation predominantly operate? (Tick one box only)

- ☐ Agriculture, Forestry and Fishing
☐ Mining
☐ Manufacturing
☐ Electricity, Gas and Water Supply
☐ Construction
☐ Wholesale Trade
☐ Retail Trade
☐ Accommodation, Cafes and Restaurants
☐ Transport and Storage
☐ Communication Services
☐ Finance and Insurance
☐ Property and Business Services
☐ Government Administration and Defence
☐ Education
☐ Health and Community Services
☐ Cultural and Recreational Services
☐ Personal and Other Services

c. Approximately how many full time equivalent employees (FTE) does your organisation have at present?

- ☐ 1 to 19
☐ 20 to 199
☐ 200 or more

d. Please indicate your organisation's annual revenue in 2004.

- ☐ Less than A\$50 million
☐ Between A\$50 million and A\$99 million
☐ Between A\$100 million and A\$499 million
☐ Above A\$500 million

In section 2 to 4, questions are asked about how your organisation's performance has been influenced by the implementation of CRM systems in its operations in Australia. The CRM system is the software that your organisation is using to help manage customer relationships. If your organisation has a CRM system in place, please fill in the questions below. If your organisation does not have a CRM system, please fill in the last section only (section 6 on the last page).

Section 2

In this section, questions are asked about **CRM system implementation** in your organisation. By "CRM system" we mean the software that is used to help manage customer relationships.

a. When did your organisation first begin using its CRM system?

- ☐ 2004 - 2005
☐ 2002 - 2003
☐ 2000 - 2001
☐ before 2000

b. Approximately how many employees are using the CRM system at present?

- ☐ 1 to 9
☐ 10 to 49
☐ 50 to 99
☐ 100 to 199
☐ 200 or more

In the next sections, please circling a number on the scale of 1 to 7

*1 = Strongly Disagree 2 = Disagree 3 = Tend to Disagree 4 = Neither Agree nor Disagree
 5 = Tend to Agree 6 = Agree 7 = Strongly Agree*

If you do not know the answer, or if the question is not applicable, please circle '0'.

c. Please think about **the objectives of CRM system implementation** in your organisation. Please circle a position on the scale that best fits your opinion.

Statements	Strongly Disagree					Strongly Agree		N/A D/K
1. An important objective of our CRM system implementation is to create a comprehensive customer-related database	1	2	3	4	5	6	7	0
2. An important objective of our CRM system implementation is to lift customer satisfaction and retention levels	1	2	3	4	5	6	7	0
3. An important objective of our CRM system implementation is to deliver customer data to our people at the right time so that they can cross-sell and up-sell customers	1	2	3	4	5	6	7	0
4. An important objective of our CRM system implementation is to enable us to conduct intelligent analyses of customer data to guide our marketing and sales efforts	1	2	3	4	5	6	7	0
5. An important objective of our CRM system implementation is to improve the productivity of our sales people	1	2	3	4	5	6	7	0
6. An important objective of our CRM system implementation is to deliver customer data to our front line staff so that they can sell, market and service our customers more effectively	1	2	3	4	5	6	7	0
7. An important objective of our CRM system implementation is to reduce the cost of our customer-facing operations	1	2	3	4	5	6	7	0
8. Our CRM system implementation aims to win and keep carefully chosen customers or customer segments	1	2	3	4	5	6	7	0

Statements	Strongly Disagree					Strongly Agree		N/A D/K
9. Our organisation uses the CRM system to automate customer service processes to make them more efficient and effective	1	2	3	4	5	6	7	0
10. Our organisation uses the CRM system to help us identify high value customers	1	2	3	4	5	6	7	0
11. Our organisation uses the CRM system to automate marketing processes to make them more efficient and effective	1	2	3	4	5	6	7	0
12. Our organisation uses the CRM system to ensure that all our people understand which customers we want to serve	1	2	3	4	5	6	7	0
13. Our organisation uses the CRM system to automate selling processes to make them more efficient and effective	1	2	3	4	5	6	7	0
14. Our organisation uses customer information to construct customer profiles which are used to improve the consistency of the customer's experience	1	2	3	4	5	6	7	0

d. Please consider the technological characteristics of the CRM system in your organisation. Please respond by circling the number which most accurately reflects your perceptions.

Statements	Strongly Disagree					Strongly Agree		N/A D/K
1. The CRM system is compatible with legacy system software	1	2	3	4	5	6	7	0
2. The CRM system is compatible with legacy system hardware	1	2	3	4	5	6	7	0
3. Our employees have a clear understanding of how to interact with the CRM system	1	2	3	4	5	6	7	0
4. It is easy for our employees to get the CRM system to do what they want it to do	1	2	3	4	5	6	7	0

Section 3

In this section, questions are asked about what it is like working in your organisation. Please indicate the extent of your agreement or disagreement with the following statements as they apply in your organisation.

Statements	Strongly Disagree					Strongly Agree		N/A D/K
1. The work process is coordinated and under control	1	2	3	4	5	6	7	0
2. Participative decision making is widely and appropriately employed	1	2	3	4	5	6	7	0
3. Rules, procedures and formal methods guide the work	1	2	3	4	5	6	7	0
4. The goals are clearly understood by most members	1	2	3	4	5	6	7	0
5. The work effort is usually intense	1	2	3	4	5	6	7	0
6. There is a stable, predictable work environment	1	2	3	4	5	6	7	0
7. Innovation is stressed	1	2	3	4	5	6	7	0
8. There is a positive interpersonal climate	1	2	3	4	5	6	7	0
9. Quantification and measurement are key parts of the work climate	1	2	3	4	5	6	7	0

Statements	Strongly Disagree				Strongly Agree				N/A D/K
10. Consensual decision making is encouraged	1	2	3	4	5	6	7		0
11. Outsiders perceive it as a vibrant high potential organisation	1	2	3	4	5	6	7		0
12. Creative insights, hunches and innovative ideas are stressed	1	2	3	4	5	6	7		0
13. It is easy to explain the overall objectives of the organisation	1	2	3	4	5	6	7		0
14. There is a constant striving for greater accomplishment	1	2	3	4	5	6	7		0
15. Employees feel as though they really belong to the organisation	1	2	3	4	5	6	7		0
16. Organisation has the image of a growing, dynamic system	1	2	3	4	5	6	7		0

Section 4

In this section, questions are asked about the performance of your organisation in FY2004. Compared to your organisation's performance before implementing the CRM system, how would you describe your organisation's performance at the end of FY2004?

For question no. 1 to 14, please circle a number from 1 to 7.

1 = Much Lower 2 = Lower 3 = Slightly Lower 4 = Same
5 = Higher 6 = Slightly Higher 7 = Much Higher

If you do not know the answer, or if the question is not applicable, please circle '0'.

Performance Indicators	Much Lower				Much Higher				N/A D/K
1. Average revenue per customer	1	2	3	4	5	6	7		0
2. Share of customer wallet (share of customer's total spending on the category)	1	2	3	4	5	6	7		0
3. Average profit per customer	1	2	3	4	5	6	7		0
4. Customer acquisition cost	1	2	3	4	5	6	7		0
5. Number of new customers acquired	1	2	3	4	5	6	7		0
6. Customer satisfaction level	1	2	3	4	5	6	7		0
7. Response rates to marketing campaigns	1	2	3	4	5	6	7		0
8. Number of retained customers	1	2	3	4	5	6	7		0
9. Number of sales leads generated	1	2	3	4	5	6	7		0
10. % of sales leads that convert to sales	1	2	3	4	5	6	7		0
11. Employee satisfaction level	1	2	3	4	5	6	7		0
12. Employee productivity level	1	2	3	4	5	6	7		0
13. Employee retention rate	1	2	3	4	5	6	7		0
14. % of employees trained in customer relationship skills	1	2	3	4	5	6	7		0

For question no. 15 & 16, please circle a number from 1 to 7.

1 = Much Slower 2 = Slower 3 = Slightly Slower 4 = Same

5 = Faster 6 = Slightly Faster 7 = Much Faster

If you do not know the answer, or if the question is not applicable, please circle '0'.

Performance Indicators	Much Slower				Much Faster				N/A D/K
15. Response time to resolution of customer complaints	1	2	3	4	5	6	7		0
16. Response time to resolution of customer inquiries	1	2	3	4	5	6	7		0

Overall, how would you rate your satisfaction with CRM performance in your organisation?

Statements	Strongly Disagree				Strongly Agree				N/A D/K
The CRM performance in my organisation is satisfactory	1	2	3	4	5	6	7		0

Section 5

In this section, questions are asked about the market conditions affecting your organisation's performance. Please consider the characteristics of the market in which your organisation operates. Please indicate the extent of your agreement or disagreement with the following statements

Statements	Strongly Disagree				Strongly Agree				N/A D/K
1. Competition in our industry is cut-throat	1	2	3	4	5	6	7		0
2. There are many "promotion wars" in our industry	1	2	3	4	5	6	7		0
3. Anything that one competitor can offer, others can match readily	1	2	3	4	5	6	7		0
4. Price competition is a hallmark in our industry	1	2	3	4	5	6	7		0
5. One hears of a new competitive move almost every day	1	2	3	4	5	6	7		0
6. Our competitors are relatively weak	1	2	3	4	5	6	7		0
7. In our kind of business, customers' product and/or service preferences change quite a bit over time	1	2	3	4	5	6	7		0
8. Our customers tend to look for new product and/or service all the time	1	2	3	4	5	6	7		0
9. Sometimes our customers are very price sensitive, but on other occasions, price is relatively unimportant	1	2	3	4	5	6	7		0
10. We are witnessing demand for our products and/or services from customers who never bought them before	1	2	3	4	5	6	7		0
11. New customers tend to have product or service-related needs that are different from those of our existing customers	1	2	3	4	5	6	7		0
12. We cater to many of the same customers that we used to in the past	1	2	3	4	5	6	7		0

Section 6

Your answer to this last section of the survey will allow us to classify and analyse groups of respondents. Please provide the following information:

a. What is your position level in the organisation?

- ☐ Non Management
- ☐ Junior Management
- ☐ Middle Management
- ☐ Senior Management
- ☐ CEO/Managing Director

b. How long have you been with the organisation?

- ☐ Less than 1 year
- ☐ 1 to 2 years
- ☐ 3 to 4 years
- ☐ 5 years or more

c. What is your age?

- ☐ Less than 25
- ☐ 25 to 44
- ☐ 45 or more

If you would like to know the result of this study or to be involved in our future research, please provide your contact details:

Name	:	_____
Organisation	:	_____
Address	:	_____
Phone no.	:	_____ Fax no.:
Email	:	_____

**Thank you for completing this survey.
Your input is very much appreciated.**

Now, please return the survey by mail:

Put the questionnaire in the reply paid envelope and mail to us

Invitation to Participate in MGSM CRM Survey



April 2005

Dear _____,

Surveys show that many CRM system implementations fail to produce the expected outcomes. This raises an important question: *What are the critical factors that influence CRM performance?*

We invite you to participate in this latest independent study that attempts to answer this question. Specifically we want to find out whether people and organisational culture have any impact on the outcomes of Customer Relationship Management (CRM) system implementations. This research is being conducted to meet the requirements for the degree of PhD in Management, under the supervision of Professor Francis Buttle at Macquarie Graduate School of Management.

In appreciation for your participation, we will send you a free report, summarizing the results of this research, which can be used to benchmark CRM performance in your organisation against national trends.

A copy of the questionnaire will be sent to you in the next few days. The questionnaire should be completed by the executive who has the best understanding of your CRM system; this might be yourself or another person to whom you should redirect this email. The CRM system is the software that your organisation is using to help manage customer relationships.

Please let us know by e-mail if your organisation does not have a CRM system in place, or if you would like us to send the questionnaire to another person or by e-mail.

If you have any concerns or would like to know more about the project, please contact Reiny Iriana, phone no.: 02 9850 9093.

We would like to thank you for your time and effort.

With best regards,

Reiny Iriana
PhD Candidate
Macquarie Graduate School of Management
E-mail: reiny.iriانا@students.mq.edu.au

Professor Francis Buttle
Supervisor
Macquarie Graduate School of Management

The ethical aspects of this study have been approved by the Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (telephone [02] 9850 7854, fax [02] 9850 8799, email: ethics@vc.mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

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MACQUARIE UNIVERSITY
NEW SOUTH WALES

MACQUARIE UNIVERSITY, SYDNEY, AUSTRALIA

Organisational Culture & CRM Performance



April 2005

Dear _____,

Surveys show that many CRM system implementations fail to produce the expected outcomes. This raises an important question: *What are the critical factors that influence CRM performance?*

We invite you to participate in this latest independent study that attempts to answer this question. Specifically we want to find out whether people and organisational culture have any impact on the outcomes of Customer Relationship Management (CRM) system implementations. This research is being conducted to meet the requirements for the degree of PhD in Management, under the supervision of Professor Francis Buttle at Macquarie Graduate School of Management. In appreciation for your participation, we will send you a free report, summarizing the results of this research, which can be used to benchmark CRM performance in your organisation against national trends.

A copy of the confidential questionnaire is attached. Would you please either complete this questionnaire yourself or redirect it to the executive in your organisation with the best understanding of CRM system? The CRM system is the software that your organisation is using to help manage customer relationships.

Participation is entirely voluntary. You can withdraw at any time and there will be no disadvantage if you decide not to complete the survey. All information collected will be confidential and only the researchers will have access to information about participants. All information gathered from the survey will be stored securely and after the information has been analysed and the report has been published, questionnaires will be kept secure for at least 5 years. At no time will any individual be identified in any reports resulting from this study.

Completing this survey will take approximately 20 minutes of your time. After completing the questionnaire, please put the questionnaire in the reply paid envelope and mail to us.

If you have any concerns or would like to know the outcome of this project, please contact Reiny Iriana, phone no.: 02 9850 9093 or Professor Francis Buttle, phone no.: 02 9850 8987

We would like to thank you for your time and effort in completing this questionnaire.

With regards,

A handwritten signature in dark ink, appearing to read 'Reiny Iriana'.

Reiny Iriana
PhD Candidate
Macquarie Graduate School of Management
Email: reiny.iriانا@students.mq.edu.au

A handwritten signature in dark ink, appearing to read 'Francis Buttle'.

Professor Francis Buttle
Supervisor
Macquarie Graduate School of Management
Email: francis.buttle@mq.edu.au

The ethical aspects of this study have been approved by the Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (telephone [02] 9850 7854, fax [02] 9850 8799, email: ethics@vc.mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

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Fax: _____

Invitation to Participate in MGSM CRM Survey: Organisational Culture & CRM Performance



July 2005

Dear _____,

Surveys show that many CRM system implementations fail to produce the expected outcomes. This raises an important question: *What are the critical factors that influence CRM performance?*

We invite you to participate in this latest independent study that attempts to answer this question. Specifically we want to find out whether people and organisational culture have any impact on the outcomes of Customer Relationship Management (CRM) system implementations. This research is being conducted to meet the requirements for the degree of PhD in Management, under the supervision of Professor Francis Buttie at Macquarie Graduate School of Management. In appreciation for your participation, we will send you a free report, summarizing the results of this research, which can be used to benchmark CRM performance in your organisation against national trends.

A copy of the confidential questionnaire has been sent to you 2 weeks ago. If you have returned the questionnaire, we would like to say thank you for your participation. If not, would you please either complete the questionnaire yourself or redirect it to the executive in your organisation with the best understanding of CRM system? The CRM system is the software that your organisation is using to help manage customer relationships.

Participation is entirely voluntary. You can withdraw at any time and there will be no disadvantage if you decide not to complete the survey. All information collected will be confidential and only the researchers will have access to information about participants. All information gathered from the survey will be stored securely and after the information has been analysed and the report has been published, questionnaires will be kept secure for at least 5 years. At no time will any individual be identified in any reports resulting from this study.

Completing the survey will take approximately 20 minutes of your time. If you would like us to send a copy of the questionnaire by e-mail or if you do not have a CRM system in place, please let us know by e-mail to reiny. triana@students.mq.edu.au

If you have any concerns or would like to know the outcome of this project, please contact Reiny Iriana, phone no.: 02 9850 8998.

We would like to thank you for your time and effort in completing the questionnaire.

With best regards,

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The ethical aspects of this study have been approved by the Macquarie University Ethics Review Committee (Human Research). If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Research Ethics Officer (telephone [02] 9850 7854, fax [02] 9850 8799, email: ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

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Appendix 8 Construct measures and questions used in this study and their assigned code

Construct	Code
Organisational culture	
<i>Hierarchy Culture</i>	HIERARCHY
• The work process is coordinated and under control	CULHI1
• Rules, procedures and formal methods guide the work	CULHI2
• There is a stable, predictable work environment	CULHI3
• Quantification and measurement are key parts of the work climate	CULHI4
<i>Clan Culture</i>	CLAN
• Participative decision making is widely and appropriately employed	CULCL1
• There is a positive interpersonal climate	CULCL2
• Consensual decision making is encouraged	CULCL3
• Employees feel as though they really belong to the organisation	CULCL4
<i>Market Culture</i>	MARKET
• The goals are clearly understood by most members	CULMA1
• The work effort is usually intense	CULMA2
• It is easy to explain the overall objectives of the organisation	CULMA3
• There is a constant striving for greater accomplishment	CULMA4
<i>Adhocracy Culture</i>	ADHOCRACY
• Innovation is stressed	CULAD1
• Outsiders perceive it as a vibrant high potential organisation	CULAD2
• Creative insights, hunches and innovative ideas are stressed	CULAD3
• Organisation has the image of a growing, dynamic system	CULAD4
CRM Outcomes	
<i>Financial</i>	FINANCIAL
• Average revenue per customer	BSFIN1
• Share of customer wallet	BSFIN2
• Average profit per customer	BSFIN3
• Customer acquisition cost (reverse scored item)	BSFIN4
<i>Customer</i>	CUSTOMER
• Customer satisfaction level	BSCUS2
• Response rates to marketing campaigns	BSCUS3
• Number of retained customers	BSCUS4
<i>Process</i>	PROCESS
• Number of sales leads generated	BSPRO1
• % of sales leads that convert to sales	BSPRO2
• Response time to resolution of customer complaints	BSPRO3
• Response time to resolution of customer inquiries	BSPRO4
<i>People</i>	PEOPLE
• Employee satisfaction level	BSPPL1
• Employee productivity level	BSPPL2
• Employee retention rate	BSPPL3
• Percentage of employee trained in customer relationship skills	BSPPL4
Innovative Characteristics of CRM system	
<i>Perceived Ease of Use</i>	EASY
• Our employees have a clear understanding of how to interact with the CRM system	EASCLE
• It is easy for our employees to get the CRM system to do what they want it to do	EASYDO
<i>Technical Compatibility</i>	COMPAT
• The CRM system is compatible with legacy system software	COMSOF
• The CRM system is compatible with legacy system hardware	COMHAR
Environmental Characteristics	

Construct	Code
<i>Competitive Intensity</i>	COMPET
• Competition in our industry is cut-throat	ENVCP1
• There are many "promotion wars" in our industry	ENVCP2
• Anything that one competitor can offer, others can match readily	ENVCP3
• Price competition is a hallmark in our industry	ENVCP4
• One hears of a new competitive move almost every day	ENVCP5
• Our competitors are relatively weak (<i>reverse scored item</i>)	ENVCP6
<i>Market Turbulence</i>	TURBUL
• In our kind of business, customers' product preferences change quite a bit over time	ENVTR1
• Our customers tend to look for new product all the time	ENVTR2
• Sometimes our customers are very price sensitive, but on other occasions, price is relatively unimportant	ENVTR3
• We are witnessing demand for our products and/or services from customers who never bought them before	ENVTR4
• New customers tend to have product or service-related needs that are different from those of our existing customers	ENVTR5
• We cater to many of the same customers that we used to in the past (<i>reverse scored item</i>)	ENVTR6
Type of CRM initiative	
<i>Strategic CRM</i>	
• An important objective of our CRM system implementation is to lift customer satisfaction and retention levels	TYPST1
• Our CRM system implementation aims to win and keep carefully chosen customers or customer segments	TYPST2
• Our organisation uses the CRM system to help us identify high value customers	TYPST3
• Our organisation uses the CRM system to ensure that all our people understand which customers we want to serve	TYPST4
• Our organisation uses customer information to construct customer profiles which are used to improve the consistency of the customer's experience	TYPST5
<i>Operational CRM</i>	
• An important objective of our CRM system implementation is to reduce the cost of our customer-facing operations	TYPOP1
• Our organisation uses the CRM system to automate customer service processes to make them more efficient and effective	TYPOP2
• Our organisation uses the CRM system to automate marketing processes to make them more efficient and effective	TYPOP3
• Our organisation uses the CRM system to automate selling processes to make them more efficient and effective	TYPOP4
<i>Analytical CRM</i>	
• An important objective of our CRM system implementation is to create a comprehensive customer-related database	TYPAN1
• An important objective of our CRM system implementation is to deliver customer data to our people at the right time so that they can cross-sell and up-sell customers	TYPAN2
• An important objective of our CRM system implementation is to enable us to conduct intelligent analyses of customer data to guide our marketing and sales efforts	TYPAN3
• An important objective of our CRM system implementation is to improve the productivity of our sales people	TYPAN4
• An important objective of our CRM system implementation is to deliver customer data to our front line staff so that they can sell, market and service our customers more effectively	TYPAN5

Appendix 9 Statistical Methods

The nature of the data and the research questions and hypotheses being addressed dictate a sequential set of statistical analyses. First, because the data are collected by survey, it is necessary to test the reliability and validity of the data using Structural Equation Modelling (SEM). Next, path analysis in SEM is used to analyse the associations between organisational culture and CRM system implementation outcomes. SEM is also used to perform several multiple regressions simultaneously. Finally, hierarchical multiple regression is used for moderator variables to test differences in associations between variables before and after interaction effects. The following sections explain in detail the statistical methods used in this study. For the statistical equations used in this study, see appendix 10 and for the glossary of statistical terms used in this thesis, see appendix 11.

A. Regression Analysis

Regression analysis is a statistical technique used to analyse the relationship or association between one dependent variable and one or more predictor variables (Kumar, Aaker, & Day, 1999; Malhotra, Hall, Shaw, & Oppenheim, 2002).

Bivariate regression. Bivariate regression or simple linear regression is a statistical technique used to analyse the relationship or association between one dependent variable and a predictor variable (Kumar, Aaker, & Day, 1999; Malhotra, Hall, Shaw, & Oppenheim, 2002).

The basic bivariate regression equation is:

$$Y_i = \beta_0 + \beta_1 X_i + e_i$$

Where

Y_i = a dependent or criterion variable

X_i = an independent or predictor variable

β_0 = the intercept of the line

β_1 = the slope of the line

e_i = error term associated with i th observation

Conducting bivariate regression analysis includes the following steps (Hair Jr, Anderson, Tatham, & Black, 1998):

1. Determine if the relationship exists for the linear relationship between X and Y.

The following hypotheses need to be examined:

$H_0: \beta_1 = 0$, which implies that there is no relationship between X and Y

$H_1: \beta_1 \neq 0$, which implies that there is a positive or negative relationship between X and Y

Using a two-tailed t test, the value of t statistic is computed, with $n-2$ degrees of freedom. If the calculated value of t is larger than the critical value of t obtained from t distribution table, the null hypothesis is rejected at $(1-\alpha)$ confidence level. If the relationship between X and Y is significant, it is meaningful to predict the values of Y from the values of X.

2. Determine the strength of the relationship

The strength of association is measured by the coefficient of determination (r^2). In bivariate regression, r^2 is the square of the correlation coefficient between variable X and Y. The coefficient of determination (r^2) indicates the percentage of the variation in dependent variable is explained by independent variable.

3. Test for the significance of the coefficient of determination (r^2).

The hypotheses are: $H_0: r^2 = 0$ and $H_1: r^2 > 0$

In testing the hypothesis that coefficient of determination or variation explained by the regression model is greater than zero, the F test is used. The F test for testing the significance of r^2 is equivalent to t test for testing the hypotheses at point 1: $H_0: \beta_1 = 0$ and $H_1: \beta_1 \neq 0$. The coefficient of determination (r^2) is influenced by numbers of independent variables relative to the sample size. An absolute minimum of the sample size is four observations per independent variable.

Multiple regressions. Multiple regression is an appropriate method to analyse the relationship between one dependent variable and two or more independent variables or predictors where the objective of performing a regression is to predict the changes in a dependent variable that caused by the increase or decrease in values of independent variables (Hair Jr, Anderson, Tatham, & Black, 1998).

The general form of the multiple regression models is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + e$$

Y = dependent or criterion variable

X_k = the independent or predictor variable

β_0 = the intercept of the line

β_k = the slope of the line for variable k

e = error term

The steps in conducting multiple regressions are similar with bivariate regression.

1. Determine if the relationship exists for the linear relationship between X_k and Y .

The following hypotheses need to be examined:

H_0 : $\beta_1 = \beta_1 = \beta_2 = \beta_3 = \dots = \beta_k = 0$, which implies that there is no relationship between X_k and Y

H_1 : $\beta_1 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \dots \neq \beta_k = 0$, which implies that there is a positive or negative relationship between X_k and Y

2. Determine the strength of the relationship

The strength of association is measured by the coefficient of multiple determinations (R^2). In multiple regressions, R^2 is the square of the correlation coefficient between Y and the expected value of Y .

Several important characteristics of R^2 :

- R^2 must be larger than r^2
- R^2 will be larger when the correlations between independent variables are low.
- R^2 can not decrease as more independent variables are added to the regression equation. If so, the additional independent variables do not contribute much in explaining the variance.

3. Test for the significance of the coefficient of multiple determinations (R^2). The hypotheses are:

H_0 : $R^2 = 0$ and H_1 : $R^2 > 0$

The F test for testing the significance of R^2 is equivalent to testing the hypotheses at point 1:

$$H_0: \beta_1 = \beta_2 = \beta_3 = \dots = \beta_k = 0 \text{ and } H_1: \beta_1 \neq 0 \text{ or } \beta_2 \neq 0 \text{ or } \beta_3 \neq 0 \text{ or } \dots \text{ or } \beta_k \neq 0.$$

Using an F statistic test, the value of F is computed, with k and $(n - k - 1)$ degrees of freedom. If the calculated value of F is larger than the critical value of F obtained from F distribution table, the null hypothesis is rejected at the significance level α . If the null hypothesis is rejected, one or more population partial regression coefficient has a value different from zero. The partial regression coefficient between Y and X_1 represents the expected change in Y when X_1 is changed by one unit when other independent variables are held constant.

4. Testing for the significance of partial regression coefficient for one or more independent variables is similar to the bivariate regression using t tests.

B. Structural Equation Modelling

Structural Equation Modelling (SEM) was introduced to improve conventional analytical techniques such as regression and factor analysis by providing solutions to problems related to those conventional tools (Holmes-Smith, Coote, & Cunningham, 2004). SEM allows researchers to explore relationships among dependent variables. Independent and dependent variables are indicators of a smaller number of a broader construct. In regression, the composite independent or dependent variable is obtained by adding these indicators together. This process assumes that the indicators are measured with equal error and each indicator contributes equally to the composite that may not be true for all cases. SEM allows unequal weightings for the multiple observed variables of a latent construct. In addition, SEM allows the testing of the reliability and construct validity of measures and the testing of the reasonable fit for the system of equations. However, similar to those conventional tools, SEM can not establish that a model is valid or prove causation.

Model-fit indices. This section presents model fit indices in SEM that will be used in this study. A model is considered as a good fit if there is a small difference between the sample variances and covariances, and between the implied variances and covariances (Holmes-Smith, Coote, & Cunningham, 2004).

Hair Jr et al. (1998) suggested several measures of data fit to the model. Chi-square (CMIN) is employed as the basic measure of the overall fit. Chi-square is sensitive to sample size (Cochran, 1952; Gulliksen & Tukey, 1958) and is recommended for sample sizes between 100 and 200. For samples outside this range, this test of fit is less reliable. A relative chi-square or

CMIN/DF ratio is another measure for the model fit that takes account of the sample size. Many researchers recommend a relative chi-square ratio below 5 as an adequate fit between the model and the data (Byrne, 1989; Carmines & McIver, 1981; Wheaton, Muthén, Alwin, & Summers, 1977).

Several additional measures are suggested to complement chi-square such as Jöreskog and Sorbom's Goodness Fit Index (GFI), the Steiger's Root Mean Square Error of Estimation (RMSEA), and other fit measures such as The Comparative Fit Index (CFI), Bollen Relative Fit Index (RFI), Bollen Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and the Bentler-Bonett Normed Fit Index (NFI).

The Goodness of Fit Index (GFI) does not depend on sample size and measures how much better the model fits compared with no model at all (Jöreskog, 1993). The Goodness of Fit Index (GFI) generates a statistic between 0 to 1, where 0 indicates no fit and 1 indicates perfect fit (Jöreskog & Sorbom, 1989).

RMSEA is a measure of discrepancy per degree of freedom (Jöreskog, 1993). For RMSEA, values between 0.05 and 0.08 are recommended to indicate a model fit (Browne & Cudeck, 1993). A value of 0.05 of RMSEA indicates a close fit. The values up to 0.08 indicate reasonable errors of approximation in the population. RMSEA is a better measure for larger samples. A RMSEA greater than 0.10 indicates that the model fit is not acceptable (Browne & Cudeck, 1993).

Incremental fit measures compare the proposed model with the null model. The null model is a realistic model, in which all measured variables are mutually uncorrelated (Marsh, Balla, & Hau, 1996). All other models should be expected to exceed the null model (Hair Jr, Anderson, Tatham, & Black, 1998). The Comparative Fit Index (CFI), Bollen Relative Fit Index (RFI), Bollen Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and the Bentler-Bonett Normed Fit Index (NFI) are measures for the incremental fit. The Comparative Fit Index (CFI) generates a statistic between 0 to 1, where 0 indicates no fit and 1 indicates perfect fit (Bentler, 1990). The recommended level for Tucker-Lewis Index (TLI) and the Bentler-Bonett Normed Fit Index (NFI) is above 0.90 (Bentler & Bonett, 1980). For RFI and IFI, values close to 1 indicate a very good fit (Bollen, 1986, 1989). Table A.1 summarises fit indices used in this study.

Table A.1 Model fit criteria used in this study

Abbreviation	Name	Criteria for Good Fit
CMIN (X^2)	Chi-square	$P \geq 0.05$
RMSEA	The root mean square error of approximation	$RMSEA \leq 0.10$
GFI	The goodness of fit index	≥ 0.90
CFI	The comparative fit Index	≥ 0.90
TLI	Tucker-Lewis Index	$0.90 \leq TLI \leq 1$

Model modification/re-specification. Model modification/re-specification is required when the hypothesised model is inconsistent with the 'true' model, a model that reproduces the sample covariance matrix well (Schumacher & Lomax., 1996).

Several procedures are recommended for model modification/re-specification (Schumacher & Lomax., 1996):

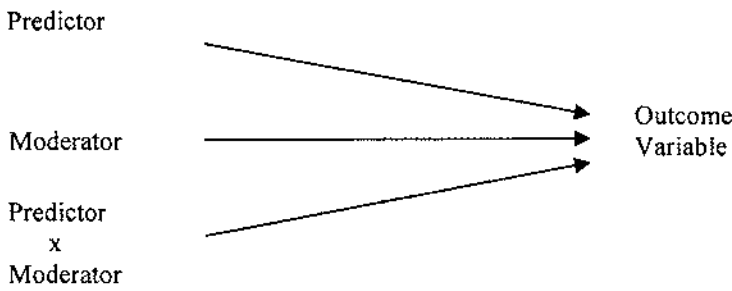
- Examine the statistical significance for each estimated parameter in the hypothesised model.
- Examine the standardised residuals for each variable. Large standardised residuals (> 2.58) indicate misspecification for that variable only.
- Examine modification indices. Each modification index measures how much the chi-square is expected to decrease if one constrained parameter is set free and the model is re-estimated (Jöreskog, 1993). A modification index value greater than 3.84 suggests that the chi-square should be reduced when the corresponding parameter is estimated.

In performing model modification/re-specification, combinations of the above mentioned procedures are recommended. The decision to remove or estimate parameters must be supported by the theoretical sense, the researcher's logic, or past research (Holmes-Smith, Coote, & Cunningham, 2004).

C. Moderator Effect

The moderator effect is the term used when the relationship between independent and dependent variables is affected by another independent variable, the moderator (Hair Jr, Anderson, Tatham, & Black, 1998). Figure A.1 presents the moderator model.

Figure A.1 Moderator model



Source: Baron and Kenny (1986)

The model in figure 4.2 has three paths associated with the outcome variable: the effect of variable as a predictor, as a moderator or as an interaction of these two. A moderator variable is expected to be uncorrelated with the predictor and dependent variables. The moderator and predictor variables function as independent variables (Baron & Kenny, 1986).

The moderated relationship in multiple regressions is represented as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2 + e, \text{ where } \beta_3 X_1 X_2 \text{ is moderator effect of } X_2 \text{ on } X_1.$$

The β_3 coefficient, the moderator effect, indicates a unit change in the effect of X_1 as X_2 changes.

The analysis of differences between the correlation coefficients among the equations is used to test for the moderating effect. Baron and Kenny (1986) recommended hierarchical multiple regression analysis as an appropriate method for determining if an independent variable has a moderating effect on the relationship between dependent-independent variables. Hierarchical multiple regression is only appropriate to test for different forms of relationship and not for different degrees of relationship (Arnold, 1982). The form of relationship is indicated by the coefficients of the regression equation but the degree of the relationship between two variables is measured by the magnitude of the correlation coefficient.

A significant change in the coefficient of determination (r^2) between three equations below indicates that a significant moderator effect is present (Sharma, Durand, & Gur-Arie, 1981):

- Basic equation: $Y = \beta_0 + \beta_1 X_1 + e$

- Multiple regression equation: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

- Moderated regression equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 X_2 + \beta_5 X_1 X_3 + e$$

- If the R^2 change from basic equation to multiple regressions equation is statistically significant and the R^2 change from multiple regressions to moderated regression equation is not statistically significant, variables X_2 and X_3 are *predictor variables* (i.e. $\beta_2 \& \beta_3 \neq 0$; $\beta_4 \& \beta_5 = 0$).
- If the R^2 change from basic equation to multiple regressions equation is not statistically significant and the R^2 change from basic equation to moderated regression equation is statistically significant, variables X_2 and X_3 are *pure moderators*. (i.e. $\beta_2 \& \beta_3 = 0$; $\beta_4 \& \beta_5 \neq 0$).
- If the R^2 change from basic equation to multiple regressions equation is statistically significant, and the R^2 change from multiple regressions to moderated regression equation is also statistically significant, variables X_2 and X_3 are *quasi moderators* (i.e. $\beta_2 \& \beta_3 \neq 0$; $\beta_4 \& \beta_5 \neq 0$).

D. Common Method Bias

When both dependent and predictor variables are obtained from a single source, the research findings could be biased because of the possibility of increased correlations between these variables (Lindell & Whitney, 2001). The following steps are recommended to test if the research findings are affected by the common method bias (Jayachandran, Sharma, Kaufman, & Raman, 2005; Lindell & Whitney, 2001, p. 116):

- Identify an independent variable in the questionnaire that has a small, positive, and insignificant correlation (r_s) with the dependent variable.
- Calculate a partial correlation that shows the association between the dependent variable and other independent variables after controlling for common method bias using the following equation:

$$r_{yim} = \frac{|r_{yim} - r_s|}{[1 - r_s]}$$

Where:

r_{yim} = the adjusted correlation of an independent variable with a dependent variable

r_{yi} = the significant original correlation of an independent variable with a dependent variable

r_s = the insignificant original correlation of an independent variable with a dependent variable

- Compute t value using the following test statistic to identify whether the adjusted correlation (r_{yim}) is significant

$$t_{\alpha/2, N-3} = \frac{r_{yim}}{\left[\frac{(1 - r_{yim}^2)}{(N - 3)} \right]^{1/2}}$$

- If the adjusted correlation (r_{yim}) is still significant, this suggests that the original significant correlation for this independent variable is not due to common method bias.
- If the adjusted correlation (r_{yim}) is not significant, this suggests that the original significant correlation for this independent variable is due to common method bias.

Appendix 10 Statistical equations for each hypothesis and research question

Hypothesis /Question	Equations
H _{1.1}	$\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \varepsilon_1$
H _{1.2}	$\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \varepsilon_2$
H _{1.3}	$\text{OUTCOME} = \beta_{03} + \beta_7\text{FLEXIBLE} + \beta_8\text{CONTROL} + \varepsilon_3$
H _{2.1}	$\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_9\text{EASY} + \varepsilon_4$ $\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_9\text{EASY} + \beta_{21}\text{HIERARCHY} \times \text{EASY} + \beta_{22}\text{CLAN} \times \text{EASY} + \beta_{23}\text{MARKET} \times \text{EASY} + \beta_{24}\text{ADHOCRACY} \times \text{EASY} + \varepsilon_5$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_9\text{EASY} + \varepsilon_6$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_9\text{EASY} + \beta_{25}\text{EXTERNAL} \times \text{EASY} + \beta_{26}\text{INTERNAL} \times \text{EASY} + \varepsilon_7$ $\text{OUTCOME} = \beta_{03} + \beta_7\text{FLEXIBLE} + \beta_8\text{CONTROL} + \beta_9\text{EASY} + \varepsilon_8$ $\text{OUTCOME} = \beta_{03} + \beta_7\text{FLEXIBLE} + \beta_8\text{CONTROL} + \beta_9\text{EASY} + \beta_{27}\text{FLEXIBLE} \times \text{EASY} + \beta_{28}\text{CONTROL} \times \text{EASY} + \varepsilon_9$
H _{2.2}	$\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_{10}\text{COMPAT} + \varepsilon_{10}$ $\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_{10}\text{COMPAT} + \beta_{31}\text{HIERARCHY} \times \text{COMPAT} + \beta_{32}\text{CLAN} \times \text{COMPAT} + \beta_{33}\text{MARKET} \times \text{COMPAT} + \beta_{34}\text{ADHOCRACY} \times \text{COMPAT} + \varepsilon_{11}$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_{10}\text{COMPAT} + \varepsilon_{12}$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_{10}\text{COMPAT} + \beta_{35}\text{EXTERNAL} \times \text{COMPAT} + \beta_{36}\text{INTERNAL} \times \text{COMPAT} + \varepsilon_{13}$ $\text{OUTCOME} = \beta_{03} + \beta_7\text{FLEXIBLE} + \beta_8\text{CONTROL} + \beta_{10}\text{COMPAT} + \varepsilon_{14}$ $\text{OUTCOME} = \beta_{03} + \beta_7\text{FLEXIBLE} + \beta_8\text{CONTROL} + \beta_{10}\text{COMPAT} + \beta_{37}\text{FLEXIBLE} \times \text{COMPAT} + \beta_{38}\text{CONTROL} \times \text{COMPAT} + \varepsilon_{15}$
H _{2.3}	$\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_{11}\text{COMPET} + \varepsilon_{16}$ $\text{OUTCOME} = \beta_{01} + \beta_1\text{HIERARCHY} + \beta_2\text{CLAN} + \beta_3\text{MARKET} + \beta_4\text{ADHOCRACY} + \beta_{11}\text{COMPET} + \beta_{41}\text{HIERARCHY} \times \text{COMPET} + \beta_{42}\text{CLAN} \times \text{COMPET} + \beta_{43}\text{MARKET} \times \text{COMPET} + \beta_{44}\text{ADHOCRACY} \times \text{COMPET} + \varepsilon_{17}$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_{11}\text{COMPET} + \varepsilon_{18}$ $\text{OUTCOME} = \beta_{02} + \beta_5\text{EXTERNAL} + \beta_6\text{INTERNAL} + \beta_{11}\text{COMPET} + \beta_{45}\text{EXTERNAL} \times \text{COMPET} + \beta_{46}\text{INTERNAL} \times \text{COMPET} + \varepsilon_{19}$

Hypothesis /Question	Equations
	$\text{OUTCOME} = \beta_{03} + \beta_7 \text{FLEXIBLE} + \beta_8 \text{CONTROL} + \beta_{11} \text{COMPET} + \varepsilon_{20}$ $\text{OUTCOME} = \beta_{03} + \beta_7 \text{FLEXIBLE} + \beta_8 \text{CONTROL} + \beta_{11} \text{COMPET} + \beta_{47} \text{FLEXIBLE} \times \text{COMPET} + \beta_{48} \text{CONTROL} \times \text{COMPET} + \varepsilon_{21}$
H _{2.4}	$\text{OUTCOME} = \beta_{01} + \beta_1 \text{HIERARCHY} + \beta_2 \text{CLAN} + \beta_3 \text{MARKET} + \beta_4 \text{ADHOCRACY} + \beta_{12} \text{TURBUL} + \varepsilon_{22}$ $\text{OUTCOME} = \beta_{01} + \beta_1 \text{HIERARCHY} + \beta_2 \text{CLAN} + \beta_3 \text{MARKET} + \beta_4 \text{ADHOCRACY} + \beta_{12} \text{TURBUL} + \beta_{51} \text{HIERARCHY} \times \text{TURBUL} + \beta_{52} \text{CLAN} \times \text{TURBUL} + \beta_{53} \text{MARKET} \times \text{TURBUL} + \beta_{54} \text{ADHOCRACY} \times \text{TURBUL} + \varepsilon_{23}$ $\text{OUTCOME} = \beta_{02} + \beta_5 \text{EXTERNAL} + \beta_6 \text{INTERNAL} + \beta_{12} \text{TURBUL} + \varepsilon_{24}$ $\text{OUTCOME} = \beta_{02} + \beta_5 \text{EXTERNAL} + \beta_6 \text{INTERNAL} + \beta_{12} \text{TURBUL} + \beta_{55} \text{EXTERNAL} \times \text{TURBUL} + \beta_{56} \text{INTERNAL} \times \text{TURBUL} + \varepsilon_{25}$ $\text{OUTCOME} = \beta_{03} + \beta_7 \text{FLEXIBLE} + \beta_8 \text{CONTROL} + \beta_{11} \text{TURBUL} + \varepsilon_{26}$ $\text{OUTCOME} = \beta_{03} + \beta_7 \text{FLEXIBLE} + \beta_8 \text{CONTROL} + \beta_{11} \text{TURBUL} + \beta_{57} \text{FLEXIBLE} \times \text{TURBUL} + \beta_{58} \text{CONTROL} \times \text{TURBUL} + \varepsilon_{27}$
R _{3.1}	$\text{FINANCE} = \beta_{04} + \beta_{61} \text{HIERARCHY} + \beta_{62} \text{CLAN} + \beta_{63} \text{MARKET} + \beta_{64} \text{ADHOCRACY} + \varepsilon_{28}$ $\text{CUSTOMER} = \beta_{05} + \beta_{71} \text{HIERARCHY} + \beta_{72} \text{CLAN} + \beta_{73} \text{MARKET} + \beta_{74} \text{ADHOCRACY} + \varepsilon_{29}$ $\text{PROCESS} = \beta_{06} + \beta_{81} \text{HIERARCHY} + \beta_{82} \text{CLAN} + \beta_{83} \text{MARKET} + \beta_{84} \text{ADHOCRACY} + \varepsilon_{30}$ $\text{PEOPLE} = \beta_{07} + \beta_{91} \text{HIERARCHY} + \beta_{92} \text{CLAN} + \beta_{93} \text{MARKET} + \beta_{94} \text{ADHOCRACY} + \varepsilon_{31}$
R _{3.2}	$\text{FINANCE} = \beta_{04} + \beta_{65} \text{EXTERNAL} + \beta_{66} \text{INTERNAL} + \varepsilon_{32}$ $\text{CUSTOMER} = \beta_{05} + \beta_{75} \text{EXTERNAL} + \beta_{76} \text{INTERNAL} + \varepsilon_{33}$ $\text{PROCESS} = \beta_{06} + \beta_{85} \text{EXTERNAL} + \beta_{86} \text{INTERNAL} + \varepsilon_{34}$ $\text{PEOPLE} = \beta_{07} + \beta_{95} \text{EXTERNAL} + \beta_{96} \text{INTERNAL} + \varepsilon_{35}$
R _{3.3}	$\text{FINANCE} = \beta_{04} + \beta_{67} \text{FLEXIBLE} + \beta_{68} \text{CONTROL} + \varepsilon_{36}$ $\text{CUSTOMER} = \beta_{05} + \beta_{77} \text{FLEXIBLE} + \beta_{78} \text{CONTROL} + \varepsilon_{37}$ $\text{PROCESS} = \beta_{06} + \beta_{87} \text{FLEXIBLE} + \beta_{88} \text{CONTROL} + \varepsilon_{38}$ $\text{PEOPLE} = \beta_{07} + \beta_{97} \text{FLEXIBLE} + \beta_{98} \text{CONTROL} + \varepsilon_{39}$
R _{4.1}	$\text{OUTCOME} = \beta_{01} + \beta_{13} \text{STRATEGIC} + \beta_{14} \text{OPERATIONAL} + \beta_{15} \text{ANALYTICAL} + \varepsilon_{40}$

Where:

EXTERNAL = ADHOCRACY + MARKET

INTERNAL = CLAN + HIERARCHY

FLEXIBLE = CLAN + ADHOCRACY

CONTROL = HIERARCHY + MARKET

Appendix 11 Glossary of terms

Term	Definition
Bootstrapping	A re-sampling procedure by which the original data is considered to represent the population (Byrne, 2001, p. 268).
Cronbach's alpha	A measure of internal consistency reliability which is the average of all possible split-half coefficients resulting from different splitting of the scale items (Malhotra et al., 2002, p. 798).
Convergent validity	A measure to the extent to which a scale correlates positively with other measures of the same construct' (Malhotra et al., 2002, p. 312).
Confirmatory factor analysis	Use of a multivariate technique to confirm a pre-specified relationship (Hair Jr et al., 1998, p. 579).
CLV	Customer Lifetime Value is the estimated profitability of a customer over the course of his or her relationship with an organisation (Kale, 2004, p. 45)
CRM	Customer Relationship Management is the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted customers at a profit. It is grounded on high-quality customer data and enabled by IT (Buttle, 2004, p. 34).
Discriminant validity	A type of construct validity that assesses the extent to which a measure does not correlate with other construct from which it is supposed to differ (Malhotra et al., 2002, p. 312).
Exploratory factor analysis	Analysis that defines possible relationships in only the most general form and then allows the multivariate technique to estimate relationship (Hair Jr et al., 1998, p. 580).
Free parameters in a Structural Model	Standard specification: paths, covariances between the exogenous variables, between the disturbances and between exogenous variables and disturbances, and variances of the exogenous variables and disturbances of endogenous variables less the number of linear constraints (Kenny, 2004).
Goodness-of-fit	Degree to which the actual of observed input matrix is predicted by the estimated model (Hair Jr et al., 1998, p. 580).
Hierarchical regression analysis	A regression analysis in which variables or sets of variables are entered into the equation sequentially in an order designed to answer empirical or theoretical questions' (Cohen, Cohen, West, & Aiken, 2003).
Kurtosis	A measure of the relative peakedness of the curve defined by the frequency distribution (Malhotra et al., 2002, p. 804).
Latent construct or variable	An unobserved, hypothetical construct (Kline, 1998, p. 49). Operationalisation of a construct in SEM. A latent variable cannot be measured directly but can be represented or measured by one or more variables (Hair Jr et al., 1998, p. 581).

Term	Definition
Measurement model	Submodel in SEM that specifies the indicators for each construct and assess the reliability of each construct for estimating the causal relationships (Hair Jr et al., 1998, p. 581).
Multiple regression	A statistical technique that simultaneously develops mathematical relationship between two or more independent variables and an interval-scaled independent variable (Malhotra et al., 2002, p. 581).
Nomological validity	A type of construct validity that assesses the extent to which the scale correlates in theoretical predicted ways with measures of different but related constructs (Malhotra et al., 2002, p. 312).
Observed variables	Variables measured by the researchers or indicators that measuring a latent variable (Kline, 1998, p. 49).
One-factor congeneric model	The simplest form of a measurement model and represents the regression of the set of observed indicator on the single latent variable (Holmes-Smith et al., 2004, p. 61).
Reliability	The extent to which a scale produces consistent results if repeated measurements are made (Malhotra et al., 2002, p. 310).
SOA	Strategic, Operational and Analytical CRM. Strategic CRM views CRM as a core customer centric business strategy that aims at winning and keeping profitable customers. Operational CRM focuses on major automation projects within the front-office functions of selling, marketing and service. Analytical CRM focuses on the intelligent mining of customer data for strategic or tactical purposes (Buttle, 2004, p. 3).
Structural Equation Modelling (SEM)	Multivariate technique combining aspects of multiple regression and factor analysis to estimate a series of interrelated dependence relationships simultaneously (Hair Jr et al., 1998, p. 583).
Unidimensionality	Characteristic of a set of indicators that has only one underlying trait or concept in common (Hair Jr et al., 1998, p. 584).
Validity	The extent to which differences in observed scale scores reflect true differences among objects on the characteristics being measured, rather than systematic or random errors (Malhotra et al., 2002, p. 311).
Varimax procedure	An orthogonal method of factor rotation that minimises the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors (Malhotra et al., 2002, p. 813).

Appendix 12 Correlations among constructs

	CLAN	ADHOCRACY	HIERARCHY	MARKET	EXTERNAL	INTERNAL	FLEXIBLE	CONTROL
CLAN	1							
ADHOCRACY	.661(**)	1						
HIERARCHY	.653(**)	.374(**)	1					
MARKET	.646(**)	.638(**)	.679(**)	1				
EXTERNAL	.722(**)	.923(**)	.565(**)	.885(**)	1			
INTERNAL	.918(**)	.577(**)	.900(**)	.727(**)	.712(**)	1		
FLEXIBLE	.917(**)	.906(**)	.568(**)	.704(**)	.899(**)	.825(**)	1	
CONTROL	.708(**)	.541(**)	.929(**)	.902(**)	.778(**)	.895(**)	.688(**)	1
FINANCIAL	.253(*)	.369(**)	.282(**)	.347(**)	.397(**)	.293(**)	.339(**)	.340(**)
CUSTOMER	.126	.315(**)	.251(*)	.306(**)	.343(**)	.204(*)	.239(*)	.302(**)
PROCESS	.302(**)	.384(**)	.280(**)	.396(**)	.430(**)	.321(**)	.375(**)	.364(**)
PEOPLE	.349(**)	.321(**)	.273(**)	.245(*)	.317(**)	.344(**)	.368(**)	.284(**)
EASY	.403(**)	.230(*)	.507(**)	.375(**)	.327(**)	.498(**)	.350(**)	.487(**)
COMPAT	.266(**)	.204(*)	.326(**)	.248(*)	.247(*)	.324(**)	.259(**)	.316(**)
COMPET	-.076	-.053	.051	.010	-.027	-.017	-.071	.035
TURBUL	.169	.225(*)	.040	.069	.170	.118	.215(*)	.058
STRATEGIC	.193	.162	.175	.228(*)	.212(*)	.203(*)	.195	.218(*)
OPERATIONAL	.092	.153	.126	.074	.130	.119	.133	.112
ANALYTICAL	.146	.227(*)	.233(*)	.284(**)	.279(**)	.206(*)	.203(*)	.280(**)

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix 12 Correlations among constructs – continued

	FINANCIAL	CUSTOMER	PROCESS	PEOPLE	EASY	COMPAT	COMPET	TURBUL	STRATEGIC	OPERATIONAL
FINANCIAL	1									
CUSTOMER	.260(**)	1								
PROCESS	.255(*)	.444(**)	1							
PEOPLE	.314(**)	.334(**)	.422(**)	1						
EASY	-.005	.201(*)	.254(*)	.398(**)	1					
COMPAT	.074	.108	.086	.016	.242(*)	1				
COMPET	.243(*)	-.001	-.133	-.207(*)	-.095	.243(*)	1			
TURBUL	.187	.215(*)	.127	.180	-.081	.089	-.022	1		
STRATEGIC	.070	.233(*)	.180	.199(*)	.157	.043	.092	.132	1	
OPERATIONAL	.185	.172	-.043	.116	.062	.060	.164	.222(*)	.582(**)	1
ANALYTICAL	.162	.176	.105	.087	.116	.086	.113	-.050	.439(**)	.296(**)

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix 13 Common Method Bias analysis

Variable	OUTCOME
CLAN	
r_{yi}	0.358*
r_{yim}	0.288*
ADHOCRACY	
r_{yi}	0.475*
r_{yim}	0.418*
HIERARCHY	
r_{yi}	0.370*
r_{yim}	0.301*
MARKET	
r_{yi}	0.448*
r_{yim}	0.388*
COMPAT	
r_s	0.098

* Correlation is significant at $p < 0.05$ (one-tailed test)

Notes:

- COMPAT (Technical compatibility of CRM system with existing systems) is the variable included in the questionnaire that has insignificant positive correlation with the dependent variable OUTCOME (CRM system implementation outcomes)
- r_{yi} = the original correlations
- r_{yim} = the adjusted correlations