

# **Business Architecture Reference Model (BARM) for Small and Medium Enterprises (SMEs)**

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A thesis submitted in fulfilment of the requirements for the degree of  
Doctor of Philosophy

Faculty of Engineering and Information Technology  
University of Technology Sydney, Australia

September 2017

## **Declaration of 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 part of the collaborative doctoral degree and/or 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.

Signature of Student:

Date:

## **Acknowledgements**

First I would like to take this opportunity to express my sincere thanks and appreciation to my supervisor Professor Eng K. Chew. His continuous support, patience, immense knowledge, and generous guidance allowed me to grow and express myself through my research.

I also would like to thank all my colleagues and friend for their valuable feedback and support, especially Martin Stubbs-Race for many helpful comments and suggestions on early drafts which have undoubtedly shaped my thinking.

This journey would not have been possible without the support of my family. I am very grateful to my husband Kashef who has patiently and constantly supported me all the way. His advice and insights were (and are) always constructive and inspired me to continue when I needed it the most.

Last, but most dearest, to my precious Ronya who joined the crew at the end of the journey and has been the most beautiful distraction. Thanks so much for those nights that you slept earlier and allowed me to write my thesis.

# Table of Contents

ABSTRACT .....	12
<b>1 INTRODUCTION.....</b>	<b>13</b>
1.1 MOTIVATIONS .....	13
1.2 BACKGROUND AND PROBLEM STATEMENT .....	13
1.3 RESEARCH GOALS AND QUESTIONS.....	15
1.4 STRUCTURE OF THIS THESIS .....	17
<b>2 RESEARCH METHOD.....</b>	<b>19</b>
2.1 DESIGN SCIENCE .....	19
2.2 RESEARCH OUTLINE OF THE THESIS .....	21
2.3 EMPLOYING DESIGN SCIENCE.....	21
2.3.1 <i>SMEs Strategic Development Requirements (Business Needs)</i> .....	22
2.3.2 <i>Knowledge Base</i> .....	23
2.3.3 <i>Develop/ Build</i> .....	23
2.3.4 <i>Evaluation</i> .....	25
<b>3 LITERATURE REVIEW .....</b>	<b>31</b>
3.1 SMEs STRATEGIC DEVELOPMENT REQUIREMENTS.....	32
3.1.1 <i>SMEs</i> .....	32
3.1.2 <i>SMEs Management and organisational Structure</i> .....	32
3.1.3 <i>SMEs within Business Collaborative Ecosystem</i> .....	33
3.1.4 <i>SMEs ICT Development and Architecture</i> .....	36
3.2 FINDINGS.....	41
3.2.1 <i>BA as a Strategic Management Tool for SMEs</i> .....	41
3.2.2 <i>What to Expect from a BA practice for SMEs?</i> .....	44
3.3 CONCLUSIONS AND SOME GUIDELINES FOR DEFINING APPLICABLE BA FOR SMEs.....	47
3.4 BUSINESS ARCHITECTURE .....	51
3.4.1 <i>Business Architecture Literature and Related Work</i> .....	51
3.4.2 <i>Findings</i> .....	62
<b>4 REVIEWING THE KNOWLEDGE DOMAIN.....</b>	<b>64</b>
4.1 ENTERPRISE/BUSINESS ARCHITECTURE .....	64
4.1.1 <i>Origin, Definition, Place and Role of Business Architecture in the Firms</i> .....	64
4.1.2 <i>Enterprise Architecture</i> .....	65
4.1.3 <i>What Actually is a Business Architecture</i> .....	67
4.1.4 <i>Contextual Concerns in Business Architecture Practice</i> .....	69
4.1.5 <i>Modular Architecture</i> .....	69
4.2 ORGANIZATION BUILDING BLOCKS.....	71
4.3 VALUE PROPOSITION AND VALUE CO-CREATION .....	72
4.4 ORGANISATIONAL DYNAMIC.....	74
4.4.1 <i>Resource Based View and Dynamic Capability</i> .....	74
4.4.1 <i>Business Ecosystem and Firm’s Co-evolution</i> .....	77
4.4.2 <i>Contingency Theory</i> .....	78
<b>5 BUSINESS ARCHITECTURE REFERENCE MODEL (BARM): FRAMEWORK DESIGN .....</b>	<b>80</b>
5.1 CONCEPTUAL FOUNDATION FOR BARM .....	80

5.1.1	<i>Architecture Science and Business Design</i>	81
5.1.2	<i>Strategic Management Theories and Organizational Science</i>	82
5.2	THE BARM PLACE IN A COMPANY	84
5.2.1	<i>Operationalizing of Value Proposition-Internal Fitness</i>	85
5.2.2	<i>Managing Business Ecosystem Dynamisms/External Fitness</i>	86
5.2.3	<i>Business/ICT Architecture Alignment</i>	86
5.3	BARM INTRODUCTION	86
5.4	BARM ARCHITECTURE COMPONENTS	87
5.5	NOTATIONS AND LABELLING OF BARM COMPONENTS AND RELATED ELEMENTS	90
5.5.1	<i>BARM External Elements</i>	90
5.5.2	<i>BARM Internal Elements</i>	93
5.6	BARM METAMODEL: INTERDEPENDENCIES BETWEEN THE BARM COMPONENTS	102
5.7	BARM IMPLEMENTATION PROCESS	108
5.8	BUSINESS ARCHITECTURE PRINCIPLE	114
5.9	BARM SPECIALIZATION AND ADAPTATION	120
<b>6</b>	<b>DESK-VALIDATION OF BARM</b>	<b>121</b>
6.1	INTERVIEWS-INDUSTRY EXPERTS AND SME'S EXECUTIVES	121
6.1.1	<i>Interview Analysis and Findings</i>	122
6.1.2	<i>Overall Analysis Result</i>	130
6.2	PEER REVIEW-CONFERENCE PAPERS	133
<b>7</b>	<b>EMPIRICAL EVALUATION OF BARM</b>	<b>134</b>
7.1	CASE STUDY PLAN	134
7.2	CASE STUDY 1: BARM TO FACILITATE CLOUD BASED BUSINESS TRANSFORMATION	135
7.2.1	<i>Case Study Introduction</i>	135
7.2.2	<i>MSA Introduction:</i>	135
7.2.3	<i>Case Study Execution</i>	136
7.2.4	<i>MSA Case Study Result- Evaluation</i>	163
7.3	CASE STUDY 2: DEVELOPING BUSINESS ARCHITECTURE FOR IOT BASED BUSINESS MODEL EXECUTION	165
7.3.1	<i>Case Study Introduction</i>	165
7.3.2	<i>IHealth4Me Introduction</i>	165
7.3.3	<i>Case Study Execution</i>	166
7.3.1	<i>IHealth4Me Case Study Result- Evaluation</i>	184
7.4	CASE STUDY 3: BARM TO ESTABLISH A COLLABORATIVE BASED BUSINESS MODEL	189
7.4.1	<i>Case Study Introduction</i>	189
7.4.2	<i>Case Study Execution</i>	189
7.4.3	<i>REC Case Study Result-Evaluation</i>	205
7.5	EVALUATION SUMMARY	207
7.5.1	<i>Case Studies Summary</i>	207
7.5.2	<i>BARM Refinement</i>	214
7.5.3	<i>Lessons learned</i>	217
<b>8</b>	<b>CONCLUSION</b>	<b>221</b>
8.1	SUMMARY OF THIS RESEARCH	221
8.2	KEY THEORETICAL IMPLICATIONS AND PUBLICATIONS	222
8.2.1	<i>Demonstrates Importance of BA Practice for SME's Strategic Development and Execution</i>	223
8.2.2	<i>Developing Multi-Disciplinary Business Architecture Reference Model (BARM)</i>	224
8.2.3	<i>Value Proposition Execution</i>	224

8.2.4	<i>Architecture of Business beyond Firms Boundaries</i> .....	225
8.3	IMPLICATIONS FOR INDUSTRY.....	226
8.3.1	<i>Architecture Mindset and Culture</i> .....	227
8.3.2	<i>Clarity and Direction</i> .....	227
8.3.3	<i>Managing limited Resources and Capabilities:</i> .....	228
8.3.4	<i>Business Execution:</i> .....	228
8.4	LIMITATIONS AND FUTURE DIRECTIONS .....	229
8.4.1	<i>BARM for Organisational Innovation</i> .....	229
8.4.2	<i>Business Architecture for Business Growth</i> .....	231
8.4.3	<i>Enterprise Ontologies and Engineering Adaption in Business Architecture</i> .....	231
<b>9</b>	<b>REFERENCES</b> .....	<b>233</b>
	<b>APPENDIX A: RESEARCH PAPERS</b> .....	<b>248</b>
	<b>APPENDIX B- BARM PROJECT (CASE STUDY) PROPOSAL</b> .....	<b>250</b>

## List of Tables

Table 1: Design Evaluation and validation Methods.....	30
Table 2: Summary of Strategic Roles of IT within SMEs.....	37
Table 3: Summary of architecture views applied within SMEs .....	40
Table 4: Insights for Defining Applicable BA for SMEs .....	50
Table 5: Overview of Current BA Practices (Adapted from IBM, 2010) .....	63
Table 6: Enterprise Business Architecture Definitions.....	68
Table 7: Dynamic Capability Definitions .....	76
Table 8: Business Capabilities Topology Adapted From (Day 1994).....	97
Table 9: BARM Internal and External Components Relationship .....	105
Table 10: BARM Components and Value Proposition Interdependencies .....	107
Table 11: Analysing As-Is Business Adopted from Canvas and Ecosystem Model.....	110
Table 12: Architectural Principles .....	116
Table 13: Principles in Achieving Internal and External Fitnesses .....	119
Table 14: Interview Structure and Outcome.....	124
Table 15: BARM- Validation Analysis Results.....	131
Table 16: MSA As-Is Business -Case Study 1 .....	139
Table 17: Cloud Considerations in BARM Internal Components.....	141
Table 18: Cloud Considerations in BARM External Components.....	142
Table 19: MSA Strategy View-Cloud Considerations.....	146
Table 20: Cloud Considerations-MSA's Business Capabilities and Services.....	154
Table 21: MSA Cloud Requirements-Organizational View .....	155
Table 22: MSA Cloud Consideration-Knowledge View .....	157
Table 23: MSA Clouds Solution Requirements_ Summary .....	160
Table 24: MSA Business Architecture Catalogue- Exemplar .....	162
Table 25: IHealth4Me As-Is Business Model.....	166

Table 26: Comparison of IHealth4Me and its Competitors .....	171
Table 27: Service Customisation Plan- Value Co creation Opportunities.....	175
Table 28: IHealth4Me Business Architecture Catalogue for Competitive Environment Strategy .....	180
Table 29: IHealth4Me Architecture Components Matrix .....	181
Table 30: Service Execution Plan-Opportunities for Value Co-creation.....	183
Table 31: IHealth4Me Case Study-Actions and Outputs.....	185
Table 32: REC As-Is Business.....	191
Table 33: BARM Components in the Collaborative Business Model Context .....	192
Table 34: Architecture Component Interaction .....	202
Table 35: REC Business Model Execution Roadmap .....	204
Table 36: Summary of the Case Studies .....	213
Table 37: Overview of Project Phase and Steps .....	257
Table 38: Project timeline .....	260



## List of Figures

Figure 1: Research Aim, Objectives and Questions .....	15
Figure 2: Thesis Structure .....	18
Figure 3: Design Science Framework by Hevner 2004 .....	20
Figure 4: BARM Research Design- Adapted from Henver Framework .....	22
Figure 5: BARM Design Process.....	25
Figure 6: Evaluation Method-Adapted from (Eisenhardt and Graebner 2007) .....	29
Figure 7: Occurrence of the Term of Business Architecture in Literature .....	52
Figure 8: Business Layer of ArchiMate (The Open Group 2009a) .....	53
Figure 9: BA and IT Architecture Ecosystem according to BAWG (BAWG 2009b).....	54
Figure 10: Business Motivation Model by OMG .....	55
Figure 11: Business Concept by McDavid .....	57
Figure 12: Component Business Model (CBM) by IBM.....	58
Figure 13: TOGAF Content Meta Model-Business Architecture.....	59
Figure 14: Relationship between Capability, Enterprise Architecture, and the projects (According to TOGAF).....	60
Figure 15: Knowledge Domain.....	64
Figure 16: Modular Design Rules: Adopted by Service Oriented Architecture.....	70
Figure 17: Conceptual Foundation of BARM .....	81
Figure 18: Business Components and Ecosystem- Adapted from Moore 1996 .....	83
Figure 19: Business Ecosystem, Value Proposition, Strategy and Business Architecture .....	85
Figure 20: BARM Architecture Components-Overview.....	88
Figure 21: BARM Internal and External Components and Sub-Components.....	89
Figure 22: BARM-External Components .....	92
Figure 23: BARM-Strategy View .....	94
Figure 24: BARM-Business Capability View .....	96
Figure 25: Business Capability and Service View.....	98

Figure 26: BARM-Business Service View .....	98
Figure 27: BARM-Information/Knowledge View.....	100
Figure 28: BARM-Organisational View.....	101
Figure 29: BARM-Metamodel.....	103
Figure 30: BARM Implementation Process.....	109
Figure 31: Adopted Business Scenario Creation from SRI and TOGAF .....	112
Figure 32: Interview Analysis- Impression on BARM simplicity and understandability .....	125
Figure 33: Interview Analysis-BARM's Ability in Enabling SME to React in Dynamic Environment.....	127
Figure 34: Interview Analysis-BARM's Ability to Structure, Manage ICTs and Associated Capabilities .....	128
Figure 35: Interview Analysis-BARM's Ability on Value Proposition Execution .....	129
Figure 36: Interview Analysis- BARM Completeness .....	130
Figure 37: BARM- Validation Overall Analysis Results .....	132
Figure 38: MSA's Specialised BARM-Cloud Based BARM.....	144
Figure 39: MSA's External Architecture Components .....	147
Figure 40: Business Capability and Service Views-Cloud Environment .....	151
Figure 41: MSA Business Capability and Service Views .....	152
Figure 42: MSA's Organisational View .....	155
Figure 43: MSA knowledge/ Information View .....	156
Figure 44: MSA's Business Architecture-Overview .....	158
Figure 45: MSA Research Process .....	161
Figure 46: IHealth4Me Strategy View.....	168
Figure 47: IHealth4Me Institutional Environment .....	170
Figure 48: IHealth4Me Competitive Environment.....	171
Figure 49: IHealth4Me- Partners and Users Engagement Model.....	172
Figure 50: IHealth4Me Business Capability View and Service View.....	174

Figure 51: IHealth4Me Organisation View.....	175
Figure 52: IHealth4Me Knowledge/Information View .....	176
Figure 53: IHealth4Me Business Architecture-Integrated View .....	178
Figure 54: IHealth4Me Competitive Environment Strategy Execution Roadmap .....	182
Figure 55: Presenting BARM to IOT Community Network .....	187
Figure 56: REC External Components .....	194
Figure 57: REC Business Capability and Service Views .....	196
Figure 58: REC Organisational View .....	197
Figure 59: REC Knowledge View .....	198
Figure 60: REC Business Architecture-Integrated View.....	199
Figure 61: REC Execution Roadmap-Example .....	203
Figure 62: BARM Evolutionary Path .....	216
Figure 63: BARM Adaptability to the Case Studies.....	219
Figure 64: BARM Industry Implications .....	226
Figure 65: BARM Theoretical Implication- Innovation.....	230
Figure 66: Aspect of Business Represented by EBA Framework .....	253

## **Abstract**

As Small and Medium Enterprises (SMEs) compete in a dynamic ecosystem of firms, their businesses continuously face the challenge of creating sustained value by managing socio-technical resources/capabilities and aligning them with changing market needs. Accelerating technological changes, rapidly changing market demands and growing globalized collaborative ecosystem of organisations, in addition to SMEs' inherent resource limitations and constraints, underscore the SMEs' critical need for strategic developments and execution. The SME's combined internal and external challenges and requirements call for the support of a Business Architecture (BA) – a strategic management tool to facilitate the development and configuration of socio-technical resources/capabilities and capitalise on the ecosystem and market opportunities.

Using the Design Science methodology this research aims to develop and evaluate a simple but holistically comprehensive Business Architecture (BA) that shall ideally help SMEs implement entrepreneurial practices that have the capacity to articulate and execute their business strategies to align with the changing environments. In particular using extensive exploratory literature review I identify underlying drivers of SME requirements for a BA practice. Then I explicate the research problem and BA practice requirements using a semi-structured interview of SME managers/executives and E/BA experts. Derived from identified SMEs' internal and external strategic requirements, I develop the conceptual model for the SMEs' Business Architecture Reference Model (BARM) by integrating diverse but interrelated disciplines including; IS, strategic management, organization, architecture and service sciences. Theoretically grounded from these diverse disciplines, the BARM provides SMEs with a new holistic approach to orchestrate their socio-technical resources/capabilities and manage their co-evolution within the dynamic ecosystem. The validity of resultant constructs has been evaluated in two parts. First, the BARM efficacy and usability has been desk-validated through interviews with industry experts and SME's executives. Second, the applicability of BARM is tested through its implementation and in depth study in three different small organisations. I examined how well the BARM was utilized by the case studies. The final evaluation was conducted through a qualitative method of analysing the solutions and artefacts and the use of open interviews.

In addition to its contribution to the specification of a BA practice to facilitate SME value co-creation, this research also contributes to theoretically advancing architecture science. It extends the current theoretical model of BA by incorporating diverse strategic management, organisation, IS, and service sciences theories to make the proposed BARM applicable to SMEs. This research makes a significant contribution to the practical application of BA to SMEs' strategic development and execution by providing clarity and direction in ICT investment, creating a capability-based and strategy-driven business culture, and facilitating customer-aligned value proposition execution.