

Contents

1	Introduction	1
1.1	Technologies that will Reshape Our Future	1
1.2	The Emerging Markets that will Define the World	2
1.3	R&D, Innovation and Technologies in Emerging Markets	3
1.4	Health Technologies for All	4
1.5	Financial Services Technologies for the Under-Banked	5
1.6	Education Technologies for the Masses	7
	References.	8
 Part I Financial Service		
2	Mobility Technology Solutions Can Reduce Interest Rates of Microfinance Loans	11
2.1	Introduction	11
2.2	Why Is MFI Interest Rates So High?.	12
2.3	Reducing Operational Cost.	14
2.4	Monitoring Transaction Cost and Administrative Expenses Using Activity Based Costing (ABC)	15
2.5	Pilot Project in Indonesia	20
2.5.1	Borrower/s Acquisition Process	20
2.5.2	Training of Borrower/s	20
2.5.3	Cash Transfer to Borrower.	21
2.5.4	Weekly Visits to Borrower/s	21
2.6	Conclusion.	21
	References.	22
3	Bank Ratings in Emerging Asia—Methodology, Information and Technology	25
3.1	Introduction	26
3.2	CAMEL—The Vintage Model	26
3.2.1	Capital	26

3.2.2	Asset Quality	27
3.2.3	Management	27
3.2.4	Earning	27
3.2.5	Liquidity	28
3.2.6	CAMEL Scoring.	28
3.3	EAGLES—The Emerging Model	29
3.4	Lessons—Two Crises, Three Continents (1997–2007)	31
3.4.1	Lesson 1: Strong Macroeconomic Fundamentals Are Critical to Maintain the Confidence of the Investors.	31
3.4.2	Lesson 2: There Must Be Strong Domestic Safeguards to Help Neighboring Countries to Prevent the Contagion Effect	32
3.4.3	Lessons 3: Governments, Financial Institutions, and Corporations Must Communicate Well with Investors, Creditors, and to the Market.	32
3.5	Technology to Provide Pertinent Information	33
	References.	34
4	Microfinance and Gender Equality in Indonesia.	35
4.1	Introduction	35
4.2	Microcredit and Micro-entrepreneurs in Indonesia.	37
4.3	Women Micro-entrepreneurs	39
4.4	Constraints Suffered by Indonesian Women Entrepreneurs	40
4.5	The Result of Financial Exclusion of Women Entrepreneurs in Indonesia	41
4.5.1	Research Conducted in Indonesia	41
4.6	Recommendations.	48
4.6.1	Micro Financial Products Design	48
4.6.2	Micro-insurance	51
4.7	Conclusion.	52
	References.	52
5	Lowering the Interest Burden for Microfinance	55
5.1	Introduction	55
5.2	Impact of Costs on Interest Burden	57
5.3	Mobile Technologies Innovations	60
5.3.1	Mobile Technologies for Microfinance	60
5.3.2	New Mobile Micro-banking Systems (MMB).	61
5.4	Financial Market Innovations	62
5.4.1	Financial Market Innovations for Microfinance.	62
5.4.2	Micro-insurance for Microfinance	62

5.5	Design and Implementation of the Mobile Banking System . . .	63
5.6	Conclusion.	68
	References.	68
6	Mobile Core Banking Server.	71
6.1	Introduction	71
6.2	Background and Motivation	74
6.2.1	Rural Finance.	74
6.2.2	Mobile Banking	74
6.2.3	Unbanked Population	75
6.3	MicroBanq System Architecture	75
6.4	Usage Scenarios of MicroBanq System	78
6.4.1	Scenario S1: Creating Saving Account Through MCSOs	78
6.4.2	Scenario S2: Creating Saving Account Through Customer Service Officers at MB.	80
6.4.3	Scenario S3: Saving Account Cash Deposit Through MCSO	80
6.4.4	Scenario S4: Saving Account Withdrawal Through MCSO	80
6.4.5	Scenario L1: Provide Loan Information	81
6.4.6	Scenario L2: Loan Application Through MCSO	81
6.4.7	Scenario L4: Instalment Payment By Cash Through MCSO	81
6.4.8	Scenario T1: Merchant Sell	82
6.5	Interaction Design of Mobile Core-Banking Server	82
6.6	Evaluation of the Mobile Banking Server.	82
6.7	Limitations.	84
	References.	85

Part II Health

7	Automated Health Care Services	89
7.1	Introduction	89
7.2	Inclusive Medical Care (IMC)	90
7.3	Online Medical Knowledgebase	93
7.4	Medical Information Websites	95
7.5	Health Social Network.	97
7.6	Mobile Health	98
7.7	Other Automated Health Care Services	100
7.8	Conclusion.	101
	References.	101

8	Assessing General Well-Being Using Facial Expressions	103
8.1	Introduction	103
8.2	Background	105
8.2.1	Telemedicine	106
8.2.2	Automated Health Assessment Systems	107
8.2.3	Facial Palsy	108
8.2.4	Support Vector Machine	108
8.2.5	Emergent Self-organizing Map	109
8.3	Methodology	109
8.3.1	Extracting De-identified Features	111
8.4	Evaluation of The De-identified Features	111
8.5	Conclusion.	114
	References.	115
9	Automated Diagnoses of Respiratory Health Problems	
	Using Breathing Sounds	119
9.1	Introduction	119
9.2	Feature Extractions	121
9.2.1	Data Acquisition.	121
9.2.2	Pre-processing	122
9.2.3	Audio Feature Extraction	122
9.2.4	Feature Templates Formation	124
9.3	Classification Techniques.	124
9.3.1	SVM.	124
9.3.2	ANN.	125
9.4	Experiments and Results	125
9.4.1	Database	125
9.4.2	Classification Performance Evaluation	126
9.4.3	Effects of Different Classifier	126
9.4.4	Experiment on Breath Disorder Detection	127
9.5	Discussion	128
9.6	Conclusion and Future Directions	129
	References.	129
10	Securing Online Medical Data	133
10.1	Introduction	133
10.2	Overview of Technologies and Algorithms Used	
	for Watermarking	134
10.2.1	Particle Swam Optimization (PSO)	134
10.2.2	Lifting Wavelet Transform (LWT)	135
10.2.3	Singular Value Decomposition (SVD) Principle	135
10.2.4	Cat Map Encryption	135

10.2.5	Watermark Embedding	136
10.2.6	Watermark Extraction	137
10.2.7	Performance Optimization Using PSO	137
10.3	Performance Analysis	138
10.3.1	Watermark Capacity	138
10.3.2	Error Analysis	138
10.3.3	Key Space Analysis	138
10.3.4	Security Analysis of the Estimation Attack.	139
10.4	Experimental Results	139
10.4.1	Imperceptibility	139
10.4.2	Results of PSO Technique	140
10.4.3	Robustness.	141
10.5	Conclusions	142
	References.	143

Part III Education

11	Technology in Education.	147
11.1	Introduction	147
11.2	Mobile Learning for Enhancing Social Experiences.	148
11.3	Mobile Learning for Formative Assessment	148
11.4	Mobilized Curriculums	149
11.5	Types of Research Methodologies and Methods Utilised in m-Learning Research Papers.	151
11.6	Conclusion: Gaps in Literature	152
	References.	153
12	Important Factors in Choosing Tertiary Education Institutes	155
12.1	Introduction	156
12.2	Background	157
12.2.1	Types of Information Sources Affecting International Students	157
12.2.2	Institutional Factors in Choosing Study Abroad Destinations	157
12.2.3	Country Factors in Choosing Study Abroad Destinations	158
12.3	Methodology	158
12.4	Survey Analyses.	160
12.4.1	Demographic Information of Respondents	160
12.4.2	References of Study Abroad Destination	161
12.4.3	Importance of Sources of Information for Prospective Students	161

12.4.4	Importance of Country Factors	163
12.4.5	Importance of Institutional Factors	165
12.4.6	Overall Satisfaction for Studying in Singapore	166
12.5	Hypothesis Testing	167
12.6	Discussion	168
12.7	Conclusion.	169
	References.	169
13	Automated Tutoring System	171
13.1	Introduction	171
13.2	Background	172
13.2.1	Mobile Learning for Enhancing Social Experiences	173
13.2.2	Technologies for Automating Assessment	173
13.3	Mobile Collaborative Experiential Learning (MCEL) System	174
13.3.1	Methodology	174
13.4	Experimental Results.	176
13.5	Conclusion.	177
	References.	177
14	Application of ICT to Improve Rural Livelihood in Vietnam	179
14.1	Introduction	179
14.2	Background	182
14.3	Rural Telecentre Models	186
14.3.1	National Programs for Rural Telecentres in Asia.	186
14.3.2	Telecentre Model Development and Global Lessons Learned.	191
14.3.3	New Rural-Telecentre Model Based on the Social Model	193
14.4	Two Year Pilot Study of the Social Rural-Telecentre Model. . .	193
14.4.1	Project Objective	194
14.4.2	Facilities of Rural Telecentres (RTs)	195
14.4.3	Assessment Method	197
14.5	Assessment Results of the New Telecentre Model.	198
14.6	Conclusion.	201
	References.	203
	Conclusion	205

Emerging Technologies for Emerging Markets

Vong, J.; Song, I.

2015, XVIII, 206 p. 49 illus., Hardcover

ISBN: 978-981-287-346-0