



University of Technology, Sydney

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

# Personalised E-Customer Relationship Management Models and System

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## CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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# ABSTRACT

Electronic Customer Relationship Management (eCRM), and analytical eCRM in particular, is currently one of the most active research topics in the area of customer marketing and customer analytics. The goal of this research is to develop an integrated analytical eCRM framework with a personalised intelligent recommendation approach through the analysis of telecom and banking products/services and customer needs. The development of the personalised recommendation approach combines two technology streams: 1) data mining techniques, which enable the prediction of customer buying behaviour patterns, and 2) fuzzy measure and community-based collaborative filtering recommendation techniques, which automatically combine the predicted buying behaviours and needs-preference requirements of customers to provide relevant and needs-based offers in an uncertain environment. The delivery of this framework effectively improve the quality of customer relationship management in terms of reducing the cost of customer acquisition, increasing customer retention and maximising customer lifetime value, which will enable and support a business strategy to build a long-term, profitable relationship with specific customers. The research contributes to both recommender system research and eCRM research and develops frontier technologies that can be applied across industries.

# TABLE OF CONTENTS

|   |            |
|---|------------|
| <i>ACKNOWLEDGEMENTS</i> .....   | <i>ii</i>  |
| <i>ABSTRACT</i> .....   | <i>iii</i> |
| <i>Table of Figures</i> .....   | <i>ix</i>  |
| <b>CHAPTER 1 Introduction</b> .....                                       | <b>1</b>   |
| <b>1.1 BACKGROUND, RESEARCH QUESTIONS AND MOTIVATION</b> .....            | <b>1</b>   |
| <b>1.2 OBJECTIVES</b> .....   | <b>5</b>   |
| <b>1.3 SIGNIFICANCE</b> .....   | <b>7</b>   |
| <b>1.4 RESEARCH METHODOLOGY</b> .....                                     | <b>9</b>   |
| <b>1.5 THESIS STRUCTURE</b> .....   | <b>15</b>  |
| <b>CHAPTER 2 Literature Review</b> .....                                  | <b>18</b>  |
| <b>2.1 ANALYTICAL ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT</b> .....   | <b>18</b>  |
| 2.1.1 <i>CUSTOMER RELATIONSHIP MANAGEMENT</i> .....                       | 18         |
| 2.1.2 <i>ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT</i> .....            | 19         |
| 2.1.3 <i>ANALYTICAL ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT</i> ..... | 20         |
| <b>2.2 DATA MINING RELATED METHODS IN CUSTOMER ANALYTICS</b> .....        | <b>23</b>  |
| 2.2.1 <i>SEGMENTATION</i> .....   | 24         |
| 2.2.2 <i>PREDICTIVE MODELS</i> .....                                      | 26         |
| <b>2.3 PERSONALISED RECOMMENDER SYSTEMS</b> .....                         | <b>28</b>  |
| 2.3.1 <i>CONCEPT OF RECOMMENDATION SYSTEMS</i> .....                      | 28         |
| 2.3.2 <i>CONTENT-BASED RECOMMENDATION TECHNIQUES</i> .....                | 29         |
| 2.3.3 <i>COLLABORATIVE-FILTERING RECOMMENDATION TECHNIQUES</i> .....      | 30         |
| 2.3.4 <i>KNOWLEDGE-BASED RECOMMENDATION TECHNIQUES</i> .....              | 33         |
| 2.3.5 <i>OTHER RECOMMENDATION TECHNIQUES</i> .....                        | 33         |
| 2.3.6 <i>RECOMMENDER SYSTEM APPLICATION</i> .....                         | 36         |

|                  |   |           |
|------------------|---|-----------|
| 2.3.7            | <i>FUZZY SET TECHNIQUES IN RECOMMENDER SYSTEMS</i> .....  | 37        |
| <b>CHAPTER 3</b> | <b><i>Preliminaries</i></b> .....   | <b>39</b> |
| <b>3.1</b>       | <b>STATISTICAL METHODS</b> .....  | <b>39</b> |
| 3.1.1            | <i>BOOSTING</i> .....   | 39        |
| 3.1.2            | <i>LOGISTIC REGRESSION</i> .....  | 41        |
| 3.1.3            | <i>SURVIVAL ANALYSIS</i> .....  | 42        |
| 3.1.4            | <i>FACTOR ANALYSIS</i> .....  | 43        |
| <b>3.2</b>       | <b>FUZZY TECHNIQUES PRELIMINARIES</b> .....   | <b>44</b> |
| 3.2.1            | <i>FUZZY SETS</i> .....   | 44        |
| <b>CHAPTER 4</b> | <b><i>A Personalised Analytical Electronic Customer Relationship Management Framework</i></b> ..... | <b>49</b> |
| <b>4.1</b>       | <b>OVERVIEW</b> .....   | <b>49</b> |
| <b>4.2</b>       | <b>A PERSONALISED ANALYTICAL ECRM</b> .....   | <b>50</b> |
| <b>4.3</b>       | <b>A HYBRID CUSTOMER SEGMENTATION MODEL</b> .....   | <b>54</b> |
| 4.3.1            | <i>PROBLEM DESCRIPTION AND FORMALISATION</i> .....  | 55        |
| 4.3.2            | <i>A FIVE-STEP HYBRID MIGRATING CUSTOMER SEGMENTATION METHOD</i> ....                               | 57        |
| <b>4.4</b>       | <b>EXPERIMENT AND ANALYSIS</b> .....  | <b>62</b> |
| 4.4.1            | <i>EXPERIMENT DATA</i> .....  | 62        |
| 4.4.2            | <i>INITIAL CUSTOMER SEGMENTATION RESULT</i> .....   | 63        |
| 4.4.3            | <i>RESULTS AND ANALYSIS</i> .....   | 63        |
| <b>4.5</b>       | <b>SUMMARY</b> .....  | <b>66</b> |
| <b>CHAPTER 5</b> | <b><i>Attrition Risk Prediction Models</i></b> .....  | <b>67</b> |
| <b>5.1</b>       | <b>OVERVIEW</b> .....   | <b>67</b> |
| <b>5.2</b>       | <b>A RISK PREDICTION FRAMEWORK FOR BANK CUSTOMER ATTRITION</b> .....                                | <b>68</b> |
| <b>5.3</b>       | <b>A SPORADIC RISK PREDICTION APPROACH AND A COMBINED PREDICTION MODEL</b> .....                    | <b>73</b> |
| 5.3.1            | <i>SPORADIC ATTRITION MODEL DESCRIPTION</i> .....   | 73        |
| 5.3.2            | <i>MODEL FIT EVALUATION</i> .....   | 79        |

|  |  |            |
|--|--|------------|
| 5.3.3  | <i>TOP SIGNIFICANT VARIABLES</i> .....                               | 80         |
| <b>5.4</b>   | <b>REGULAR ATTRITION MODEL AND NEW CUSTOMER ATTRITION MODEL</b> .... | <b>81</b>  |
| 5.4.1  | <i>NEW CUSTOMER ATTRITION MODEL AND ONLINE SAVER DESCRIPTION</i> ... | 82         |
| 5.4.2  | <i>MODEL FIT EVALUATION</i> .....                                    | 83         |
| 5.4.3  | <i>SIGNIFICANT VARIABLES FROM MODELLING</i> .....                    | 86         |
| <b>5.5</b>   | <b>EXPERIMENTS AND ANALYSIS</b> .....                                | <b>87</b>  |
| <b>5.6</b>   | <b>SUMMARY</b> .....   | <b>92</b>  |
| <br>   |  |            |
| <b>CHAPTER 6   <i>An Intelligent Customer Churn Management Model</i></b>       |  |            |
| <b><i>And Case Study</i></b> .....   |  |            |
| <b>93</b>  |  |            |
| <b>6.1</b>   | <b>OVERVIEW</b> .....  | <b>93</b>  |
| <b>6.2</b>   | <b>CUSTOMER CHURN MANAGEMENT MODEL – A REAL WORLD CASE STUDY</b>     | <b>94</b>  |
| 6.2.1  | <i>CASE DESCRIPTION</i> .....  | 94         |
| 6.2.2  | <i>MODELLING PRE-PROCESS</i> .....                                   | 96         |
| 6.2.3  | <i>CUSTOMER CHURN PROFILE MODEL</i> .....                            | 97         |
| 6.2.4  | <i>CUSTOMER ACTION MODEL</i> .....                                   | 99         |
| 6.2.5  | <i>CUSTOMER EXPERIENCE MODEL</i> .....                               | 101        |
| 6.2.6  | <i>AN INTELLIGENT CUSTOMER RISK MODEL</i> .....                      | 102        |
| <b>6.3</b>   | <b>EXPERIMENTS AND ANALYSIS</b> .....                                | <b>107</b> |
| 6.3.1  | <i>CHURN PREDICTION</i> .....  | 107        |
| 6.3.2  | <i>RISK ASSESSMENT</i> .....   | 110        |
| <b>6.4</b>   | <b>SUMMARY</b> .....   | <b>112</b> |
| <br>   |  |            |
| <b>CHAPTER 7   <i>A Fuzzy Set-Based Hybrid Recommendation Approach For</i></b> |  |            |
| <b><i>Customer Retention</i></b> .....   |  |            |
| <b>113</b>   |  |            |
| <b>7.1</b>   | <b>OVERVIEW</b> .....  | <b>113</b> |
| <b>7.2</b>   | <b>CASE DESCRIPTION FOR EXISTING TELECOM CUSTOMERS</b> .....         | <b>114</b> |
| <b>7.3</b>   | <b>APPROACH DESCRIPTION</b> .....                                    | <b>117</b> |
| 7.3.1  | <i>BUSINESS RULES</i> .....  | 117        |
| 7.3.2  | <i>A FUZZY SET-BASED HYBRID RECOMMENDATION APPROACH</i> .....        | 118        |

|                  |  |            |
|------------------|--|------------|
| <b>7.4</b>       | <b>A RECOMMENDER SYSTEM FRAMEWORK FOR EXISTING CUSTOMERS.....</b>  | <b>122</b> |
| <b>7.5</b>       | <b>EXPERIMENTS AND ANALYSIS.....</b>   | <b>123</b> |
| 7.5.1            | <i>DATASET.....</i>  | 123        |
| 7.5.2            | <i>EVALUATION METRICS.....</i>   | 125        |
| 7.5.3            | <i>EXPERIMENTAL ANALYSIS.....</i>  | 125        |
| <b>7.6</b>       | <b>SUMMARY.....</b>  | <b>127</b> |
| <br>             |  |            |
| <b>CHAPTER 8</b> | <b><i>A Fuzzy Matching-Based Recommendation Approach For Customer Acquisition</i></b>                    | <b>129</b> |
| <b>8.1</b>       | <b>OVERVIEW.....</b>   | <b>129</b> |
| <b>8.2</b>       | <b>APPROACH DESCRIPTION.....</b>   | <b>130</b> |
| 8.2.1            | <i>CASE DESCRIPTION FOR PROSPECTIVE TELECOM CUSTOMER.....</i>  | 130        |
| 8.2.2            | <i>MODELLING THE REQUIREMENTS OF CUSTOMERS.....</i>  | 133        |
| 8.2.3            | <i>MODELLING THE ATTRIBUTES OF MOBILE PRODUCTS/SERVICES.....</i>   | 135        |
| 8.2.4            | <i>MODELLING THE USAGE RECORD.....</i>   | 136        |
| 8.2.5            | <i>A FUZZY MATCHING-BASED RECOMMENDATION APPROACH.....</i>   | 137        |
| <b>8.3</b>       | <b>A RECOMMENDER SYSTEM FRAMEWORK FOR<br/>THE PROSPECTIVE CUSTOMER.....</b>                              | <b>140</b> |
| <b>8.4</b>       | <b>AN ILLUSTRATION.....</b>  | <b>141</b> |
| <b>8.5</b>       | <b>SUMMARY.....</b>  | <b>143</b> |
| <br>             |  |            |
| <b>CHAPTER 9</b> | <b><i>A Personalised Recommender System For The Best Recommendation</i></b>                              | <b>144</b> |
| <b>9.1</b>       | <b>OVERVIEW.....</b>   | <b>144</b> |
| <b>9.2</b>       | <b>A PERSONALISED RECOMMENDER SYSTEM.....</b>  | <b>145</b> |
| 9.2.1            | <i>RECOMMENDATION ENGINE.....</i>  | 147        |
| 9.2.2            | <i>CASE STUDY - FUZZY-BASED TELECOM PRODUCT RECOMMENDER SYSTEM<br/>ARCHITECTURE AND DEVELOPMENT.....</i> | 150        |
| 9.2.3            | <i>SYSTEM ARCHITECTURE.....</i>  | 150        |
| 9.2.4            | <i>FTCP-RS DEVELOPMENT STEPS.....</i>  | 152        |



|            |  |                   |
|------------|--|-------------------|
| <b>9.3</b> | <b>SYSTEM APPLICATION .....</b>                                | <b>153</b>        |
| <b>9.4</b> | <b>SUMMARY.....</b>  | <b>156</b>        |
|            | <b><i>CHAPTER 10 Conclusions and Further Research.....</i></b> | <b><i>157</i></b> |
|            | <b><i>REFERENCE.....</i></b>                                   | <b><i>161</i></b> |

# TABLE OF FIGURES

|  |     |
|--|-----|
| <i>Figure 1-1 Recommendation Process Flow Chart</i> .....  | 14  |
| <i>Figure 1-2 Research Methodology</i> .....   | 15  |
| <i>Figure 1-3 Thesis Structure</i> .....   | 17  |
| <i>Figure 3-1 Fuzzy Sets and Membership Functions for Table 3-1</i> .....                          | 48  |
| <i>Figure 4-1 Proposed Personalised Analytical eCRM Framework</i> .....                            | 53  |
| <i>Figure 4-2 Main steps of the HMCS Method</i> .....  | 57  |
| <i>Figure 4-3 Data Population from Source Dataset to Target Dataset</i> .....                      | 61  |
| <i>Figure 4-4 Result of Experiment 1</i> .....   | 64  |
| <i>Figure 4-5 Result of Experiment 2</i> .....   | 65  |
| <i>Figure 4-6 Result of Experiment 3</i> .....   | 65  |
| <i>Figure 5-1 High Level of the Split Points of the Three Identified Segments</i> .....            | 70  |
| <i>Figure 5-2 A Pre-emptive Attrition Framework for Bank Customers</i> .....                       | 72  |
| <i>Figure 5-3 Comparison between the Combined Model and Three Other Models</i> .....               | 80  |
| <i>Figure 5-4 Lift Chart Based on the New Attrition Development Sample</i> .....                   | 84  |
| <i>Figure 5-5 Lift Chart Based on the Online Saver Development Sample</i> .....                    | 85  |
| <i>Figure 5-6 Decile Comparison between the Training Sample and the Validation Sample</i><br>..... | 88  |
| <i>Figure 5-7 Gains Chart Based on the New Customer Attrition Validation Sample</i> .....          | 89  |
| <i>Figure 5-8 Gains Chart Based on the Online Saver Validation Sample</i> .....                    | 90  |
| <i>Figure 6-1 Timeline of Churn Prediction Model</i> .....   | 95  |
| <i>Figure 6-2 Example of Customer Lifecycle</i> .....  | 99  |
| <i>Figure 6-3 Example of Hazard Curves</i> .....   | 101 |
| <i>Figure 6-4 Example of Survival Curves</i> .....   | 101 |
| <i>Figure 6-5 Membership Function of High Risk</i> .....   | 106 |
| <i>Figure 6-6 Example of Overall Risk Assessment</i> .....   | 106 |
| <i>Figure 6-7 Roc Curve of Churn Prediction</i> .....  | 107 |
| <i>Figure 6-8 Lift Chart for Churn Prediction</i> .....  | 108 |

|  |     |
|--|-----|
| <i>Figure 6-9 Roc Curves of Predictions</i> .....  | 109 |
| <i>Figure 6-10 Lift Curves of Predictions</i> .....                                      | 110 |
| <i>Figure 6-11 Membership Functions of All Risk Levels</i> .....                         | 111 |
| <i>Figure 6-12 Summary of Customer Risk Categories</i> .....                             | 112 |
| <i>Figure 7-1 A Proposed Recommender System for Existing Customers</i> .....             | 123 |
| <i>Figure 7-2 Fuzzy Sets and Membership Functions for Table 7.2</i> .....                | 124 |
| <i>Figure 7-3 Experiment Results (MAE)</i> .....   | 126 |
| <i>Figure 8-1 Framework of the Recommender System for Prospective Customers</i> .....    | 141 |
| <i>Figure 9-1 Proposed Personalised Recommender System</i> .....                         | 147 |
| <i>Figure 9-2 Architecture of Recommendation Engine</i> .....                            | 148 |
| <i>Figure 9-3 Architecture of FTCP-RS</i> .....  | 150 |
| <i>Figure 9-4 FTCP-RS Site Map</i> .....   | 153 |
| <i>Figure 9-5 List of Telecom Product/Service Contract Generated By FTCP-RS</i> .....    | 155 |
| <i>Figure 9-6 Example of a Telecom Product/Service Contract with Usage History</i> ..... | 155 |
| <i>Figure 9-7 Recommendations of FTCP-RS</i> .....                                       | 156 |

# List of Tables

|   |            |
|---|------------|
| <i>Table 3-1 Linguistic Terms and Related Fuzzy Numbers .....</i>                                       | <i>47</i>  |
| <i>Table 4-1 Outline of the HMCS Method .....</i>   | <i>57</i>  |
| <i>Table 4-2 Record Distribution over Five Segments in Source Dataset .....</i>                         | <i>63</i>  |
| <i>Table 5-1 Analysis of Maximum Likelihood Estimates .....</i>   | <i>77</i>  |
| <i>Table 5-2 Analysis of Maximum Likelihood Estimates -New Attrition Model.....</i>                     | <i>83</i>  |
| <i>Table 5-3 Analysis of Maximum Likelihood Estimates- Online Saver Model .....</i>                     | <i>83</i>  |
| <i>Table 5-4 Validation of Predicted Time versus Actual Time .....</i>                                  | <i>90</i>  |
| <i>Table 5-5 Prediction of Attrition between 1 and 4 Weeks .....</i>                                    | <i>91</i>  |
| <i>Table 5-6 Prediction of Attrition between 5 and 8 Weeks .....</i>                                    | <i>91</i>  |
| <i>Table 5-7 Prediction of Attrition greater than 9 Weeks .....</i>                                     | <i>91</i>  |
| <i>Table 6-1 Expert Evaluations on High Risk .....</i>  | <i>105</i> |
| <i>Table 6-2 Example of Customer Risk Factors .....</i>   | <i>111</i> |
| <i>Table 7-1 Examples of Mobile Products/Services .....</i>   | <i>116</i> |
| <i>Table 7-2 Linguistic Terms and Related Fuzzy Numbers .....</i>                                       | <i>124</i> |
| <i>Table 7-3 Comparison with Six other Hybrid Collaborative Filtering Approaches ....</i>               | <i>126</i> |
| <i>Table 8-1 Four Mobile Service Plan Features .....</i>  | <i>131</i> |
| <i>Table 8-2 Questions to Obtain Customers' Requirements and Sub-Services.....</i>                      | <i>134</i> |
| <i>Table 8-3 LCVs of Four Products .....</i>  | <i>136</i> |
| <i>Table 8-4 Usage Records of Three Customers.....</i>  | <i>137</i> |
| <i>Table 8-5 Mapping from Usage to Linguistic Description.....</i>                                      | <i>137</i> |
| <i>Table 8-6 Linguistic Terms and Related Fuzzy Numbers for Customers' Requirements</i><br><i>.....</i> | <i>141</i> |
| <i>Table 8-7 Linguistic Terms and Related Fuzzy Numbers for Weights .....</i>                           | <i>142</i> |